CALIFORNIA
ENERGY
COMMISSION

STARWOOD POWER PROJECT

Application For Certification (06-AFC-10)
Fresno County

PRESIDING MEMBER'S PROPOSED DECISION

DECEMBER 2007
CEC-800-2007-007-PMPD

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CALIFORNIA ENERGY COMMISSION

1516 9th Street
Sacramento, CA 95814
www.energy.ca.gov/sitingcases/starwood/index.html

JEFFREY D. BYRON
Presiding Committee Member

JOHN L. GEESMAN
Associate Committee Member

GARRET SHEAN
Hearing Officer

RAOUL RENAUD
Hearing Officer

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EXECUTIVE SUMMARY:

RECOMMEND APPROVAL WITH CONDITIONS

The Energy Commission approves the proposed 120 megawatt Starwood Power Project (SPP) near Mendota, California, together with the following highlighted measures to mitigate potential environmental and community impacts and comply with applicable laws, ordinances, regulations and standards (LORS):

ENERGY RESOURCES:

✓ The Starwood Project will provide needed peaking generation to Pacific Gas and Electric Company beginning May 2009 pursuant to a 15-year contract approved by the California Public Utilities Commission.

AIR QUALITY

✓ Project emissions will be minimized by use of the Best Available Control Technology and, as necessary, fully offset to avoid any air pollution impact from the project.

NOISE

✓ The Project Owner will implement a pre-existing agreement with the owner of an adjacent residential property to relocate its tenants before the start of noisy construction.

WATER RESOURCES

✓ The project will use the most degraded water reasonably available, which is low-quality groundwater from the existing CalPeak well.

PROJECT BENEFITS

✓ The project will employ a largely local construction workforce, peaking at 110 workers and averaging 74 workers. The 10-months construction payroll is estimated at $6.5 million. Project capital cost is estimated at $67 to $70 million, generating annual property taxes of approximately $793,000. An estimated $1 million will be spent locally for materials and equipment during construction, and an additional $100,000 annually on the operation and maintenance budget.

Dated: December 11, 2007

JEFFREY D. BYRON
Commissioner and Presiding Member
Starwood AFC Committee

JOHN L. GEESMAN
Commissioner and Associate Member
Starwood AFC Committee

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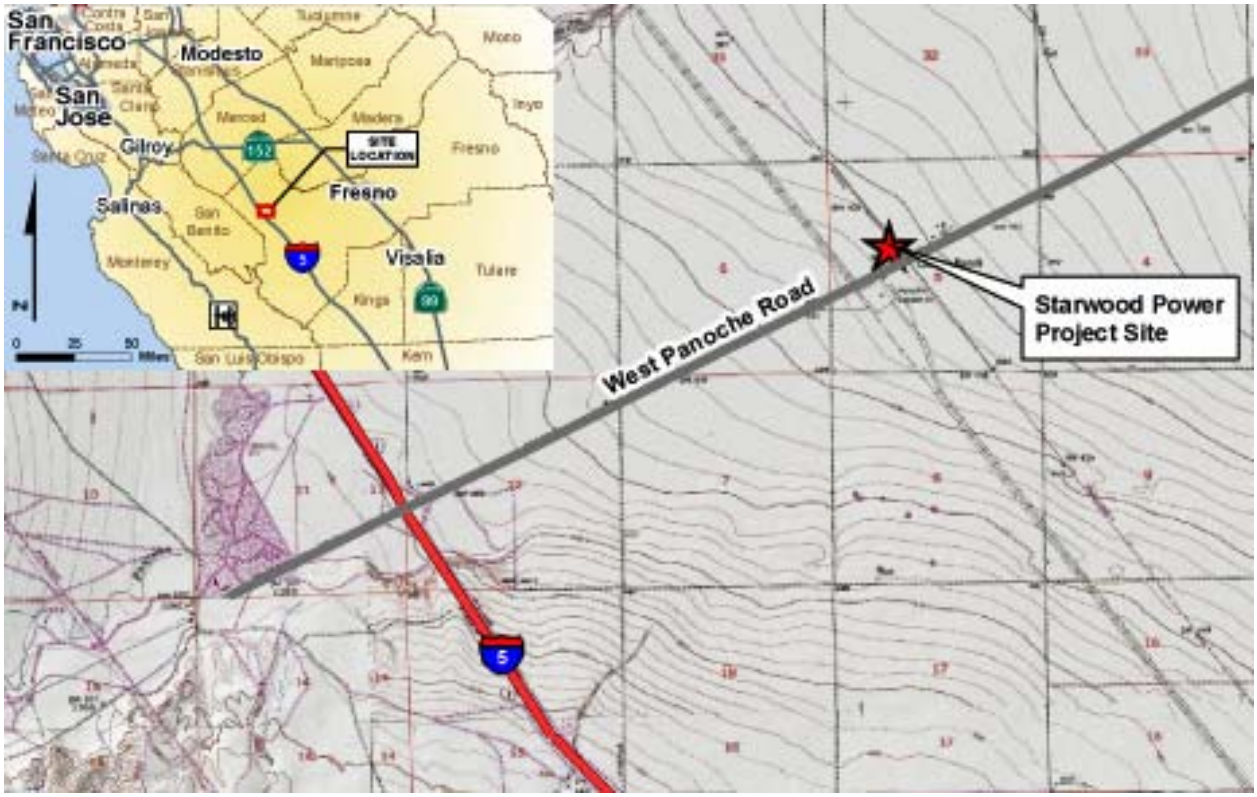
PROJECT DESCRIPTION

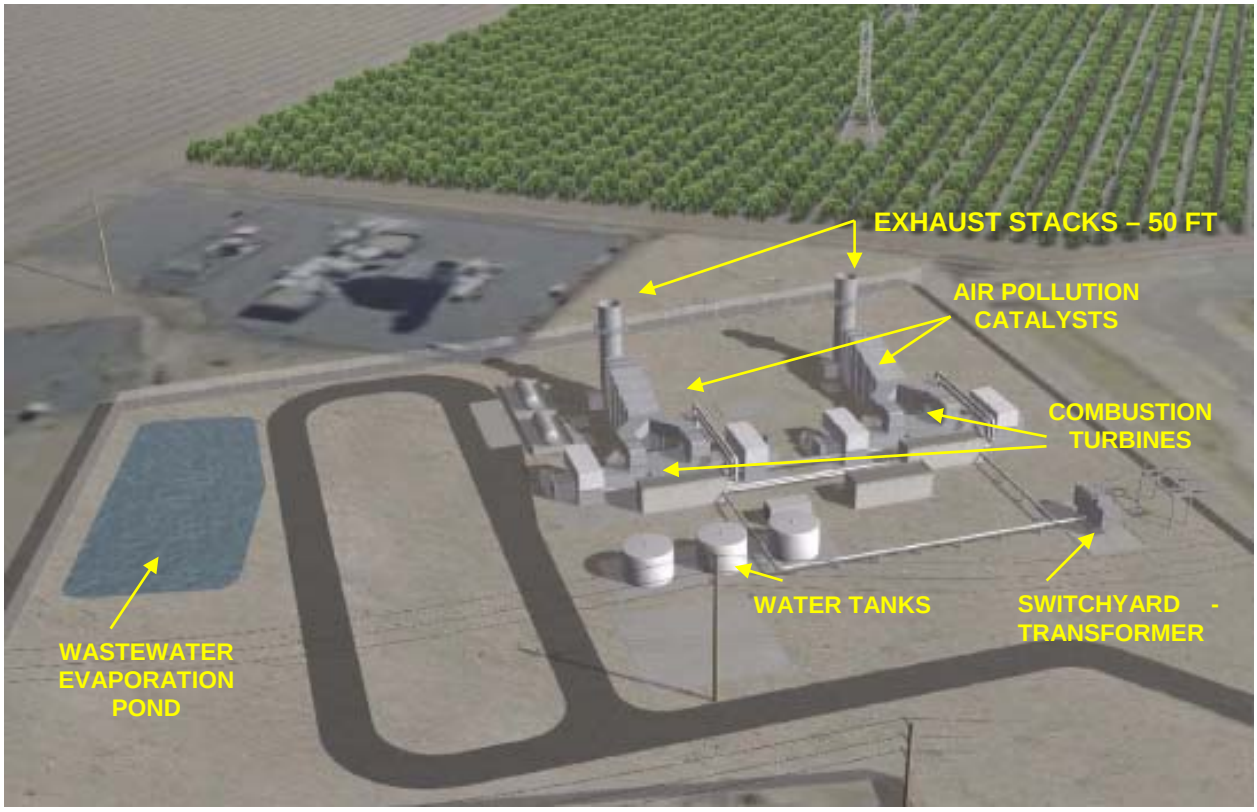
The SPP plant site is located at 43627 West Panoche Road in an unincorporated area of western Fresno County, on a 5.6-acre parcel of land located within a 128-acre parcel. The site is approximately 15 miles southwest of the City of Mendota on West Panoche Road approximately 1 mile southwest of its intersection with South Fairfax Avenue, or alternately 2 miles northeast of the intersection of West Panoche Road and Interstate 5.



The SPP site is leased by Starwood Power-Midway, LLC; adjacent to an existing five unit residence, two existing peaking power plants, and near the PG&E Panoche Substation. The two existing plants are commonly referred to as the 49 MW CalPeak Panoche peaking power plant and the 49 MW Wellhead peaking power plant. Another power plant, commonly referred to as the 400 MW Panoche Energy Center, is proposed for construction immediately southwest of the PG&E Panoche Substation. The proposed Panoche Energy Center is being considered under a separate Energy Commission licensing proceeding (6-AFC-5). The land surrounding these existing and proposed electric facilities is agricultural. (AFC, 3-2; FSA 3-2.)

PROJECT DESIGN

The proposed SPP would be a simple-cycle power plant with a nominal electrical output of 120 MW, consisting of two Pratt & Whitney FT8-3 SwiftPac natural gas-fired combustion turbine generators. Auxiliary equipment would include inlet air foggers with evaporative coolers, a step-up transformer, a compressed-air system, control enclosures, an aqueous ammonia storage tank, a natural gas fuel system, a water treatment system, water storage tanks, a wastewater system, a site stormwater drainage system, and a lined evaporation pond.



Air emissions from the proposed SPP would be controlled using best available control technology. This technology consists of water injection to reduce production of nitrous oxides (NO_x), a selective catalytic reduction system with 19 percent aqueous ammonia to further reduce NOx emissions, and an oxidation catalyst to reduce the emission of carbon monoxide and volatile organic compounds.

While the SPP would be available for operation up to 4,000 hours per year as stated in its PG&E contract, the Applicant expects that it will operate approximately 400 hours per year. This expectation is based on the Applicant's experience with its existing Calpeak Panoche plant, (FSA 3-2)

Transmission Lines & Towers

The SPP would connect to PG&E's electrical transmission system via the tie-line that connects the existing CalPeak Panoche plant to the adjacent PG&E Panoche Substation. A 300-foot, 115 kV generator tap line would originate from a new step-up transformer near the western perimeter of the SPP site, exit from the northwest edge of the site, and travel west into the existing CalPeak Panoche tie-line to the Panoche Substation. The tie-line connecting the existing CalPeak Panoche Plant to PG&E's system is already sized to carry the output of the proposed SPP.

Although the SPP would be interconnected to the CalPeak Panoche transmission system, each project would utilize independent breakers for isolation from the PG&E system. Neither the SPP nor Calpeak Panoche plants would be dependent on the other for its transmission interconnection. No new transmission facilities would be necessary beyond the switchyard. (FSA 3-3)

RELATED FACILITIES

Water Supply:
Peak water usage associated with the SPP would be 98 gallons per minute (gpm) of demineralized water for NOx control and 40 gpm for inlet fogging. On an annual basis, the proposed SPP is anticipated to consume approximately 14 acre-feet per year, assuming 400 hours of operation. Annual water consumption could be as high as 136 acre-feet per year if the SPP operated at the permitted maximum of 4,000 hours per year. Water would be delivered to the site from either a connection to the adjacent and existing CalPeak plant well or a connection to the Baker Farms filter backwash water evaporation pond system. (FSA 3-3)

Gas Pipeline:
Natural gas would be delivered to the SPP from a connection to the existing Calpeak Panoche plant's gas supply which is connected to the existing PG&E trunk line running along West Panoche Road north of the project site. PG&E would tap the 6-inch natural gas service line serving the existing CalPeak plant approximately 25 feet upstream of the existing meter set and connect it with approximately 200 feet of new 6-inch steel pipeline to a new turbine meter set adjacent to the existing meter set. Approximately 600 feet of new 6 inch steel natural gas pipeline would be constructed along the western perimeter of the SPP site to complete the connection from the meter set to the SPP. (FSA 3-3)

Evaporation Pond:
The SPP facility is expected to generate process wastewater at an average rate of 25 gpm. Process and industrial wastewater discharge from the proposed SPP would consist of nonhazardous reject water that would range from 3.4 acre-feet per year based on 400 hours of operation, to approximately 34 acre-feet per year based on 4,000 hours of operation. The wastewater discharge would be sent to an evaporation pond on the east side of the site via a 4-inch PVC gravity pipe. The evaporation pond would be a 25,000-square-foot surface impoundment with a polyethylene liner. Following drying in the evaporation pond, the solids would be removed to a landfill. (FSA 3-3, 4)

PROJECT OBJECTIVES

The SPP is designed as a peaking facility to meet electrical generation loads during periods of high demand, which generally occur during the daytime hours, and more frequently during the summer than other times of the year. The project is expected to have an annual capacity factor of no higher than 46 percent, depending on weather and customer demand, load growth, hydroelectric supplies, generation retirements and replacements, the level of generating-unit and transmission outages, and other factors.

The project objectives are based on the terms and conditions set forth in a power purchase agreement between the applicant and Pacific Gas and Electric Company (PG&E). These terms and conditions contain the elements listed below.

- The power supply contract term would be 15 years.

- The SPP would be constructed on a parcel of land adjacent to the existing PG&E Panoche Substation which is also adjacent to the existing 49 MW CalPeak Panoche Power plant on West Panoche Road, Fresno County, California.

- The SPP would have two (2) FT8-3 SwiftPac CTG units. The Applicant has stated that the four turbines contained in the two units would be able to ramp from 0 to 100 percent load in a fairly short time and would provide an efficient heat rate for a peaking plant.

- Each of these combustion turbine units would provide approximately 54.9 MW of capacity in summer peak conditions with very low emission levels. This capacity and these emission levels could only be obtained with water injection and inlet cooling foggers.

- A turbine efficiency of 10,600 Btu/kWh would be produced at 100 percent rated capacity, summer peak conditions.

- PG&E would have the ability to dispatch each of the units as system conditions required.

- The entire SPP would be on line and available for PG&E to dispatch into the grid on or before May 1, 2009.

- The SPP would be available for up to 4,000 hours per year. (FSA 3-1)

PROJECT CONSTRUCTION AND OPERATION

The Applicant proposes to initiate construction of the SPP in the summer of 2008. The project is expected to take 10 months for construction and startup testing, and could begin commercial operation as early as the summer of 2009. The construction workforce is projected to average 74 workers per month and would peak during the fourth through sixth months with up to 110 workers on site. The plant would employ one full-time maintenance technician/operator for onsite operations. The construction storage and laydown areas would be confined to the existing site. The planned operational life of the facility would be 30 years, but the plant could remain operational for a longer period if it were still viable. (FSA 3-4)

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AIR QUALITY – Summary of Findings and Conditions

	PROJECT	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Construction Equipment/ Construction Dust	**MITIGATION**	**None**	**YES**

Construction: Large construction equipment potentially contributes to existing violations of state 24-hour and annual PM10 standards. To minimize PM10 emissions, the Project Owner shall require its construction contractors to minimize emissions from diesel-powered earthmoving equipment.

MITIGATION:

- ☑ The Project Owner shall require construction contractors to mitigate diesel emissions by measures such as the use of ultra-low sulfur diesel fuel, and use of engines meeting California Off-road Diesel Emission standards or use of catalyzed diesel particulate filters. Condition **AQ-SC5**.

Grading and excavation activities potentially produce dust that can be transported off-site by wind. These project construction activities would further exacerbate existing violations of the state PM10 standards, and thus constitute a significant air quality impact for PM10. To control airborne fugitive dust, the Project Owner shall water or apply chemical dust suppressants to disturbed areas, apply gravel or paving to traffic areas, and wash wheels of vehicles or large trucks leaving the site.

MITIGATION:

- ☑ The Project Owner shall prepare and implement a Fugitive Dust Mitigation Plan to minimize dust during construction. Condition: **AQ-SC3 & AQ-SC4.**

Federal & California Air Quality Standards	*PROJECT*	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Ozone (O3)	**MITIGATION**	**None**	**YES**
	The project location is designated "serious non-attainment" for federal and state standards for ozone, which is primarily formed by chemical reactions between nitrogen oxides (NOx) and precursor organic compounds (VOC) in sunlight. Water injection in the combustion turbine combustors and Selective Catalytic Reduction (SCR) in the flue gas stack will minimize power plant emissions of NOx as an ozone precursor. Since emissions would contribute to a violation of the ozone standards, the Project Owner shall obtain NOx offsets. **MITIGATION:** ☑ The Project Owner shall use SCR to meet the 2.5 ppm BACT emission limitation for NOx. Condition: **AQ- 4 & AQ-29.** ☑ The Project Owner shall install a continuous emissions monitoring system for NOx and report emissions. Condition: **AQ-17**. ☑ The Project Owner shall obtain NOx offsets. Condition: **AQ-1**		
Nitrogen Dioxide and NOx	**MITIGATION**	**None**	**YES**
	The project location is designated attainment for both the state and federal NO_2 ambient air quality standards. NO_2 is formed in the combustion process. Power plant NOx emissions will be minimized by water injection in the turbine combustors and SCR in the flue gas stack. For NO_2, the emission rate is limited to 2.5 ppm. NO_2 will be continuously monitored in the stack. NOx emissions would not cause a violation of NO_2 standards; however, NOx offsets are required as precursors to ozone. **MITIGATION:** ☑ The Project Owner shall use SCR to meet the 2.5 ppm BACT emission limitation for NOx. Condition: **AQ- 4 & AQ-29.** ☑ The Project Owner shall install a continuous emissions monitoring system for NOx and report emissions. Condition: **AQ-17**. ☑ The Project Owner shall obtain NOx offsets. Condition: **AQ-1.**		

	PROJECT	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Carbon Monoxide (CO)	**MITIGATION**	**None**	**YES**
	The project location is designated attainment for federal and California CO standards. CO is formed in the combustion process. CO emissions, limited to 6 ppm, will be minimized by good combustion practices. An oxidizing catalyst will be used in the exhaust stream. CO will be continuously monitored in the stack. **MITIGATION:** ☑ The Project Owner shall limit CO emissions to 6.0 ppm. Condition: **AQ-29.** ☑ The Project Owner shall install a continuous emissions monitoring system for CO. Condition: **AQ-17.** ☑ The Project Owner shall use an oxidation catalyst. Condition: **AQ-13**.		
Particulate Matter 10 Microns (PM10) and 2.5 Microns (PM2.5)	**MITIGATION**	**None**	**YES**
	SJVAPCD is designated serious non-attainment for federal PM10 standards and non-attainment for state PM10 and PM2.5 standards. Primary PM10 and PM2.5 are formed by the combustion gases in the exhaust stack. Secondary PM10 is formed downstream by mixed gases in the atmosphere. The District has not been able to address PM2.5 in its rules within the schedule of this proposed project. The Energy Commission, however, has a CEQA responsibility to address PM2.5 emissions since the project region is not in attainment of those standards. Use of CPUC pipeline-quality natural gas is BACT for particulate matter. Since project PM10/PM2.5 emissions will contribute to an existing violation of air quality standards, offsets are required. PM10 offsets mitigate for PM2.5 emissions. **MITIGATION:** ☑ The Project Owner shall use CPUC pipeline-quality natural gas to limit PM10 emissions. Condition: **AQ-28.** ☑ The Project Owner shall obtain PM10 offsets. Condition**: AQ-SC8 & AQ-2.**		

	PROJECT	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Sulfur Dioxide (SO_2)	**MITIGATION**	**None**	**YES**
	Sulfur Dioxide (SO_2) is produced from the combustion of fuels containing sulfur. The project location is designated attainment for federal and state SO_2 standards. The proposed project is using pipeline-quality natural gas, thus ensuring that sulfur emissions will be well within emission limits and not create violations of SO_2 standards. However, SO_2 emissions can contribute to the formation of secondary pollutants, such as secondary PM10/PM2.5, thus contributing to a violation of the state PM10/PM2.5 standards. The Applicant has proposed to provide offsets for this potential contribution. **MITIGATION:** ☑ The Project Owner shall control SOx (as SO_2) to meet emission limitations. Condition: **AQ-29.** ☑ The Project Owner shall obtain SOx offsets as a precursor to secondary PM10 formation. Condition: **AQSC-8 & AQ-2**.		
Volatile Organic Compounds (VOC)	**MITIGATION**	**None**	**YES**
	There are no state or federal standards for VOC, per se. VOCs are a precursor for ozone. (See ozone, above.) Consequently, limiting VOC emissions and the use of VOC offsets are part of the strategy for ozone attainment. VOCs are formed in the combustion process. BACT for VOC emissions will be achieved by use of good combustion practices, which use a fuel-to-air ratio resulting in low VOC emissions. An oxidation catalyst for controlling CO emissions further reduces VOC emissions. VOC offsets are also used for PM10 mitigation. **MITIGATION:** ☑ The Project Owner shall control VOC to meet an emission limitation of 2.0 ppm. Condition: **AQ-29**. ☑ The Project Owner shall obtain VOC offsets. Condition: **AQSC-8.**		

	PROJECT	CUMULATIVE IMPACTS	LORS COMPLIANCE
Ammonia Slip	**CONDITION**	**None**	**YES**
	Significant amounts of ammonia will be injected into the flue gas stream as part of the SCR system. Not all of this ammonia will mix with the flue gases to reduce NOx; a portion of the ammonia will pass through the SCR and will be emitted unaltered, out the stacks. These ammonia emissions are known as ammonia slip. For a simple cycle project, the SJVAPCD's requirement for ammonia slip is 10 ppm. **MITIGATION:** ☑ The Project Owner shall limit ammonia slip to 10 ppm. Condition: **AQ-31**.		
Commissioning & Startup	**Insignificant**	**None**	**YES**
	The initial commissioning of a power plant refers to the time frame between completion of construction and the consistent production of electricity for sale to the market. Normal operating emission limits usually do not apply during initial commissioning procedures. The turbines will go through several series of tests during initial commissioning. Commissioning is a one-time event, subject to controls to minimize emissions. Therefore, there are no significant air quality impacts from facility commissioning. All startup scenarios result in emissions that are higher than normal operating emission limits; however, the number of startup events and their duration are controlled by District rules limiting daily and annual emissions. Thus, there is no significant air quality impact from facility startup.		
Greenhouse Gases	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS**		
	The combustion of fossil fuels produces air emissions known as greenhouse gases, primarily carbon dioxide, nitric oxide, and methane, known to contribute to the warming of the earth's atmosphere. Climate change from rising temperatures represents a risk to California's economy, public health, and environment. **CONDITION:** ☑ The Project Owner shall report the quantities of relevant greenhouse gases emitted as a result of electric power production. Condition: **AQ-SC9.**		

AIR QUALITY – GENERAL

This analysis evaluates the expected air quality impacts of the emissions of criteria air pollutants due to the planned construction and operation of the project. Criteria air pollutants are defined as those for which a state or federal ambient air quality standard has been established to protect public health. They include nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), and particulate matter, both less than 10 microns in diameter (PM10) and less than 2.5 microns (PM2.5). Volatile organic compounds (VOCs) are regulated as precursors to ozone.

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

- whether the project conforms with applicable Federal, State and local air quality laws, ordinances, regulations and standards;
- whether the project will cause significant air quality impacts, including a new violation of ambient air quality standards or contribution to existing violations of those standards; and
- whether the mitigation proposed for the project is adequate to lessen the potential impacts to a level of insignificance.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) prepared its Revised Final Determination of Compliance (FDOC) September 5, 2007. Project equipment includes two Pratt & Whitney FT8-3 SwiftPac units, each of which consists of two natural gas-fired combustion turbine generators (CTGs) operating in simple cycle mode and producing approximately 120 MW total. Two 50-foot-tall, 15-foot diameter stacks would release the CTG exhaust gas into the atmosphere.

The CTGs would each be equipped with water injection to the combustors for reducing production of NOx, a selective catalytic reduction (SCR) system with 19.5 percent aqueous ammonia injection to further reduce NOx emissions, and an oxidation catalyst to reduce CO emissions. (FSA, 4.1-21)

Each Starwood CTG would operate up to 4,000 hours per year, as required by PG&E, which equates to an annual capacity factor of 46 percent. The applicant's requested maximum quarterly operating capacity is as follows:

1st Quarter – 800 hours
2nd Quarter – 800 hours
3rd Quarter – 1,400 hours
4th Quarter – 1,000 hours

As a self-described peaking facility the actual facility operation will be to provide maximum electrical output during summer periods when demand for electricity is highest. Based on Staff's review of the Quarterly Fuel and Energy Report (QFER) data for simple cycle peaking plants, such as the Tracy, Hanford, Henrietta, Calpeak Panoche and Wellhead Power, the Starwood facilities will likely operate less than five

percent of the time annually, or approximately ten percent or less of the requested 4,000 hour per year maximum capacity. (FSA 4.1-22)

This project has been defined by the SJVAPCD as a modification of the existing adjacent Calpeak Panoche peaking power plant owned by the Applicant. This definition impacts the New Source Review requirements for the project, particularly offsets as the existing facility is included in the offset emission trigger totals. For Energy Commission review purposes, with the exception of implementation of relevant SJVAPCD requirements, this project is not considered a modification to an existing source. (FSA 4.1-18)

Construction Equipment/Fugitive Dust

Construction

The power plant construction requires the use of large earth moving equipment, which generates considerable combustion emissions, along with creating fugitive dust emissions during grading, site preparation, foundations, underground utility installation, and building construction. (FSA 4.1-19)

The Applicant performed a modeling analysis of the potential construction impacts at the project site indicating the potential to contribute significantly to violations of the state 24-hour and annual PM10 and PM2.5 Ambient Air Quality Standards (AAQS). The Applicant's modeling analysis also indicates that the maximum NOx, CO and SO_2 impacts will remain below AAQS. However, the project's construction NOx emissions have been estimated to exceed the SJVAPCD CEQA significance threshold of 10 tons per year. (FSA 4.1-25, 26, 29)

Both the Applicant and the Staff agreed that any construction impacts would be mitigated to the extent feasible by "boilerplate" construction Conditions of Certification. The boilerplate construction Conditions of Certification were derived from previously certified large and lengthy construction projects and thus will be very effective for this project. (FSA 4.1-27-29)

The project will undertake one or more of the following measures to reduce diesel emissions during construction activities:

To control exhaust emissions from heavy diesel construction equipment:

- Limit engine idle time and shutdown equipment when not in use.
- Perform regular preventative maintenance to reduce engine problems.
- Use ultra-low sulfur fuel for all heavy construction equipment.
- Ensure that all heavy construction equipment complies with California Off-road Diesel Emission standards or use catalyzed diesel particulate filters. (**AQ-SC5)**

To control fugitive dust emissions:

- Use water application or chemical dust suppressant on unpaved travel surfaces and parking areas.
- Limit vehicle speed.
- Sweep or flush paved roadways of built-up materials.
- Use wetting or covering of stored earth materials on-site.
- Require all trucks hauling loose material to either cover or maintain a minimum of two feet of freeboard.
- Use gravel pads and wheel washers as needed.
- Use windbreaks and chemical dust suppressant or water application to control wind erosion from disturbed areas.
- Monitor dust plumes transported off-site. (**AQ-SC3 & AQ-SC4)**

The effectiveness of proposed mitigation for construction equipment emissions also depends largely on the vigilance of construction personnel to operate equipment properly. Only if the mitigation measures for fugitive dust-generating activities are applied correctly and with sufficient frequency, can the control efficiency can be effective. With monthly reporting and monitoring of certain environmental parameters to maintain a high degree of day-to-day vigilance, the foregoing measures would reduce potential the PM10 and ozone impacts from the construction to a level of insignificance. (FSA 4.1-25)

MITIGATION:

- ☑ The Project Owner shall require construction contractors to mitigate diesel emissions by measures such as the use of ultra-low sulfur diesel fuel, and use of engines meeting California Off-road Diesel Emission standards or use of catalyzed diesel particulate filters. Condition **AQ-SC5**.
- ☑ The Project Owner shall prepare and implement a Fugitive Dust Mitigation Plan to minimize dust during construction. Conditions: **AQ-SC3 & AQ-SC4**.

PROJECT OPERATION

All emissions calculations and limitations are based on an assumed availability of 4,000 hours per year, including startups and shutdowns. SPP has estimated its capacity factor at 46 percent. (FSA 4.1-22)

Ozone

Ozone is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants. Nitrogen oxides (NOx) and hydrocarbons [Volatile Organic Compounds (VOCs)] interact in the presence of sunlight to form ozone. The SJVAPCD is designated as “serious non-attainment” for state and federal standards. Controlling the ozone precursors, NO_2 and VOC, is the strategy for attaining the state and federal ozone ambient air quality standards. (FSA 4.1-7)

A network of monitoring stations normally determines ambient air quality conditions in the SJVAPCD. The monitoring station closest to the proposed project site is the Fresno First Street Station, approximately 46 miles east northeast of the project site. This station monitors ambient concentrations of lead, ozone, NO_2, CO, PM10, and PM2.5. The Fresno Fremont School Station, approximately 43 miles east northeast of the project site, is the closest station that most recently monitored SO_2. To the extent that monitoring data from these two Fresno stations have been used to characterize conditions at the project site, this practice would generally overestimate existing pollutant levels at the Starwood project site because of the much lower population and level of development of this area compared to the monitoring stations in the urban areas of Fresno. (FSA 4.1-6)

There are a significant number of exceedances of the ozone ambient air quality standards throughout the District since 1991. (FSA 4.1-8)

Ozone reduction requires reducing NOx and VOC emissions. To reduce NOx emissions, the Applicant proposes to use water injection into the turbine combustor cans to reduce combustion temperatures and the formation of thermal NOx, which is the primary source of NOx emissions. The project will also use a post-combustion Selective Catalytic Reduction (SCR) system. SCR refers to a process that chemically reduces NOx to elemental nitrogen and water vapor by injecting ammonia into the flue gas stream in the presence of a catalyst and excess oxygen. The process is termed selective because the ammonia preferentially reacts with NOx rather than oxygen.

To reduce VOC (and CO) emissions, the Applicant proposes to use advanced combustion control to achieve CO limits. Further, the Applicant proposed oxidation catalyst, which chemically reacts organic compounds and CO with excess oxygen to form nontoxic carbon dioxide and water. Unlike the SCR system for reducing NOx, an oxidation catalyst does not require any additional chemicals. (FSA 4.1-33)

The SJVAPCD specifies a NOx limit of 2.5 ppm (1-hour average limit) for BACT. The SJVAPCD established a CO limit of 6.0 ppm (1-hour average), and VOC limit of 2.0 ppm (1-hour average). (FSA 4.1-33)

In addition to emission control strategies included in the project design, the Applicant would provide offsets of NOx as an ozone precursor. District Rule 2201 requires NOx offsets in the form of Emission Reduction Credits (ERCs). The Applicant has obtained sufficient NOx offsets generated from the retrofit of stationary reciprocating engines with pre-combustion chambers. (FSA 4.1-33-35)

MITIGATION:

- ☑ The Project Owner shall use SCR to meet the 2.5 ppm BACT emission limitation for NOx. Condition: **AQ-4 & AQ-29.**
- ☑ The Project Owner shall install a continuous emissions monitoring system for NOx and report emissions. Condition: **AQ-17**.
- ☑ The Project Owner shall obtain NOx offsets. Condition: **AQ-1**

Nitrogen Dioxide

Nitrogen dioxide (NO_2) can be emitted directly as a result of combustion or can be formed from nitric oxide (NO) and oxygen. NO is typically emitted from combustion sources and readily reacts with oxygen or ozone to form NO_2. The NO reaction with ozone can occur within minutes and is typically referred to as ozone scavenging. By contrast, the NO reaction time with oxygen is on the order of hours under the proper conditions. The SJVAPCD is designated "attainment" for the state ambient air quality standards and "unclassified/attainment" for the federal NO_2 standard. (FSA AQ Table 3) Project emissions would not create a violation of NO_2 standards. (FSA 4.1-31)

Over the last 20 years, combustion turbine manufacturers have focused attention on limiting the NOx formed during combustion. One method has been water injected into the combustor cans to reduce combustion temperatures and the formation of thermal NOx, which is the primary source of NOx emissions from a CTG. This method has been employed for many years, is well understood, and has been proposed for the turbines for this project.

To further reduce NOx emissions the project will use SCR, a process that chemically reduces NOx by injecting ammonia into the flue gas stream over a catalyst in the presence of oxygen. (FSA 4.1-33)

In addition to emission control strategies included in the project design, the Applicant would provide offsets of NOx as an ozone precursor. The Applicant has obtained sufficient NOx offsets. (FSA 4.1-33, 34)

MITIGATION:

- ☑ The Project Owner shall use SCR to meet the 2.5 ppm BACT emission limitations for NOx. Condition: **AQ- 4 & AQ-29.**
- ☑ The Project Owner shall install a continuous emissions monitoring system for NOx and report emissions. Condition: **AQ-17**.
- ☑ The Project Owner shall obtain NOx offsets. Condition: **AQ-1.**

Carbon Monoxide

Carbon monoxide (CO) is a directly emitted air pollutant generated from most combustion engines and other combustion activities. CO is considered a local pollutant, as it will rapidly oxidize. It is thus found in high concentrations only near the source of emissions. Automobiles and other mobile sources are the principal source of CO emissions. High levels of CO emissions can also be generated from fireplaces and wood-burning stoves. The SJVAPCD is designated "attainment" for the federal and state CO ambient air quality standards. The Applicant's modeling indicates that normal project operation would not create a violation of applicable CO standards. (FSA 4.1-14 & 31)

Through the use of advanced combustion control, the Applicant proposed to achieve CO concentrations of 6.0 ppm, using an oxidizing catalyst system. (FSA 4.1-33)

MITIGATION:

- ☑ The Project Owner shall limit CO emissions to 6.0 ppm. Condition: **AQ-29.**
- ☑ The Project Owner shall install a continuous emissions monitoring system for CO. Condition: **AQ-17**.
- ☑ The Project Owner shall use an oxidation catalyst. Condition: **AQ-13**.

Particulate Matter – PM10

PM10 is a particulate that is 10 microns in diameter or smaller and is suspended in air. PM10 can be directly emitted from a combustion source (primary PM10), soil disturbance (fugitive dust) or it can form miles downwind (secondary PM10) from some of the constituents of combustion exhaust (NOx, SOx, VOC and ammonia). Secondary particulates are probably a minor fraction of the overall PM10 concentrations in the project area because there are few major sources of precursors. (FSA 4.1-11)

The SJVAPCD has been designated a serious non-attainment zone for the federal 24-hour standard and non-attainment for the state 24-hour ambient air quality standards. (FSA 4.1-10) The highest PM10 concentrations are generally measured in the fall and winter when there are frequent low-level inversions. During the wintertime high PM10 episodes, the contribution of ground level releases to ambient PM10 concentrations is disproportionately high.

Fine Particulate Matter - PM2.5

PM2.5, a subset of PM10, consists of particles with an aerodynamic diameter less than or equal to 2.5 microns. Particles within the PM2.5 fraction penetrate more deeply into the lungs, and can be much more damaging by weight than larger particulates. PM2.5 is primarily a product of combustion and includes nitrates, sulfates, organic carbon (ultra fine dust) and elemental carbon (ultra fine soot).

The highest PM2.5 concentrations are generally measured in the winter. The relative contribution of wood-smoke particles to the PM2.5 concentrations may be even higher than its relative contribution to PM10 concentrations, considering that most of the wood-smoke particles are smaller than 2.5 microns. (FSA 4.1-13)

The SJVAPCD is designated as non-attainment for the state PM2.5 standard. Monitoring data shows diminishing exceedances of the federal and state 24-hour PM2.5 standards. (FSA 4.1-13)

The exclusive use of pipeline quality natural gas, an inherently clean fuel that contains very little noncombustible solid residue, will limit the formation of PM10. (FSA 4.1-31)

The Applicant's modeling indicates that the project's normal operation may exacerbate violations of PM10 and PM2.5 standards. (FSA 4.1-31)

The Applicant proposes the use of SOx for PM10 interpollutant offsets. SOx is accepted as one of the major precursors of PM10 and PM2.5 through reaction with ammonia to form ammonium sulfates. Reductions in SO_2, particularly in areas that are ammonia rich such as the SJVAB, will reduce secondary particulate formation. (FSA 4.1-36)

Therefore, interpollutant offsets of SOx for PM10 can be used to reach the goal of mitigating a project's impacts to regional ambient particulate concentrations. The key issue is the determination of an appropriate interpollutant offset ratio, which depends on the existing levels of PM precursors and the general air chemistry of the area in question. The District reviewed and revised the interpollutant offset ratio to 1.867:1. Thus, Applicant is in compliance with the District's PM10 offset requirements. (FSA 4.1-36)

MITIGATION:

- ☑ The Project Owner shall use CPUC pipeline-quality natural gas to limit PM10 emissions. Condition: **AQ-28.**
- ☑ The Project Owner shall obtain PM10 offsets. Condition**: AQSC-8 & AQ-2.**

Sulfur Dioxide

Sulfur dioxide is typically emitted as a result of the combustion of fuel containing sulfur. Natural gas contains very little sulfur and consequently results in very low SO_2 emission when combusted. The SJVAPCD is designated "attainment" for state and federal SO_2 ambient air quality standards. (FSA 4.1-16)

The modeling results indicate that the project's operational impacts would not create violations of SO_2 standards. (FSA 4.1-31) However, SO_2 emissions can contribute to the formation of secondary pollutants, such as secondary PM10, thus contributing to a violation of the state and federal PM10 and PM2.5 standards. The Applicant has proposed to provide offsets for this potential contribution. The Applicant has identifies sufficient SO_2 ERCs. (FSA 4.1 -37)

MITIGATION:

- ☑ The Project Owner shall control SOx (as SO_2) to meet emission limitations. Condition: **AQ-29.**
- ☑ The Project Owner shall obtain SOx offsets as a precursor to secondary PM10 formation. Condition: **AQSC-8 & AQ-2**.

Volatile Organic Compounds

There are no state or federal ambient air quality standards for Volatile Organic Compounds (VOC). VOCs are a precursor for ozone. Limits on VOC emissions and the use of VOC offsets generally part of the strategy for ozone attainment. VOCs are formed in the combustion process. BACT for VOC emissions will be achieved by use of good combustion practices, which use a fuel to air ratio resulting in low VOC emissions.

The oxidation catalyst for CO emissions limits further reduces VOC emissions. (FSA 17 & 33)

Although not required by District rule, the Applicant has obtained sufficient VOC Emission Reduction Credits (ERCs) to offset its recalculated emissions, as part of CEQA mitigation for PM10, Sox and VOC. (FSA 4.1-35 & 37)

MITIGATION:

- ☑ The Project Owner shall control VOC to meet an emission limitation of 2.0 ppmvd. Condition: **AQ-29**.
- ☑ The Project Owner shall obtain VOC offsets. Conditions: **AQSC-8.**

Ammonia Emissions

Due to the large combustion turbines used in this project and the need to control NOx emissions, significant amounts of ammonia will be injected into the flue gas stream as part of the SCR system. Not all of this ammonia will mix with the flue gases to reduce NOx; a portion of the ammonia will pass through the SCR and will be emitted unaltered, out the stacks. These ammonia emissions are known as ammonia slip. The maximum permitted ammonia slip rate only occurs after significant degradation of the SCR catalyst, usually five years or more after commencing operations. At that point, the SCR catalysts are removed and replaced with new catalysts.

The San Joaquin Valley Air Pollution Control District's PDOC permitted ammonia slip level is 10 ppm. For simple cycle projects, such as Starwood, Staff agrees that a 10 ppm ammonia slip level is adequate. (FSA 4.1-38)

MITIGATION:

- ☑ The Project Owner shall limit ammonia slip to 10 ppm. Conditions: **AQ-31**.

Commissioning and Start-Up

New power generation facilities must go through an initial firing and commissioning phase before being deemed commercially available to generate power. The initial commissioning of a power plant refers to the time frame between completion of construction and the consistent production of electricity for sale on the market. During this period, emissions may exceed permitted levels due to numerous startups and shutdowns, periods of low load operation, and other testing required before emission control systems are fine-tuned for optimum performance.

The Applicant did not model the worst-case startup NOx and CO emissions, but rather modeled the commissioning emissions, which are higher than the startup emissions, to determine worst-case short-term operating impacts for the project. The SO_2 and PM10 emissions and ambient air quality impacts are not forecast to be higher during initial commissioning or startup/shutdown events than they are under normal operation.

The ISC-PRIME model used for the Applicant's modeling analysis shows the worst-case emissions would not cause an exceedance of the one-hour NO_2 standard or the one-hour and eight-hour CO standards. Therefore, the modeling results indicate that the commissioning emissions, and by comparison the startup emission impacts, do not have the potential to cause significant short-term ambient air quality impacts. (FSA 4.1-32)

Visibility

Visibility in the region of the project site depends upon the area's natural relative humidity and the intensity of both particulate and gaseous pollution in the atmosphere. The most straightforward characterization of visibility is probably the visual range (the greatest distance that a large dark object can be seen). However, in order to characterize visibility over a range of distances, it is more common to analyze the changes in visibility in terms of the change in light-extinction that occurs over each additional kilometer of distance (1/km). In the case of a greater light-extinction, the visual range will decrease. The SJVAB is currently designated as unclassified for visibility reducing particles. (FSA 4.1-16, 17)

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.

This analysis is primarily concerned with "criteria" air pollutants. Such pollutants have impacts that are usually (though not always) cumulative by nature. Rarely will a project cause a violation of a federal or state criteria pollutant standard. However, a new source of pollution may contribute to violations of criteria pollutant standards because of the existing background sources or foreseeable future projects. Air districts attempt to attain the criteria pollutant standards by adopting attainment plans, which comprise a multi-faceted programmatic approach to such attainment. Depending on the air district, these plans typically include requirements for air "offsets" and the use of "Best Available Control Technology" for new sources of emissions, and restrictions of emissions from existing sources of air pollution.

Since the power plant air quality impacts can be reasonably estimated through air dispersion modeling, the project contributions to localized cumulative impacts can be estimated. To represent past and, to an extent, present projects that contribute to

ambient air quality conditions, the Commission staff uses ambient air quality monitoring data.

First, the Commission staff (or the Applicant) works with the air district to identify all projects that have submitted, within the last year of monitoring data, a new application for an authority to construct (ATC) or permit to operate (PTO) and applications to modify an existing PTO within six miles of the project site. Beyond six miles, there is little or no measurable cumulative overlap between stationary emission sources. The non-photochemical-reactant pollutant emission impacts of the criteria pollutant emissions (i.e., NOx, SOx, CO, PM10 and PM2.5) have, from Staff's experience with air dispersion modeling, had a finite time and distance to remain airborne. In Staff's experience with using the USEPA air dispersion models (SCREEN, ISCST3 and AERMOD), project non-photochemical-reactant pollutant emission impacts do not approach or go beyond or six miles. This effectively identifies all new emissions that emanate from a single point (e.g., a smoke stack), referred to as "point sources." The submittal of an air district application is a reasonable demarcation of what is "reasonably foreseeable".

Second, the Commission staff (or the Applicant) works with the air district and local counties to identify any new area sources within six miles of the project site. As opposed to point sources, area sources include sources like agricultural fields, residential developments or other such sources that do not have a distinct point of emission. New area sources are typically identified through draft or final Environmental Impact Reports (EIR) that are prepared for those sources. The initiation of the EIR process is a reasonable basis on which to determine what is "reasonably foreseeable" for new area sources.

Thus, the next step is to review the available EIR(s) and permit application(s), and determine what sources must be modeled and how they must be modeled. Once the modeling results are interpreted, they are added to the background ambient air quality monitoring data, and thus the modeling portion of the cumulative assessment is complete.

The original list of possible new sources from the SJVAPCD included 12 sources. No significant area sources were identified within six miles of the project site. Of the 12 stationary sources identified by SJVAPCD:

- 2 are included in the cumulative modeling analysis (Cal Peak Power Panoche and Wellhead Power Panoche),
- 4 were VOC sources (i.e. gasoline stations) and are not appropriate for modeling,
- 6 were for modifications to existing sources that resulted in either emission reductions, or insignificant increases in criteria pollutants. (FSA 4.1-43)

The Panoche Energy Center (PEC) project that is being licensed concurrently with the Starwood project was not included in the SJVAPCD list but was included in the Applicant's cumulative modeling analysis.

The results of this modeling effort show that Starwood, along with the other three peaking plants, will contribute to existing violations of the PM10 and PM2.5 ambient air

quality standards. The results also show that Starwood, along with the other three peaking power plants, will not contribute to new AAQS violations for any of the other pollutants modeled. (FSA 4.1-43)

The Starwood and Panoche projects will provide emission reduction credits for PM10 and particulate precursor pollutants (NOx, SOx and VOC). These offsets will be in amounts much greater than the expected operation of these peaking power plants. Therefore, the particulate matter (PM10 and PM2.5) operating impacts after mitigation are considered to be less than significant.

In addition to the potential for operating cumulative impacts, as discussed above, there is the potential for cumulative construction impacts due to the fact that the construction of this project and the Panoche project may overlap. The cumulative impacts of these two construction activities will somewhat increase downwind pollutant concentration when winds cross from one site to the other. However, the maximum concentrations for both sites occur at the fence line and drop rapidly with distance from the fence line. Since both of these projects have maximum feasible emission controls for construction emissions, the cumulative construction air quality impacts are less than significant. (FSA 4.1-44)

Greenhouse Gas Reporting

In addition to regulated criteria pollutants, the combustion of fossil fuels produces air emissions known as greenhouse gases. These include primarily carbon dioxide, nitric oxide, and methane (unburned natural gas). Greenhouse gases are known to contribute to the warming of the earth's atmosphere. Climate change from rising temperatures represents a risk to California's economy, public health, and environment. In 1998, the Energy Commission identified a range of strategies to prepare for an uncertain climate future, including a need to account for the environmental impacts associated with energy production, planning, and procurement. In 2003, the Energy Commission recommended that the state require reporting of greenhouse gas emissions as a condition of state licensing of new electric generating facilities. Condition of Certification **AQ-SC9** requires the project owner to report the quantities of relevant greenhouse gases emitted as a result of electric power production. Such reporting would be done in accordance with accepted reporting protocols as specified.

The calculations specified in Condition of Certification **AQ-SC9** are based on standard protocols developed by the Intergovernmental Panel on Climate Change, an international scientific body that is responsible for developing a common methodology for developing greenhouse gas inventories for all world governments to follow.

CONDITION:

- ☑ The Project Owner shall report the quantities of relevant greenhouse gases emitted as a result of electric power production. Condition: **AQ-SC9.**

Finding

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

CONDITIONS OF CERTIFICATION

The following Conditions of Certification are taken from the SJVAPCD's Revised Final Determination of Compliance and the Energy Commission Staff's Final Assessment.

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

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

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

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. 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 (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the project site and linear facility routes. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a. All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply

with the dust mitigation objectives of AQ-SC4. The frequency of watering may be reduced or eliminated during periods of precipitation.

b. No vehicle shall exceed 10 miles per hour within the construction site.

c. The construction site entrances shall be posted with visible speed limit signs.

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

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

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

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

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

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

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

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

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

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

n. The main travel route(s) through the site will be graveled and/or paved prior to the completion of the initial grading/site preparation phase of construction if residents will be re-occupying the multi-unit apartment property. To the extent feasible onsite traffic will be limited to these graveled/paved travel routes.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of any complaints filed with the air district in relation to project construction, and (3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

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

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

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified.

AQ-SC5 Diesel-Fueled Engines Control: The AQCMM shall submit to the CPM, in the MCR, a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of controlling diesel construction-related emissions. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

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

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

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

   1. There is no available soot filter that has been certified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or
   2. (The construction equipment is intended to be on-site for ten (10) days or less.
   3. The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

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

   1. The use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.
   2. The soot filter is causing or is reasonably expected to cause significant engine damage.
   3. The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.
   4. Any other seriously detrimental cause which has the approval of the CPM prior to the termination being implemented.

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

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

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of all diesel fuel purchase records, (3) a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that

equipment has been properly maintained, and (4) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 Deleted. See **NOISE-5**.

AQ-SC7 The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. EPA, and any revised permit issued by the District or U.S. EPA, for the project.

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

AQ-SC8 The project owner shall provide emission reduction credits to offset the project's PM10, SOx, and VOC emissions at a ratio of 1:1. These emission reductions shall be provided in the following quarterly amounts (lbs):

ERCs/Pollutant	Q1	Q2	Q3	Q4
SOx for PM10	**5,167**	**5,165**	**9,041**	**6,457**
SOx for SOx	**911**	**911**	**1,595**	**1,139**
VOC	**2,656**	**2,656**	**4,648**	**3,320**

The ERC certificates used shall be ERCs S-2492-5 and N-623-5 as necessary to meet the total SOx ERC burden shown above, and ERCs S-2422-1, S-2493-1, and an additional 390 pounds of VOC ERC certificate(s) that shall be obtained by the applicant prior to initiation of construction, as necessary to meet the VOC ERC burden shown above. Quarterly transfers as allowed by SJVAPCD Rules will be accepted. The project owner shall surrender these ERCs prior to first turbine fire. This condition is in addition to the District's PM10 offset requirements provided in Conditions of Certification **AQ-1 through AQ-3** to make up the difference between the District offset requirements and the CEQA fully offset requirements.

Verification: The project owner shall submit to the CPM documentation that the required additional 390 pounds of VOC ERCs have been obtained at least two working days prior to initiating project construction. The project owner shall submit to the CPM confirmation that the appropriate quantity of SOx and VOC ERCs have been surrendered to the District at least 30 days prior to initial startup. If the CPM, in consultation with the District, approves a substitution or modification, the CPM shall file a statement of the approval with the commission docket and mail a copy of the statement to every person on the post-certification mailing list. The CPM shall maintain an updated list of approved ERCs for the project. Quarterly average fuel sulfur data from the most representative gas utility pipeline monitoring station shall be submitted with the Quarterly Operation Reports (**AQ-SC10**) and the applicant shall demonstrate that the actual annual SO2 emissions remain below the 2.28 tons of emissions that have been offset by complying with this condition.

AQ-SC9 Until the California Global Warming Solutions Act of 2006 (AB32) is implemented, the project owner shall either participate in a GHG registry approved by the CPM, or report on a annual basis to the CPM the quantity of greenhouse gases (GHG) emitted as a direct result of facility electricity production.

The project owner shall maintain a record of fuels types and carbon content used on-site for the purpose of power production. These fuels shall include but are not limited to each fuel type burned: (1) in combustion turbines, (2) HRSGs (if applicable) or auxiliary boiler (if applicable), (4) internal combustion engines, (4) flares, and/or (5) for the purpose of startup, shutdown, operation or emission controls.

The project owner may **perform** annual source tests of CO_2 and CH_4 emissions from the exhaust stacks while firing the facility's primary fuel, using the following test methods or other test methods as approved by the CPM. The project owner shall produce fuel-based emission factors in units of lbs CO_2 equivalent per MMBtu of fuel burned from the annual source tests. If a secondary fuel is approved for the facility, the project owner may also perform these source tests while firing the secondary fuel.

Pollutant	Test Method
CO_2	EPA Method 3A
CH_4	Protocol: EPA Method 18 (VOC measured as CH_4)

As an alternative to performing annual source tests, the project owner may use the Intergovernmental Panel on Climate Change (IPCC) Methodologies for Estimating Greenhouse Gas Emissions (MEGGE). If MEGGE is chosen, the project owner shall calculate the CO_2, CH_4 and N_2O emissions using the appropriate fuel-based carbon content coefficient (for CO_2) and the appropriate fuel-based emission factors (for CH_4 and N_2O).

The project owner shall convert the N_2O and CH_4 emissions into CO_2 equivalent emissions using the current IPCC Global Warming Potentials (GWP). The project owner shall maintain a record of all SF_6 that is used for replenishing on-site transformers. At the end of each reporting period, the project owner shall total the mass of SF_6 used and convert that to a CO_2 equivalent emission using the IPCC GWP for SF_6. The project owner shall maintain a record of all PFCs and HFCs that are used for replenishing on-site refrigeration and chillers directly related to electricity production. At the end of each reporting period, the project owner shall total the mass of PFCs and HFCs used and convert that to a CO_2 equivalent emission using the IPCC GWP.

On an annual basis, the project owner shall report the CO_2 and CO_2 equivalent emissions from the described emissions of CO_2, N_2O, CH_4, SF_6, PFCs, and HFCs.

Verification: The project annual greenhouse gas emissions shall be reported, as a CO_2 equivalent, by the project owner to a climate action registry approved by the CPM, or to the CPM as part of the fourth Quarterly or the annual Air Quality Report, until such time that GHG reporting requirements are adopted and in force for the project as part of the California Global Warming Solutions Act of 2006.

AQ-SC10 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.

DISTRICT Final DETERMINATION OF COMPLIANCE CONDITIONS (SJVAPCD 2007d)

The SJVACPD permits each device separately, which causes duplication of conditions. Staff has compiled the SJVAPCD conditions to eliminate this duplication.

SJVAPCD Permit No. Unit C-7286-1-0: 30 MW Nominally Rated Simple-Cycle Power Generating System #1 Consisting of a 311 MMBTU/HR Pratt & Whitney Model FT8-3 Swiftpac Natural Gas-Fired Combustion Turbine Generator Served by an Inlet Air Filtration and Cooling System, Water Injection, a Selective Catalytic Reduction (SCR) System and a Oxidation Catalyst Powering a 60 MW Nominally Rated Electrical Generator (Shared With C-7286-2)

SJVAPCD Permit No. Unit C-7286-2-0: 30 MW Nominally Rated Simple-Cycle Power Generating System #2 Consisting of a 311 MMBTU/HR Pratt & Whitney Model FT8-3 Swiftpac Natural Gas-Fired Combustion Turbine Generator Served by an Inlet Air Filtration and Cooling System, Water Injection, a Selective Catalytic Reduction (SCR) System and a Oxidation Catalyst Powering a 60 MW Nominally Rated Electrical Generator (Shared With C-7286-1)

SJVAPCD Permit No. Unit C-7286-3-0: 30 MW Nominally Rated Simple-Cycle Power Generating System #3 Consisting of a 311 MMBTU/HR Pratt & Whitney Model FT8-3 Swiftpac Natural Gas-Fired Combustion Turbine Generator Served by an Inlet Air Filtration and Cooling System, Water Injection, a Selective Catalytic Reduction (SCR) System and a Oxidation Catalyst Powering a 60 MW Nominally Rated Electrical Generator (Shared With C-7286-4)

SJVAPCD Permit No. Unit C-7286-4-0: 30 MW Nominally Rated Simple-Cycle Power Generating System #4 Consisting of a 311 MMBTU/HR Pratt & Whitney Model FT8-3 Swiftpac Natural Gas-Fired Combustion Turbine Generator Served by an Inlet Air Filtration and Cooling System, Water Injection, a Selective Catalytic Reduction (SCR) System and a Oxidation Catalyst Powering a 60 MW Nominally Rated Electrical Generator (Shared With C-7286-3)

AQ-1 Prior to initial operation of C-7286-1-0, C-7286-2-0, C-7286-3-0 or C-7286-4-0, the project owner shall provide NOx (as NO2) emission reduction credits

for the following quantities of emissions: 1st quarter – 8,968 lb; 2nd quarter – 8,968 lb; 3rd quarter – 15,692 lb; and 4th quarter - 11,208 lb. Offsets shall be provided at the appropriate distance ratio specified in Rule 2201. [District Rule 2201]

Verification: At least 60 days prior to commencing CTG first fire, the project owner shall surrender NOx ERC certificates in the amounts shown to the District and provide documentation of that surrender to the CPM.

AQ-2 Prior to initial operation of C-7286-1-0, C-7286-2-0, C-7286-3-0 or C-7286-4-0, the project owner shall provide PM10 emission reduction credits for the following quantities of emissions: 1st quarter – 2,102 lb; 2nd quarter – 2,103 lb; 3rd quarter – 3,679 lb; and 4th quarter – 2,628 lb. Offsets shall be provided at the appropriate distance ratio specified in Rule 2201. SOx ERC's may be used to offset PM10 increases at an interpollutant ratio of 1.867 lb-SOx : 1.0 lb-PM10. [District Rule 2201]

Verification: At least 60 days prior to commencing CTG first fire, the project owner shall surrender PM10 and/or SOx ERC certificates in the amounts shown or based on the SOx interpollutant ratio shown to the District and provide documentation of that surrender to the CPM.

AQ-3 ERC certificate numbers (or any splits from these certificates) S-2382-2 and S-2492-5 shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this determination of compliance (DOC) shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of the DOC. [District Rule 2201]

Verification: At least 60 days prior to commencing CTG first fire, the project owner shall surrender ERC certificates in the amounts shown to the District and provide documentation of that surrender to the CPM.

AQ-4 The project owner shall submit an application to comply with SJVAPCD District Rule 2520 - Federally Mandated Operating Permits within twelve months after commencing operation. [District Rule 2520]

Verification: The project owner shall submit a copy of their Title V – Federal Mandated Operating Permit Application to the CPM within 12 months of commencing operation.

AQ-5 The project owner shall submit an application to comply with SJVAPCD District Rule 2540 - Acid Rain Program. [District Rule 2540]

Verification: The project owner shall submit to the CPM copies of the Title IV permit at least fifteen (15) days prior to the initial firing of the CTG, and shall submit proof that necessary Title IV SO_2 emission allotments have been acquired as necessary for compliance with Title IV requirements annually in the first Quarterly Compliance Report (**AQ-SC10**) that is due after the annual SO_2 allotment due date.

AQ-6 District facilities C-3811 and C-7286 are the same stationary source for District permitting purposes. [District Rule 2201]

Verification: The project owner shall maintain operation and emissions data for facilities C-3811 and C-7286 available for inspection by representatives of the District, CARB and the Commission.

AQ-7 The owner/operator of the Starwood Power-Midway, LLC (Starwood Power) shall minimize the emissions from the gas turbines to the maximum extent possible during the commissioning period. Conditions **AQ-2** through **AQ-12** shall apply only during the commissioning period as defined below. Unless otherwise indicated, Conditions **AQ-13** through **AQ-80** shall apply after the commissioning period has ended. [District Rule 2201]

Verification: The project owner shall provide in the monthly commissioning status report (see the verification for Condition **AQ-7**) information regarding the types and effectiveness of methods used to minimize commissioning period emissions.

AQ-8 Commissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the Starwood Power construction contractor to insure safe and reliable steady state operation of the gas turbines and associated electrical delivery systems. [District Rule 2201]

Verification: The project owner shall provide written notification to the APCO and the CPM of the expected date of first turbine roll at least 15 days before the first turbine roll.

AQ-9 Commissioning period shall commence when all mechanical, electrical, and control systems are installed and individual system startup has been completed, or when a gas turbine is first fired, whichever occurs first. The commissioning period shall terminate when the plant has completed initial performance testing and is available for commercial operation. [District Rule 2201]

Verification: The project owner shall provide written notification to the APCO and the CPM of the expected date of first turbine roll at least 15 days before the first turbine roll. The project owner shall provide written notification to the APCO within 5 day after the turbines are available for commercial operation.

AQ-10 No more than one SwiftPac Unit (two paired turbines operating under units C-7286-1 and C-7286-2 or C-7286-3 and C-7286-4) shall be operated at any one time during the commissioning period. [District Rule 2201].

Verification: The project owner shall provide operating data to demonstrate compliance with this condition, and that information shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-14.**

AQ-11 At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of these units shall be tuned to minimize emissions. [District Rule 2201]

Verification: The project owner shall provide combustor tuning information to demonstrate compliance with this condition, and that information shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-14**.

AQ-12 At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system and the oxidation catalyst shall be installed, adjusted, and operated to minimize emissions from these units. [District Rule 2201]

Verification: The project owner shall provide emission abatement system information (such as dates of catalyst installation and ammonia grid initial operation) to demonstrate compliance with this condition, and that information shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-14**.

AQ-13 Coincident with the steady-state operation of the SCR system and the oxidation catalyst, NOx and CO emissions from these units shall comply with the limits specified in Condition **AQ-29**. [District Rule 2201]

Verification: The project owner shall provide NOx and CO emissions information for steady-state operations of the SCR system and oxidation catalyst to demonstrate compliance with this condition, and that information shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-14**.

AQ-14 The project owner shall submit a plan to the District at least four weeks prior to the first firing of these units, describing the procedures to be followed during the commissioning period. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the combustors, the installation and operation of the SCR systems and the oxidation catalyst, the installation, calibration, and testing of the NOx and CO continuous emissions monitors, and any activities requiring the firing of this unit without abatement by the SCR system or oxidation catalyst. [District Rule 2201]

Verification: The project owner shall submit a single commissioning plan to the District and the CPM at least four weeks prior to the first firing of the combustion turbine, describing in detail the procedures to be followed for the turbines. 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 the commissioning plan and demonstrates compliance with all other substantive requirements listed in Conditions **AQ-7** through **AQ-19**. The monthly commissioning status report shall be submitted to the CPM by the 10th of each month for the previous month, for all months with turbine commissioning activities following the turbine first fire date.

AQ-15 Emission rates from each CTG, during the commissioning period, shall not exceed any of the following limits: NOx (as NO_2) – 41.65 lb/hr; CO – 21.33

lb/hr; VOC (as methane) – 0.83 lb/hr; PM10 – 1.85 lb/hr; or SOx (as SO_2) – 0.89 lb/hr. [District Rule 2201]

Verification: The project owner shall provide CEM-derived emissions data for NOx and CO and shall provide calculated PM10 and VOC emissions from fuel consumption data and source test results to demonstrate compliance with this condition as part of the quarterly operation report (**AQ-SC10**)..

AQ-16 During the commissioning period, the project owner shall demonstrate compliance with the NOx and CO limits specified in Condition **AQ-15** through the use of properly operated and maintained continuous emissions monitors and recorders as specified in Conditions **AQ-53** and **AQ-54**. The monitored parameters for these units shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation). [District Rule 2201]

Verification: The project owner shall provide CEM data to demonstrate compliance with Conditions **AQ-13**, **AQ-15**, and **AQ-29** and that data shall be submitted to the CEC CPM as part of the monthly commissioning phase status report noted in the verification of Condition **AQ-14**.

AQ-17 The continuous monitors shall be installed, calibrated, and operational prior to the first firing of these units. After first firing, the detection range of the CEMS shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emission concentrations from each CTG and each Swiftpac unit. [District Rule 2201]

Verification: The project owner shall provide notification to the District and the CPM of the anticipated dates for installation, calibration and testing for the CEMS at least ten (10) days prior to installation. The project owner shall provide a report to the District and CPM for approval demonstrating compliance with CEMS calibration requirements prior to turbine first fire. The project owner shall provide ongoing calibration data in the monthly commissioning status reports (see verification of Condition **AQ-14**).

AQ-18 The total number of firing hours of each CTG without abatement of emissions by the SCR system and the oxidation catalyst shall not exceed 100 hours during the commissioning period. Such operation of each CTG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system and the oxidation catalyst in place. Upon completion of these activities, the project owner shall provide written notice to the District and the unused balance of the 100 firing hours without abatement shall expire. [District Rule 2201]

Verification: The project owner shall provide to the District and the CPM a reporting of the number of firing hours without abatement for the turbine in the monthly commissioning status reports (see verification of Condition **AQ-14**).

AQ-19 The total mass emissions of NOx, CO, VOC, PM10, and SOx that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits specified in Condition **AQ-40**. [District Rule 2201]

Verification: The project owner shall provide emissions data to demonstrate compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-20 A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve each Swiftpac unit. Exhaust ducting may be equipped (if required) with a fresh air inlet blower to be used to lower the exhaust temperature prior to inlet of the SCR system catalyst. The project owner shall submit SCR and oxidation catalyst design details to the District at least 30 days prior to commencement of construction. [District Rule 2201]

Verification: The project owner shall submit SCR and oxidation catalyst design details that demonstrate compliance with this condition to the APCO and the CPM 30 days prior to commencement of construction.

AQ-21 The project owner shall submit continuous emission monitor design, installation, and operational details to the District at least 30 days prior to commencement of construction. [District Rule 2201]

Verification: The project owner shall submit continuous emission monitor design, installation, and operational details to the APCO and the CPM 30 days prior to commencement of construction.

AQ-22 The project owner shall submit to the District before issuance of the Permit to Operate information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when no continuous emission monitoring data for NOx is available or when continuous emission monitoring system is not operating properly. [District Rule 4703]

Verification: The project owner shall compile the required NOx control system and emissions data and submit the information to the CPM and the APCO before issuance of the Permit to Operate.

AQ-23 All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]

Verification: The project owner shall submit maintenance records for all equipment to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC10**).

AQ-24 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

Verification: The project owner will document any complaints that it has received from the public in the Quarterly Operation Report (**AQ-SC10**). The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-25 No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Verification: The project owner shall document any known opacity violations in the Quarterly Operation Report (AQ-SC10). The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-26 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Verification: The project owner shall submit the results of the initial and annual source tests per Condition **AQ-47**.

AQ-27 Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exhibit opacity of 5% or greater, except for up to three minutes in any hour. [District Rules 2201 and 4101]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission to verify the installation and proper operation of the lube oil vent mist eliminators.

AQ-28 The CTGs shall be fried exclusively on PUC-regulated natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and 40 CFR 60.4330(a)(2)]

Verification: The project owner shall compile the required data on the sulfur content of the natural gas and submit the information to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC10**).

AQ-29 Emission rates from each CTG, except during startup and shutdown periods, shall not exceed any of the following limits: NOx (as NO_2) – 2.8 lb/hr and 2.5 ppmvd @ 15% O_2; CO – 4.19 lb/hr and 6.0 ppmvd @ 15% O_2; VOC (as methane) – 0.82 lb/hr and 2.0 ppmvd @ 15% O_2; PM10 – 1.85 lb/hr; or SOx (as SO_2) – 0.89 lb/hr. NOx (as NO_2) emission rates are one hour rolling averages. All other emission rates are three hour rolling averages. [District Rules 2201 and 4703 and 40 CFR 60.4320(a) & (b)]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-30 Combined emission rates from the two Swiftpac unit CTG's operating under permit units C-7286-1 and C-7286-2, and the two Swiftpac unit CTG's operating under permit units C-7286-3 and C-7286-4, except during startup and shutdown periods, shall not exceed any of the following Swiftpac two turbine limits: NOx (as NO_2) – 5.6 lb/hr and 2.5 ppmvd @ 15% O_2; CO – 8.38 lb/hr and 6.0 ppmvd @ 15% O_2; VOC (as methane) – 1.64 lb/hr and 2.0 ppmvd @ 15% O_2; PM10 – 3.70 lb/hr; or SOx (as SO_2) – 1.78 lb/hr. NOx (as NO_2) emission rates are one hour rolling averages. All other emission rates are three hour rolling averages. [District Rules 2201 and 4703 and 40 CFR 60.4320(a) & (b)]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-31 The ammonia (NH_3) emissions from each CTG shall not exceed either of the following limits: 4.24 lb/hr or 10 ppmvd @ 15% O_2 over a 24 hour rolling average. [District Rules 2201 and 4102]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this condition, using approved calculation methods (**AQ-33**), as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-32 During start-up of each CTG, exhaust emission rates for that CTG shall not exceed any of the following limits: NOx (as NO2) – 4.17 lb/hr; CO – 12.5 lb/hr; VOC (as methane) – 0.83 lb/hr; PM10 – 1.85 lb/hr; or SOx (as SO2) – 0.89 lb/hr, based on a one hour average. [District Rules 2201 and 4703]

Verification: The project owner shall submit to the CPM and APCO CEM-derived emissions data for NOx and CO (except when source testing is required for startups) and shall provide calculated PM10 and VOC emission from fuel consumption data and source test results to demonstrate compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-33 During shutdown of each CTG exhaust emission rates for that CTG shall not exceed any of the following limits: NOx (as NO2) – 1.50 lb/hr; CO – 21.33 lb/hr; VOC (as methane) – 0.83 lb/hr; PM10 – 1.85 lb/hr; or SOx (as SO2) – 0.89 lb/hr, based on a one hour average. [District Rules 2201 and 4703]

Verification: The project owner shall submit to the CPM and APCO CEM-derived emissions data for NOx and CO (except when source testing is required for shutdowns) and shall provide calculated PM10 and VOC emission from fuel consumption data and source test results to demonstrate compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-34 Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its SCR operating temperature and pressure, including the time required by the unit's emission control system to reach full operations. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rules 2201 and 4703]

Verification: The project owner shall submit to the CPM and APCO the CTG startup and shutdown event duration data demonstrating compliance with Condition **AQ-35** as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-35 The duration of each startup or shut down time shall not exceed two hours. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703]

Verification: The project owner shall submit to the CPM and APCO the CTG startup and shutdown event duration data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-36 The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703]

Verification: The project owner shall submit to the CPM and APCO the CTG startup and shutdown emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-37 Daily emissions from each CTG shall not exceed any of the following limits: NOx (as NO2) – 67.3 lb/day; CO – 126.0 lb/day; VOC – 19.7 lb/day; PM10 – 44.4 lb/day; or SOx (as SO2) – 21.4 lb/day. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-38 Combined daily emissions from the two Swiftpac unit CTG's operating under permit units C-7286-1 and C-7286-2, and the two Swiftpac unit CTG's operating under permit units C-7286-3 and C-7286 shall not exceed any of the following Swiftpac two turbine limits: NOx (as NO2) – 134.6 lb/day; CO – 252.0 lb/day; VOC – 39.4 lb/day; PM10 – 88.8 lb/day; or SOx (as SO2) – 42.8 lb/day. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-39 Quarterly hours of operation of each CTG shall not exceed any of the following limits: 1st Quarter – 800 hours, 2nd Quarter – 800 hours, 3rd Quarter – 1,400 hours, or 4th Quarter – 1,000 hours. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG operations data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-40 Annual emissions from each CTG, calculated on a twelve month rolling basis, shall not exceed any of the following limits: NOx (as NO2) – 11,209 lb/year; CO – 19,546 lb/year; VOC – 3,320 lb/year; PM10 – 7,400 lb/year; or SOx (as SO2) – 3,560 lb/year. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-41 Combined annual emissions from the two Swiftpac unit CTG's operating under permit units C-7286-1 and C-7286-2, and the two Swiftpac unit CTG's operating under permit units C-7286-3 and C-7286 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following Swiftpac two turbine limits: NOx (as NO2) – 22,416 lb/year; CO – 39,096 lb/year; VOC – 6,400 lb/year; PM10 – 14,800 lb/year; or SOx (as SO2) – 7,120 lb/year. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-42 Each one hour period shall commence on the hour. Each one hour period in a three hour rolling average will commence on the hour. The three hour average will be compiled from the three most recent one hour periods. Each one hour period in a twenty-four hour average for ammonia slip will commence on the hour. [District Rule 2201]

Verification: The project owner shall compile required emission compliance data using these standards and shall submit the information to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-43 Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve consecutive month rolling average emissions shall commence at the beginning of the first day of the month. The twelve consecutive month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201]

Verification: The project owner shall compile required emission compliance data using these standards and submit the information to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-44 Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the project owner shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the project owner may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the project owner shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rules 2201 and 4102]

Verification: The project owner shall submit for approval their proposed ammonia calculation procedure using one of the methods identified above to the CPM and the APCO for approval 15 days prior to turbine first fire, and then submit to the CPM and APCO for approval any requested modifications to the calculation procedure, not including revised source test correction factors, at least 15 days prior to the Quarterly Operation Report (**AQ-SC10**) where the modified calculation procedure is first used.

AQ-45 Source testing to measure startup and shutdown NOx, CO, and VOC mass emission rates shall be conducted for one of the gas turbines (C-7286-1, C-7286-2, C-7286-3, or C-7286-4) prior to the end of the commissioning period and at least once every seven years thereafter. CEM relative accuracy shall be determined during startup source testing in accordance with 40 CFR 60, Appendix B. If CEM data is not certifiable to determine compliance with NOx and CO startup emission limits, then source testing to measure startup NOx and CO mass emission rates shall be conducted at least once every 12 months. [District Rules 1081 and 2201]

Verification: The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing. Testing shall be conducted for the CTG upon initial operation, and at least once every seven years.

AQ-46 Initial source testing to determine compliance with the NOx, CO and VOC emission rates (lb/hr and ppmvd @ 15% O2) NH3 emission rate (ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted within 120 days after initial operation. Initial source testing shall be conducted while unit C-7286-1 is operating independently and while unit C-7286-2 is operating independently and while units C-7286-1 and C-7286-2 are operating simultaneously. [District Rules 1081, 2201 and 4703 and 40 CFR 60.4400(a)]

Verification: The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing.

AQ-47 Source testing to determine compliance with the NOx, CO, VOC and NH3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted at least once every 12 months. Source testing shall be conducted while units C-7286-1 and C-7286-2 and units C-7286-3 and C-7286-4 are operating simultaneously. If any of units C-7286-1, C-7286-2, C-7286-3, or C-7286-4 are operated independently for more than 400 hours during any given calendar year, source testing for those units shall also be conducted while they are operating independently. [District Rules 1081, 2201 and 4703 and 40 CFR 60.4400(a)]

Verification: The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing.

AQ-48 The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract or (ii) monitored within 60 days of the end of the commission period and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [40 CFR 60.4360, 60.4365(a) and 60.4370(c)]

Verification: The result of the natural gas fuel sulfur monitoring data and other fuel sulfur content source data shall be submitted to the CPM and the APCO in the Quarterly Operation Report (AQ-SC10).

AQ-49 The following test methods shall be used: NOx - EPA Method 7E or 20; CO - EPA Method 10 or 10B; VOC - EPA Method 18 or 25; PM10 - EPA Method 5/202 (front half and back half) or 201 and 202a; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20. EPA approved alternative test methods, as approved by the District, may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703 and 40 CFR 60.4400(1)(i)]

Verification: The project owner shall notify the CPM and the District 30 days prior to any compliance source test. The project owner shall provide a source test plan to the CPM and District for the CPM and District approval 15 days prior to testing.

AQ-50 Fuel sulfur content shall be monitored using one of the following methods: ASTM Methods D1072, D3246, D4084, D4468, D4810, D6228, D6667 or Gas Processors Association Standard 2377. [40 CFR 60.4415(a)(1)(i)]

Verification: The fuel sulfur content data shall be submitted to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC10**).

AQ-51 The exhaust stacks shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [District Rule 1081]

Verification: Prior to construction of the turbine stacks the project owner shall provide to the CPM for approval detailed plan drawings of the turbine stacks that show the sampling ports and demonstrate compliance with the requirements of this condition. The project owner shall make the site available for inspection of the turbine stacks by representatives of the District, CARB and the Commission.

AQ-52 Compliance demonstration (source testing) shall be District witnessed, or authorized and samples shall be collected by a California Air Resources Board certified testing laboratory. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081 and 40 CFR 60.4375(b)]

Verification: The project owner shall notify the CPM and the District 30 days prior to any compliance source test. The project owner shall provide a source test plan to the CPM and District for approval 15 days prior to testing. The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing.

AQ-53 Each CTG shall be equipped with a continuous monitoring system to measure and record fuel consumption. [District Rules 2201 and 4703]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission to verify the continuous monitoring system is properly installed and operational.

AQ-54 The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx, CO and O2 concentrations. Continuous emissions monitor(s) shall be capable of monitoring emissions during normal operating conditions, and during startups and shutdowns, provided the CEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of CEMS cannot be demonstrated during startup conditions, CEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this document. [District Rules 1080 and 4703 and 40 CFR 60.4335(b)(1)]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission to verify the continuous monitoring system is properly installed and operational.

AQ-55 The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080 and 40 CFR 60.4345(b)]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-56 The NOx, CO and O2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specification 2 (PS 2), or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080 and 40 CFR 60.4345(a)]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-57 Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and compliance source testing are both performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO the CEMS audits demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-58 The owner/operator shall perform a relative accuracy test audit (RATA) for the NOx, CO and O2 CEMS as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The project owner shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-59 Results of the CEM system shall be averaged over a one hour period for NOx emissions and a three hour period for CO emissions using consecutive 15-minute sampling periods in accordance with all applicable requirements of CFR 60.13. [District Rule 4703 and 40 CFR 60.13]

Verification: The project owner shall submit to the CPM and APCO emission data required in the Quarterly Operation Reports (**AQ-SC10**) that follows the definitions of this condition.

AQ-60 Excess emissions shall be defined as any operating hour in which the 4-hour or 30-day rolling average NOx concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NOx or O2 (or both). [40 CFR 60.4380(b)(1)]

Verification: The project owner shall submit to the CPM and APCO emission data and monitor downtime data in the Quarterly Operation Reports (**AQ-SC10**) that follows the definitions of this condition.

AQ-61 Results of continuous emissions monitoring shall be reduced according to the procedures established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO emission data required in the Quarterly Operation Reports (**AQ-SC10**) that follows the definitions of this condition.

AQ-62 The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]

Verification: The project owner shall provide a Continuous Emission Monitoring System (CEMS) protocol for approval by the CPM and the APCO at least 60 days prior to installation of the CEMS. The project owner shall make the site available for inspection of the CEMS by representatives of the District, CARB and the Commission.

AQ-63 Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated

data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

Verification: The project owner shall provide required non-polled CEM data to the District by a District-approved alternative method.

AQ-64 The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary shall be in the form and the manner prescribed by the APCO. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO CEMS summary data upon written notice from the APCO.

AQ-65 The owner or operator shall submit a written report of CEM operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess NOx emissions, nature and the cause of excess (if known), corrective actions taken and preventative measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080 and 40 CFR 60.4375(a) and 60.4395]

Verification: The project owner shall submit to the CPM and APCO the CEMS audits demonstrating compliance with this condition as part of the Quarterly Operation Report required by this condition and condition **AQ-SC10**.

AQ-66 APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the required monitoring devices to ensure that such devices are functioning properly. [District Rule 1080]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission to verify monitoring devices are functioning properly.

AQ-67 The project owner shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-68 The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the

initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-69 The project owner shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 1080, 2201, and 4703 and 40 CFR 60.8(d)]

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB and the Commission.

AQ-70 The project owner shall maintain the following records: hours of operation, fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, calculated ammonia slip, and calculated NOx mass emission rates (lb/hr, lb/qtr and lb/twelve month rolling period). [District Rules 2201 and 4703]

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB and the Commission.

AQ-71 All records shall be maintained and retained on-site for a period of at least five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703]

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB and the Commission.

AQ-72 Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 or Rule 8011. [District Rules 8011 and 8021]

Verification: The project owner shall document compliance with Rule 8021 in the Monthly Compliance Report (**AQ-SC3**), and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-73 An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. [District Rules 8011 and 8021]

Verification: The project owner shall submit a Dust Control Plan to the CPM and APCO at least 30 days prior to the start of any construction activities to show compliance with this condition and Condition **AQ-SC2**.

AQ-74 An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 (8/19/04) or Rule 8011(8/19/04). [District Rules 8011 and 8021]

Verification: The project owner shall document compliance with Rule 8041 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-75 Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 or Rule 8011. [District Rules 8011 and 8051]

Verification: The project owner shall document compliance with Rule 8051 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-76 Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 or Rule 8011. [District Rules 8011 and 8061]

Verification: The project owner shall document compliance with Rule 8061 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-77 Water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011. [District Rule 8011 and 8071]

Verification: The project owner shall document compliance with Rule 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-78 Where dusting materials are allowed to accumulate on paved surfaces, the accumulation shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071]

Verification: The project owner shall document compliance with Rule 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-79 On each day that 50 or more Vehicle Daily Trips or 25 or more Vehicle Daily Trips with 3 axles or more will occur on an unpaved vehicle/equipment traffic area, the project owner shall apply water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other

District-approved control measure as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011. [District Rule 8011 and 8071]

Verification: The project owner shall document compliance with Rule 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-80 Whenever any portion of the site becomes inactive, the project owner shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8011 and 8071]

Verification: The project owner shall document compliance with Rules 8011 and 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

AQ-81 Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8011, 8031, and 8071]

Verification: The project owner shall document compliance with Regulation VIII rules in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC10**).

LAWS, ORDINANCES, REGULATIONS & STANDARDS

AIR QUALITY

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Clean Air Act §111: 42 USC §7411; 40 CFR Part 60, subparts Db and GG	Establishes standards of performance to limit the emission of criteria pollutants for which the EPA has established national ambient air quality standards (NAAWS).
Clean Air Act §112 42 USC §7412; 40 CFR Part 63	Establishes national emission standards to limit hazardous air pollutant (HAP) emissions from existing major sources of HAP emissions in specific source categories.
Clean Air Act §160-169A 42 USC §7470-7491; 40 CFR Parts 51 & 53	Requires pre-construction review and permitting of new or modified major stationary sources of air pollution to prevent significant deterioration of ambient air quality. PSD applies only to pollutants for which ambient concentrations do not exceed the corresponding NAAQS (i.e., attainment pollutants).
Clean Air Act §171-193 42 USC 501 et seq.; 40 CFR Parts 51 & 52	Requires pre-construction review and permitting of new or modified major stationary sources of air pollution to allow industrial growth without interfering with the attainment of ambient quality standards.
Clean Air Act §401 42 USC 654 et seq.; 40 CFR Part 72	Requires monitoring and reduction of emissions of acidic compounds and their precursors. The principal source of these compounds is the combustion of fossil fuels. Therefore, Title IV established national standards to limit SOx and NOx emissions from electrical power generating facilities.
Clean Air Act §501 (Title V) 42 USC §7661; 40 CFR Part 70	Requires the issuance of operating permits that identify all applicable federal performance, operating, monitoring, record-keeping and reporting requirements. Title V applies to major facilities, acid rain facilities, subject solid waste incinerator facilities, and any facility listed by EPA as requiring a Title V permit.
Clean Air Act 501 (Title V) 42 USC §7414; 40 CFR Part 64	Requires facilities to monitor the operation and maintenance of emissions control systems and report any control system malfunctions to the appropriate regulatory agency.

Emergency Planning and Community Right-to-Know Act § 313 (EPCRA)	EPCRA requires certain facilities and establishments to report toxic releases to the environment if they: Manufacture more than 25,000 lbs. of a listed chemical per year; Process more than 25,000 lbs. of a listed chemical per year; or Otherwise use more than 10,000 lbs. of a listed chemical per year.
STATE	
Health & Safety Code (H&SC) §39500 et seq.	Required by the Clean Air Act, the State Implementation Plan (SIP) must demonstrate the means by which all areas of the state will attain NAAQS within the federally mandated deadlines.
H&SC §40910-40930	The California Clean Air Act requires local Air Pollution Control District's (APCD) to attain and maintain both national and state AAQS at the earliest practicable date.
H&SC §39650-39675	The Toxic Air Contaminant Identification and Control Act created a two-step process to identify toxic air contaminants (TAC) and control their emissions. The ARB identifies and prioritizes the pollutants to be considered for identification as Tacos. The ARB then assesses the potential for human exposure to a substance while the Office of Environmental Health Hazard Assessment evaluates the corresponding health effects.
California Public Resources Code §25523(a); 20 CCR §§1752, 1752.5, 2300-2309, and Div. 2 Chap. 5, Art.1, Appendix B, Part(k)	Establishes requirements in the Sec's decision making process on an application for certification that assures protection of environmental quality.
LOCAL	
SJVAPCD Regulation I – General Provisions	This regulation sets forth requirements and standards for stack monitoring, source sampling, and breakdown events.
SJVAPCD Regulation II – Permits	This regulation sets forth the regulatory framework of the application for and issuance of construction and operation permits for new, altered and existing equipment. Included in these requirements are the federally delegated requirements for New Source Review, Title V Permits, and the Acid Rain Program.

SJVAPCD Regulation IV – Prohibitions	This regulation sets forth the restrictions for visible emissions, odor nuisance, various air emissions, and fuel contaminants. Regulation IV 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 stationary gas turbines. These subparts establish limits of NO_2 and SO_2 emissions from the facility as well as monitoring and test method requirements. This regulation also specifies additional performance standards for stationary gas turbines.
SJVAPCD Regulation VIII – Fugitive PM10 Prohibitions	This regulation sets forth the requirements and performance standards for the control of emissions from fugitive dust causing activities.

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BIOLOGY – Summary of Findings and Conditions

<table>
<tr><th></th><th>POWER PLANT SITE</th><th>CUMULATIVE IMPACTS</th><th>LORS COMPLIANCE</th></tr>
<tr><td rowspan="2">Protected Species Impact</td><td>MITIGATION</td><td>None</td><td>YES</td></tr>
<tr><td colspan="3">The SPP site (5.6 acres) is entirely located within an area that is currently used as a storage yard by CalPeak Power. The adjacent land uses support electricity generation and agricultural production. The site is nearly devoid of vegetation. Of the special-status wildlife species identified in the vicinity of the project area, only San Joaquin kit fox is known to use such disturbed habitats and thus have potential to occur in the project area. Special-status plants are not expected to occur in the project area.

MITIGATION:
☑ The Project Owner shall provide compensatory kit fox habitat. Condition BIO-12</td></tr>
<tr><td rowspan="2">Long-term Habitat Loss/ Degradation</td><td>MITIGATION</td><td>None</td><td>YES</td></tr>
<tr><td colspan="3">The site is within the eastern boundary of the northern core San Joaquin kit fox population. Loss of kit fox habitat requires habitat compensation.

MITIGATION:
☑ The Project Owner shall provide compensatory kit fox habitat. Condition BIO-12</td></tr>
</table>

Short-term Construction Disturbance	**MITIGATION**	**None**	**YES**

Construction will disturb the habitat of the San Joaquin kit fox, requiring habitat compensation. No sensitive species were found on the proposed project site that would be impacted by construction lighting or construction noise.

MITIGATION:

- ☑ The Project Owner will designate a biological resource specialist who will monitor ground disturbance, grading, construction and operation and has the authority to half construction in areas of potential impact to sensitive biological species. Conditions: **BIO-1** through **BIO-4**
- ☑ The Project Owner shall implement a worker awareness program to inform employees about sensitive biological resources associated with the project. Condition **BIO-5**
- ☑ The Project Owner shall prepare a Biological Resources Mitigation Implementation and Monitoring Plan identifying measures to avoid impacts to sensitive biological resources. Condition: **BIO-6**
- ☑ The Project Owner shall implement measures to avoid harm to biological resources, particularly the kit fox. Conditions **BIO-8 & BIO-9**
- ☑ The Project Owner shall provide compensatory kit fox habitat. Condition **BIO-12**

Operation Impact	MITIGATION	None	YES

No sensitive species were found on the proposed project site that would be adversely impacted by additional lighting needed for worker safety or project noise.

Bird collisions with 50-foot tall exhaust stacks or 65-foot tall transmission towers will be unlikely. Overhead transmission lines can increase the potential for bird electrocutions. Electrocutions can occur when a bird's wings simultaneously contact two conductors of different phases. The transmission lines will use a "raptor-friendly" design and thus will not pose a significant collision or electrocution threat to bird populations.

MITIGATION:

- ☑ The Project Owner will use a "raptor-friendly" transmission line construction design with conductor wire spacing greater than the wingspans of large birds to help prevent electrocution. . Condition: **BIO-8.**

The project's 25,000 square-foot wastewater evaporation pond could adversely affect waterfowl or shorebirds unless water quality and wildlife use are monitored.

MITIGATION:

- ☑ The Project Owner shall design and monitor the evaporation pond for water quality and wildlife usage. Condition **BIO-11**

BIOLOGY - GENERAL

The SPP site is located in the western portion of the San Joaquin Valley in an unincorporated area of western Fresno County, approximately 50 miles west of the City of Fresno and two miles east of Interstate 5. Historically, this portion of the San Joaquin Valley contained many natural habitats that supported a variety of native plant and animal species. However, these natural environments have been largely converted to agricultural and urban land uses. The nearest natural areas, where the majority of the special-status species near the proposed project area have been recorded, are located to the south and west of the project area and include Tumey Hills, Panoche Hills, Ciervo Hills, and Monocline Ridge. The nearest natural area is Tumey Hills, located approximately 4.4 miles west of the SPP site. (FSA 4.2-2)

Power Plant Site

Near the proposed project, agricultural production is the dominant land use, with other mixed uses including urban areas, industrial, and commercial facilities. The SPP site is bordered to the southwest by the existing CalPeak Panoche peaking power plant and to the southeast by the existing Wellhead peaking power plant. The existing PG&E Panoche Substation is also located adjacent to the CalPeak Panoche facility. Another power plant, the Panoche Energy Center, at a 12.8-acre site approximately 0.2 miles east of the SPP site, and is currently occupied by an active pomegranate orchard. The SPP site (5.6 acres) is entirely located within an area that is currently used as a storage yard by CalPeak Power. The adjacent land uses support electricity generation and agricultural production. (FSA 4.2-3)

Protected Species Impact

Special-status plants are not expected to occur in the project area. Twelve special-status plants are known to occur within the vicinity of the project, but none is known from within 1 mile, and habitat suitability is generally poor at the SPP site. Therefore, significant adverse impacts to special-status plant species are not expected to occur from construction of the SPP. (FSA 4.2-4)

The SPP site is nearly devoid of vegetation and is currently used as an equipment storage yard. Of the special-status wildlife species identified in the vicinity of the project area, only San Joaquin kit fox is known to use such disturbed habitats and thus have potential to occur in the project area. (FSA 4.2-11)

Critical habitat is a formal designation under the federal Endangered Species Act where specific areas are designated as essential to the conservation and recovery of a federally listed species. These areas may require special management consideration or protection. Critical habitat for special-status wildlife does not occur in the project area.

The burrowing owl, a California species of special concern, is a yearlong resident of open, dry grassland, prairie, or desert floor habitats and is thought to be semi-colonial. Burrowing owls may be diurnal, crepuscular, or nocturnal, although hunting typically occurs at night. The burrowing owl is known to occur in urban, disturbed areas and at

the edges of agricultural fields and typically hunts from a perch or hops after prey on the ground. It typically nests in the vacant burrow of a ground squirrel or other small mammal although it is also known to occupy manmade structures including culverts, pipes, nest boxes, and piles of construction debris. The equipment that is currently stored on the SPP site may provide artificial nesting habitat for the burrowing owl. However, it is unlikely that burrowing owl would occur due to the high frequency and intensity of disturbance at the proposed site. (FSA 4.2-11)

The San Joaquin kit fox, a federally endangered and California threatened species, uses agricultural lands within the San Joaquin Valley. The SPP site is within the eastern boundary of the northern core population, as identified by US Fish and Wildlife Service (USFWS). Additionally, the site is located in an area that has been identified by USFWS to be preserved for kit fox habitat connectivity. The nearest known occurrence of record is approximately 3 miles west and was documented in 1999. Since kit foxes can travel up to 10 miles in one night during the breeding season and there is contiguous nonirrigated agricultural habitat between the known core population and the SPP site, kit foxes may use the SPP site for foraging, cover, or as a movement corridor. USFWS categorizes suitable kit fox habitat according to three levels of quality to determine habitat compensation ratios: 1) natural, 2) grassland, 3) agricultural/ruderal. The agricultural/ruderal classification (lowest habitat quality) applies to the SPP site. The California Department of Fish and Game (CDFG) has determined that the SPP site is not suitable for denning; however, there is the potential for individuals to be adversely impacted by project construction and operation as a result of habitat loss. (FSA 4.2-11)

Loss of kit fox habitat would be considered significant without mitigation and requires consultation with the USFWS and CDFG to develop mitigation measures and provisions for incidental take. USFWS has identified a consultation process by which the Applicant and USFWS enter into a Memorandum of Understanding, thereby providing a federal nexus for the proposed project and triggering section 7 consultation. Through this process, the Applicant prepared a biological assessment, and the USFWS then issued a biological opinion on August 21, 2007, which specifies actions that are required to avoid, minimize, or compensate for any potentially adverse impacts to kit foxes and their habitat. Habitat compensation will also be required, and USFWS has identified the Krayenhagen Hills Conservation Bank as a preferred location to purchase mitigation credits at a ratio of 1.1:1 for permanent disturbance and 0.3:1 for temporary disturbance. (FSA 4.2-11)

MITIGATION:

- ☑ The Project Owner shall provide compensatory kit fox habitat. Condition: **AQ-13**.

Long-Term Habitat Loss/Degradation

The SPP site is within the eastern boundary of the northern core San Joaquin kit fox population, as identified by USFWS. Additionally, the site is located in an area that has been identified by USFWS to be preserved for kit fox habitat connectivity. Loss of kit fox habitat requires habitat compensation. The USFWS has identified the Krayenhagen

Hills Conservation Bank as a preferred location to purchase mitigation credits at a ratio of 1.1:1 for permanent disturbance. (FSA 4.2-12)

MITIGATION:

- ☑ The Project Owner shall provide compensatory kit fox habitat. Condition **BIO-12**

Short-term Construction Disturbance

As stated above, special-status plants are not expected in the project area. Of the special-status wildlife species identified in the project area, only the San Joaquin kit fox is known to use such disturbed habitats and thus have the potential to occur in the project area. The CDFG has determined that the kit fox may be impacted by construction and operation of the project, requiring habitat compensation. Habitat compensation will also be required, and USFWS has identified the Krayenhagen Hills Conservation Bank as a preferred location to purchase mitigation credits at a ratio of 0.3:1 for temporary disturbance. (FSA 4.2-11, 12)

The burrowing owl, a State species of special concern, is known to occur in urban, disturbed areas and at the edge of agricultural fields where it hunts prey. However, it is unlikely that the burrowing owl would use the SPP site for nesting due to the high frequency and intensity of disturbance at the proposed site. (FSA 4.2-11)

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. The existing Wellhead and CalPeak Panoche plants, PG&E Substation, traffic on West Panoche Road, and intensive agricultural operations in the immediate vicinity of the SPP site create elevated ambient noise levels to which local wildlife species have acclimated. (FSA 4.2-12)

Since night construction would not occur, excess lighting would not significantly impact wildlife during construction. The Applicant would direct lighting downward and toward the interior of the plant to avoid excessive glare. Existing energy facilities provide an elevated ambient level of lighting to which local wildlife, including nocturnal species, have acclimated. (FSA 4.2-12)

MITIGATION:

- ☑ The Project Owner will designate a biological resource specialist who will monitor ground disturbance, grading, construction and operation and has the authority to half construction in areas of potential impact to sensitive biological species. Conditions: **BIO-1** through **BIO-4**
- ☑ The Project Owner shall implement a worker awareness program to inform employees about sensitive biological resources associated with the project. Condition **BIO-5**
- ☑ The Project Owner shall prepare a Biological Resources Mitigation Implementation and Monitoring Plan identifying measures to avoid impacts to sensitive biological resources. Condition: **BIO-6**

- ☑ The Project Owner shall implement measures to avoid harm to biological resources, particularly the kit fox. Conditions **BIO-8 & BIO-9**
- ☑ The Project Owner shall design and monitor the evaporation pond for water quality and wildlife usage. Condition **BIO-11**
- ☑ The Project Owner shall provide compensatory kit fox habitat. Condition **BIO-12**

Operation Impact

The project includes two 50-foot exhaust stacks and one 65-foot transmission tower, including a 15-foot lightning mast, with a 300-foot transmission line to connect to the existing Panoche Substation. Thus, potential impacts resulting from operation of the Starwood Power Project include avian collision with and/or electrocution by the electric interconnection facilities. Additionally, potential impacts could arise from disturbance to wildlife due to increased noise and lighting. Lastly, the project's wastewater evaporation pond could potentially impact waterfowl and shorebirds.

Bird collisions are more probable near wetlands, within valleys that are bisected by power lines, and within narrow passes where power lines run perpendicular to flight paths. There are no such features in the vicinity of the project area. Therefore, the SPP transmission structures would not pose a significant collision threat to resident or migratory bird populations. (FSA 4.2-13)

Red-tailed hawks and other large aerial perching birds, including those offered state and/or federal protection, are susceptible to transmission-line electrocution. Since raptors and other large perching birds often perch on tall structures that offer views of potential prey, the design characteristics of transmission towers and poles are a major factor in raptor electrocutions. Electrocution occurs most frequently when a bird attempts to perch on a transmission tower or pole with insufficient clearance between energized conductors. Raptor species that use the towers for nesting could be electrocuted while landing.

Potential impacts to wildlife resulting from electrocution by transmission lines may be mitigated by incorporating the construction design recommendations provided in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006*. (FSA 4.2-13)

MITIGATION:

- ☑ The Project Owner shall implement measures to use a "raptor-friendly" transmission line construction design with conductor wire spacing greater than the wingspans of large birds to help prevent electrocution. . Condition: **BIO-8**

Wildlife species near the proposed project are accustomed to elevated ambient noise levels as a result of the existing Wellhead and CalPeak Panoche plants, the PG&E Panoche Substation, traffic on West Panoche Road, and intensive agricultural

operations. Although SPP operation would create additional noise, significant impacts to biological resources are not expected. (FSA 4.2-14)

Existing energy facilities adjacent to the site provide an elevated ambient level of lighting to which local wildlife, including nocturnal species, have acclimated. The Applicant would direct lighting downward to avoid excessive glare and backscatter. Although SPP operation of would create additional light, significant impacts to biological resources are not expected. (FSA 4.2-14)

Waterfowl and shorebirds could seasonally inhabit or use the evaporation pond for resting or foraging. The proposed 25,000-square-foot evaporation pond could attract birds and other wildlife. If water for the project would be extracted from the existing CalPeak Panoche Well, the wastewater directed to the evaporation pond would contain some contaminants, including selenium and salt. Evaporation would increase concentrations of selenium and salt in the evaporation pond, which could lead to accumulation of selenium in pond invertebrates and in wildlife consuming those invertebrates. Water birds could be adversely impacted from exposure and bioaccumulation of selenium in their food chain. To prevent such adverse impacts to waterbirds, CDFG has recommended that water should be kept at a depth less than 2 feet and pond slopes should be as steep as possible. Additionally; CalPeak Panoche Well water should be tested for selenium, mercury, uranium, boron, arsenic and vanadium prior to use by the project and after discharge into the pond. Implementation of these measures is expected to mitigate adverse impacts to wildlife from possible exposure to toxins in the evaporation pond. (FSA 4.2-10)

MITIGATION:

- ☑ The Project Owner shall design and monitor the evaporation pond for water quality and wildlife usage. Condition **BIO-11**

Cumulative Impacts

Cumulative impacts are those that result from the incremental impacts of an action added to other past, present, and reasonably foreseeable future action, regardless of who is responsible for such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (Cal. Code Regs., tit. 14, section 15130.)

Cumulative impacts are those that result from the incremental impacts of a proposed action considered with other past, present, and reasonable foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time.

The proposed project would permanently remove approximately 5.6 acres of San Joaquin kit fox habitat, requiring consultation with USFWS. In addition to the SPP, there are other projects proposed in western Fresno County that require consultation with USFWS for impacts to kit foxes, including habitat compensation: Panoche Energy Center, LLC has submitted an application to the Energy Commission (06-AFC-5) for the

Panoche Energy Center, which is a 400-MW peaking facility located approximately 0.2 mile west of the site.

The US Department of Justice, Federal Bureau of Prisons, is expected to complete construction of a medium-security federal correctional institution requiring approximately 960 acres of primarily agricultural land near the City of Mendota, approximately 10 miles east of the SPP site. The biological opinion for this project was finalized in March 2004.

Construction and operation of these projects would adversely affect kit foxes due to habitat destruction and fragmentation. However, consultation with USFWS and habitat compensation at a USFWS-approved mitigation bank are intended to address long-term impacts to this species, and compliance with the requirements of section 7 of the federal Endangered Species Act will mitigate cumulative impacts to less than significant levels. (FSA 4.2-14)

Finding

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

CONDITIONS OF CERTIFICATION

Designated Biologist Selection

BIO-1 The project owner shall assign a Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least 3 references and contact information, to the Energy Commission compliance project manager (CPM) for approval.

The Designated Biologist must have at least the following minimum qualifications:

1. a Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field; and
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 Designated Biologist or alternate Designated Biologist has the appropriate training and background to effectively implement the Conditions of Certification.

Verification: The project owner shall submit the specified information at least 90 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 ten 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. The Designated Biologist shall:

1. advise the project owner's construction and operation managers on the implementation of the biological resources Conditions of Certification;
2. consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), to be submitted by the project owner;
3. be available to supervise, conduct, and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;
4. clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (i.e., parking lots) for animals in harm’s way;
6. notify the project owner and the CPM of any noncompliance with any biological resources condition of certification;
7. respond directly to inquiries of the CPM regarding biological resource issues;
8. maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the monthly compliance report and the annual report; and
9. train the biological monitors as appropriate, and ensure their familiarity with the BRMIMP, worker environmental awareness program (WEAP) training, and all permits.

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. During project operation, the Designated Biologist shall submit record summaries in the annual compliance report unless their duties are ceased as approved by the CPM.

Biological Monitor Qualifications

BIO-3 The project owner's CPM-approved Designated Biologist shall submit the resume, at least 3 references, and contact information of 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 biological resource tasks.

Biological monitor(s) training by the Designated Biologist shall include familiarity with the Conditions of Certification and the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), Worker Environmental Awareness Program (WEAP), and all permits.

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 (or related facilities) 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 and operation manager shall act on the advice of the Designated Biologist and biological monitor(s) to ensure conformance with the biological resources Conditions of Certification.

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

The Designated Biologist shall:

1. require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. inform the project owner and the construction and 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 will be instituted, as a result of the work stoppage.

If the Designated Biologist is unavailable for direct consultation, the biological monitor shall act on behalf of the Designated Biologist.

Verification: The project owner shall ensure that the Designated Biologist or biological monitor notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any noncompliance or 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 will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program

BIO-5 The project owner shall develop and implement a CPM-approved worker environmental awareness program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure, are informed about sensitive biological resources associated with the project.

The WEAP must:

- be developed by or in consultation with the Designated Biologist and consist of an onsite or training center presentation in which supporting written material and electronic media are made available to all participants;
- discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
- present the reasons for protecting these resources;
- present the meaning of various temporary and permanent habitat protection measures;
- identify whom to contact if there are further comments and questions about the material discussed in the program; and
- include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 60 days prior to the start of any site (or related facilities) mobilization, the project owner shall provide to the CPM two (2) copies of the proposed WEAP and all supporting written materials and electronic media prepared or reviewed by the designated biologist and a resume of the person(s) administering the program.

The project owner shall provide in the monthly compliance report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site and related facilities mobilization submit two copies of the CPM approved materials.

The signed training acknowledgement forms from construction shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel shall be kept on file for six months following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan

BIO-6 The project owner shall submit two copies of the proposed biological resources mitigation implementation and monitoring plan (BRMIMP) to the CPM (for review and approval) and to CDFG and USFWS (for review and comment) and shall implement the measures identified in the approved BRMIMP.

The BRMIMP shall be prepared in consultation with the designated biologist and shall identify:

1. all biological resource mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. all biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts;
3. all biological resource mitigation, monitoring, and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
4. all biological resources mitigation, monitoring, and compliance measures required in local agency permits, such as site grading and landscaping requirements;
5. all sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure;
6. all required mitigation measures for each sensitive biological resource;
7. required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources;
8. a detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
9. all locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;
10. aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities — one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Include planned timing of aerial photography and a description of why times were chosen;

11. duration for each type of monitoring and a description of monitoring methods and frequency;
12. performance standards to be used to help decide if and when proposed mitigation is or is not successful;
13. all performance standards and remedial measures to be implemented if performance standards are not met;
14. a preliminary discussion of biological resources-related facility closure measures;
15. a restoration and revegetation plan;
16. a process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
17. a copy of all biological resources-related permits obtained.

Verification: The project owner shall provide the specified document at least 60 days prior to start of any site (or related facilities) mobilization.

The CPM, in consultation with the CDFG, the USFWS, and any other appropriate agencies, will determine the BRMIMP's acceptability within 45 days of receipt. If there are any permits that have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM, the CDFG, and USFWS within five (5) days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition within 10 days of their receipt by the project owner. Ten days prior to site and related facilities mobilization, the revised BRMIMP shall be resubmitted to the CPM.

The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval.
Any changes to the approved BRMIMP must also be approved by the CPM in consultation with CDFG, the USFWS, and appropriate agencies to ensure no conflicts exist.

Implementation of BRMIMP measures will be reported in the monthly compliance reports by the Designated Biologist (i.e., survey results, construction activities that were monitored, species observed). Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

Closure Plan Measures
BIO-7 Deleted (Refer to General Conditions)

Impact Avoidance Mitigation Features

BIO-8 Any time the project owner modifies or finalizes the project design, it shall incorporate all feasible measures that avoid or minimize impacts to the local biological resources. The project owner shall:

1. design, install, and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;
2. design, install, and maintain transmission lines and all electrical components in accordance with the *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) to reduce the likelihood of electrocutions of large birds;
3. eliminate any California exotic pest plants of concern List A species as defined by the California Exotic Pest Plant Council from landscaping plans;
4. prescribe a road sealant that is nontoxic to wildlife and plants; and
5. design, install, and maintain facility lighting to prevent side casting of light toward wildlife habitat.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures shall be reported in the monthly compliance reports by the Designated Biologist. Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

Mitigation Management to Avoid Harassment or Harm

BIO-9 The project owner shall implement the following measures to manage its construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources. To minimize and avoid impacts to San Joaquin kit foxes, the following measures shall be implemented. These were extracted directly from the federal Biological Opinion, issued August 27, 2007 (USFWS 2007b):

1. Impacts to kit fox habitat will be offset through a contribution to a local conservation bank. Pursuant to discussions with Service, total compensation has been determined based on the area permanently impacted (5.6), SPM will purchase 6 conservation credits. This contribution will occur at Kreyenhagen Hills conservation bank. This contribution will occur at Kreyenhagen Hills conservation bank, or by fee title acquisition or purchase of a conservation easement on a service-approved parcel, following all the requirements in Selected Review Criteria for Conservation Banks and Section 7 Offsite Compensation April 11, 2006 (enclosed).
2. Project-related vehicles shall observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is

particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.

3. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 13 of this section must be followed.

4. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. if necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

5. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site.

6. No firearms shall be allowed on the project site.

7. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets will be permitted on project sites.

8. Use of rodenticides and herbicides in project areas will be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service, if rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

9. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative’s name and telephone number shall be provided to the Service.

10. An employee education program shall be conducted. The program will consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program will include the following: a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the above-mentioned people and anyone else who may enter the project site. The program will be conducted in languages other than English, as appropriate.

11. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. will be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to “temporary” disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

12. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.

13. Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG and the Service immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

14. The Sacramento Fish and Wildlife Office and CDFG will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFG contact is Mr. Ron Schlorff at Street, Sacramento, California 95814, (916) 654-4262.

15. Limits of grading and construction activities should be clearly delineated so that no vegetation outside the delineated grading limits would be

disturbed by construction personnel or equipment. Project personnel will drive only on existing roads outside of construction limits.

16. SPM will implement the Best Management Practices identified in the project specific Storm Water Pollution Prevention Plan (SWPPP).

17. In order to comply with the Migratory Bird Treaty Act and relevant sections of the CDFG Code (e.g., 3503, 3503.4, 3504, 3505, et seq.), any vegetation clearing would take place outside of the typical avian nesting season (i.e., February 1st — August 3 1st), to the maximum extent practical. If this is not possible, prior to ground-disturbing activities, construction, and so forth within the study area, a qualified biologist will conduct and submit a migratory nesting bird and raptor survey report. A qualified biologist is an individual with sufficient education and field experience in local California ecology and biology to adequately identify local plant and wildlife species. The survey shall occur not more than 72 hours prior to initiation of Project activities and any occupied passerines and/or raptor nests occurring within or adjacent to the study area will be delineated. To the maximum extent practicable, a minimum buffer zone from occupied nests will be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.

18. SPM will retain the services of a Biological Monitor who will be responsible for overseeing project environmental protection measures. All encounters with listed species will be reported to the Biological Monitor, who will record the following information: species name; location (narrative and maps) and dates of observations; general condition and health, including injuries and state of healing; diagnostic markings, including identification numbers or markers; and locations moved from and to (if appropriate).

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the monthly compliance reports by the Designated Biologist. Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

Evaporation Pond Design

BIO-10 The project owner shall submit copies of technical drawings for the design of the evaporation pond. The project owner shall design and build the pond with slopes as steep as practicable and of sufficient size to keep water to a depth of less than 2 feet.

Verification: No less than thirty (30) days prior to the start of evaporation pond construction, the project owner shall provide copies of the evaporation pond design drawings to the CPM for review and approval, and CDFG for review and comment.

Evaporation Pond Monitoring

BIO-11 Following the start of operations, the evaporation pond shall be monitored twice monthly (once every two weeks), for two hours for wildlife usage and water quality by the Designated Biologist or biological monitor. Monitoring is not required if the pond does not contain water. If a substantial number of birds and other wildlife are using the pond and water quality is poor, remedial actions to reduce wildlife use shall be implemented. An evaporation pond monitoring plan shall be developed prior to the start of operations and evaporation pond monitoring reports shall be submitted after the start of operations.

1. **Evaporation Pond Monitoring Plan.** Prior to the start of operations, the project owner shall develop an evaporation pond monitoring plan that shall include wildlife survey and water quality testing methods and specific remedial actions in the case that wildlife usage thresholds are exceeded. The wildlife usage thresholds shall also be defined in coordination with USFWS and CDFG and included in the plan. Elements to be tested shall include selenium, mercury, uranium, boron, arsenic, and vanadium. All wildlife use and water quality indices, thresholds, and remedial actions to be taken must be approved by the CPM, in consultation with USFWS and CDFG.

2. **Evaporation Pond Monitoring Report.** The project owner shall submit an evaporation pond monitoring report to the CPM once every three months after the start of operations. Records shall include the date, time, bird species, number of individuals, and behavior. The reports shall contain all records of monitoring dates, data collected, certified lab results, and any corrective actions taken. This monitoring shall occur for the first two years of plant operation, and depending on the results, could be discontinued after consultation with the CPM and USFWS and CDFG or continue as needed. A request to lessen or stop monitoring before the end of the second year of operation must be submitted in writing to the CPM, and to USFWS and CDFG for consideration.

Verification: No less than thirty (30) days prior to the start of power plant operations, the project owner shall provide copies of the evaporation pond monitoring plan and all supporting materials to the CPM for approval. The project owner shall submit copies of the evaporation pond monitoring report to the CPM, USFWS, and CDFG four times each year (once every three months).

Habitat Compensation

BIO-12 The project owner shall provide habitat compensation for temporary and permanent impacts to San Joaquin kit fox habitat at a location and amount approved by USFWS.

Verification: No less than 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall submit written verification to the CPM and USFWS that the transaction for habitat compensation has occurred.

BIOLOGICAL RESOURCES Table 1
Laws, Ordinances, Regulations, and Standards

Applicable Law	Description
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 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. 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.
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 species as fully protected and prohibits take of such species or their habitat. The administering agency is CDFG.
Native Plant Protection Act (Fish and Game Code, section 1900 et seq.)	Designates rare, threatened, and endangered plants in California, and prohibits the taking of listed plants. 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 Treat Act or any part of such migratory nongame bird. The administering agency is CDFG.
Significant Natural Areas (Fish and Game Code, section 1930 *et seq*.)	Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat. The administering agency is CDFG.
Local	
Fresno County General Plan – Open Space and Conservation Element	Requires that proposed development projects be compatible with policies set forth in the natural resources section, which provide for the protection and enhancement of fish and wildlife species, riparian and wetland habitats, and native vegetation resources.

CULTURAL RESOURCES – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Cultural Resources ▪ **Prehistoric** ▪ **Historic** ▪ **Ethnic Heritage**	**MITIGATION**	**None**	**YES**
	Construction: The project would have no impact on known significant archaeological resources, historic standing structures, or ethnographic resources. As project foundations and pipelines are excavated, there is a potential for discovering unknown cultural resources. **MITIGATION:** ☑ The Project Owner will designate a cultural resource specialist who will monitor excavation and, in the event of an unanticipated discovery, provide for the handling and curation of any recovered cultural resources. Conditions: **CUL-1** through **CUL-7**.		

CULTURAL RESOURCES- GENERAL

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

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

Project Site

The proposed SPP site is located immediately south of West Panoche Road in northwestern Fresno County, approximately two miles east of Interstate 5, three miles west of the California Aqueduct, and 50 miles west of the City of Fresno. The proposed plant would be constructed on a 5.6-acre site within a 128-acre parcel. Since 2001, the CalPeak Panoche Peaker Plant has used the proposed site as a storage yard. The

remainder of the 128-acre parcel not used for electric generation facilities storage or is currently a pomegranate orchard. (FSA 4.3-5)

An apartment building, known as "the 5-plex" and occupied by farm workers, is located on the south side of West Panoche Road along the northern edge of the proposed SPP site. Three additional groupings of residential and agricultural buildings are located within a 0.5-mile radius of the area. A cluster of three historic buildings is located at 43405 West Panoche Road, within the agricultural complex known, perhaps inaccurately, as the Chaney Ranch. Two additional clusters of historic buildings are situated within 0.5 mile of the proposed SPP site. The two clusters have the same address, 43946 West Panoche Road, and are both located north of that road. One cluster consists of three farm worker houses situated adjacent to West Panoche Road. The second cluster, made up of five farm worker houses, is located approximately 0.5 mile north of West Panoche Road. (FSA 4.3-5)

The proposed project consists of the turbine generator units within two primary and one secondary control enclosures, located in the western portion of the site. A 115-kV interconnection line would be located on the western edge of the proposed site. Other proposed project components include an 800-feet natural gas pipeline connecting to a new gas metering station at the Panoche Substation. A process water pipeline to the project would come either from the existing CalPeak Panoche Peaker Plant's well (1,200 feet) or from the Baker Farms evaporation pond (2 miles). Optimal trench dimensions for both the natural gas and water pipelines would be about 18 inches wide and 48 inches deep. The pipelines would be buried with a minimum cover of 36 inches.

Remaining project features include a 20-foot by 1,400-foot graded gravel/asphalt roadway, a water treatment system that includes a reverse osmosis unit, three 75,000-gallon water storage tanks, a 25,000-square-foot evaporation pond to collect wastewater discharge, and a wastewater drain and sump system to collect oily waste that would then be pumped to a 4,700-gallon above-ground storage tank. (FSA 4.3-5)

Prior to construction, site preparation would include clearing the site of existing stored materials and excess earth, sand, gravel, vegetation, organic material, loose rock, and boulders. Finish grade would be approximately one foot higher than existing grade, and the tops of foundations would be approximately three feet higher than existing grade. All fill needed for the project is expected to come from on-site locations. Excavations would extend to a maximum depth of three feet in foundation areas, whereas, elsewhere on site, excavations and cutting of up to five feet in depth would occur. (FSA 4.3-6, 7)

Prehistoric

Prehistoric archaeological resources are those resources relating to prehistoric human occupation and use of an area; these resources may include sites and deposits, structures, artifacts, rock art, trails, and/or any other traces of Native American human behavior. In California, the prehistoric period has been determined to pre-date 10,000 years before present (B.P.) and extend well into the 18th century with the initiation of the Mission Period (1769) and the first Euro-American (Spanish) settlement of California.

The proposed SPP is located in the western San Joaquin Valley, a large interior valley composed of alluvial plains and river channels. Until the late nineteenth century, a large, seasonal, shallow lake, Tulare Lake, was located southeast of the project area. Depending on the lake's fluctuating levels, the project area was at times covered by marshlands whose plant and wildlife resources made it attractive to Native Americans. The run-off from rivers rising in the south-central Sierra Nevada fed the lake, so the extent of the lake varied with the season and with regional precipitation. Geologists believe the average level of Tulare Lake fluctuated seven or eight times during the past 11,500 years. The lower San Joaquin Valley "remains one of the least known archaeological areas in California." Archaeologists have not identified the Big Game Hunting Tradition in its classic form in California, although its characteristic fluted projectile points have been found all over the state. Such projectile points, known as Clovis points, have been recovered from the relict shores of Tulare Lake in association with the bones of such extinct animals as horse, bison, giant sloth, and mammoth/mastodon, indicating a date for the occupation of Tulare Lake before 11,000 B.P. (FSA 4.3-7)

After 7,000 B.P., for the most part, the fluctuating climate and environment stabilized, resulting in present conditions in California. Sites occupied during this time period in the lower San Joaquin Valley, as is the case elsewhere in California, contain higher numbers of groundstone milling artifacts used to process hard seeds into meal, suggesting an increased use of vegetal food sources The earliest period in the western San Joaquin Valley sequence is the Positas Complex (ca. 5,200-4,500 B.P.), which is characterized by small, shaped mortars, short cylindrical pestles, milling stones, and spire-lopped *Olivella* (olive shell) beads. The succeeding Pacheco Complex includes two phases. The earlier one, Pacheco B (ca. 4,500-2,500 B.P.) is poorly documented but includes characteristic leaf-shaped bifaces, large, stemmed and side-notched points, rectangular *Haliotis* (abalone) ornaments, thick rectangular *Olivella* beads, as well as abundant milling stones, mortars, and pestles. The Pacheco A Complex (2,500-1,000 B.P.) is represented by flexed burials associated with distinctive *Olivella* and *Macoma* (clam) bead types, both mortars-and-pestles and millingslabs-and-handstones, and a variety of projectile points. The earliest evidence of architecture appears in the form of small circular houses about 10 to12 feet in diameter. (FSA 4.3-9, 10)

The Gonzaga Complex (ca. 1,000-450 B.P.) is marked by extended and flexed burials, bowl mortars, shaped pestles, relatively rare squared- and tapered-stemmed projectile points, distinctive Haliotis ornaments, and thin rectangular, split-punched, and oval Olivella beads. Bone artifacts include awls, pins, mammal-bone tubes, bird-bone whistles, and grass cutters made from the scapulae of large mammals. Distinctive spool-shaped polished stone ear ornaments and cylindrical plugs are also found. Milling equipment continues include both mortars and milling slabs. House pits increase in size up to 20 to 30 feet in diameter, some with evidence of center posts. Based on regional comparisons of numerous traits, it was noted that each major temporal period seemed to reflect occupations by different populations, or at least populations with divergent cultural/geographic affinities. The Positas Complex, although poorly represented, showed relationships to the south coast while the Pacheco Complex was thought to possibly represent intrusion of peoples from the Monterey Bay area. Most conspicuous of all was the Gonzaga Complex with its extended burials similar to the

delta, followed by the protohistoric Panoche Complex, probably representing the ethnographically recorded Yokuts (FSA 4.3-10, 11)

The Applicant's records search sought information on any previously identified prehistoric and historic-period archaeological sites, historic architectural properties, and Native American sacred sites within a one-mile radius of the 5.6-acre proposed SPP parcel and adjacent CalPeak Panoche Peaker plant. The records search found that none of the impact areas associated with the proposed SPP had been previously surveyed. There were five previous cultural resources surveys conducted in the larger study area, but no known cultural resources had been identified within a 0.5-mile radius of the proposed project site. The nearest known prehistoric sites are located about two miles north of the project area, along Panoche Creek. (FSA 4.3-17)

Despite the negative findings of the Applicant's archaeological survey and the lack of indications of subsurface cultural material in the borings of the geotechnical study, there remains a possibility of encountering buried archaeological materials, considering the presence of a known prehistoric occupation site located approximately two miles north of the proposed SPP site.

No prehistoric sites were identified within 0.5 mile of the project during either Applicant's the literature search or walking survey. (FSA 4.3-4, 9)

Historic

Historic archaeological resources are those materials usually associated with Euro-American exploration and settlement and the beginning of written historical records. Historic resources may also include archaeological deposits, sites, structures, traveled ways, artifacts, documents, and/or any other evidence of human activity. Prior to 1998, federal and state requirements identified historic resources as being greater than fifty years of age. Amendments to CEQA have removed the references to the fifty-year designation, while the federal regulations maintain the requirement.

CEQA provides that historical resources which are eligible for inclusion on the California Register of Historic Places (CRHR) are to be protected from any substantial adverse change. Even if a resource is not listed or determined to be eligible for listing, CEQA requires the lead agency to make a determination as to whether the resource is a historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

Since the aridity of much of the San Joaquin Valley made it unsuitable for the kind of agriculture Euro-Americans practiced, non-Native American settlement did not occur on any significant scale in the project area until the early twentieth century, when irrigation systems were developed. (FSA 4.3-12)

The Gold Rush of 1849 brought settlers to the Upper Kings River (part of what would become Fresno County in the 1850s), but the northwestern part of the county, where the proposed project area is located, did not appeal to American settlers. Following unsuccessful attempts at mining, however, many settlers turned to farming in the

Central Valley. The vast network of valley marshes, wetlands, and lakes, including Tulare Lake, was drained to create farmland. Chinese workers, who had originally come to California to work in the mines, later began to work as farmhands. (FSA 4.3-13)

In the 1860s, stock-raising became a dominant business in the area. In the 1870s, the establishment of the railroad provided a larger market to farmers and also an easier mode by which settlers could come to California, ushering in an era of general farming. However, the arid climate finally caused a community of Basque families, who had been raising stock in the project area for some 20 years, to abandon their homesteads, and later attempts at dry-farming wheat and barley in the area were short-lived.

By the early twentieth century, irrigated agriculture, using canals to divert the waters of eastern Fresno County rivers, proved the great fertility of the region's soils, and land speculators began buying large parcels west of Mendota in an area called Mendota Plains. The speculators enticed buyers through promotional campaigns touting the abundant groundwater of the area and the probability of future irrigation projects. (FSA 4.3-14)

One of the early twentieth-century land speculators left his name on a local landmark: the Chaney Ranch. Andrew J. Chaney, of Hollister, was one of five San Benito County partners who formed the Silver Creek and Panoche Land Company, incorporated in 1891. In 1907, the partnership owned the entire section (Section 5) where the project is located. The earliest reference to a "Chaney Ranch" appears on the 1913 topographic map of the area (the survey for which was done between 1908 and 1911). The USGS 1922 "Chaney Ranch" quadrangle shows the original Chaney Ranch, including a road network and buildings, located in the vicinity of the proposed SPP site. (FSA 4.3-14, 15)

The original Chaney Ranch was located some 400 feet east of the proposed SPP parcel. Consequently, construction-associated activities of the SPP at the proposed site are unlikely to encounter archaeological deposits associated with the core area of the original Chaney Ranch. However small, a possibility remains that archaeological deposits from some Chaney Ranch satellite activity, such as trash disposal, could be buried on the proposed project site. (FSA 4.3-17, 18)

In addition to archival research and field surveys, nine borings were conducted as part of a geotechnical study. The borings were not observed by an archaeologist, but the soil descriptions in the report and in the detailed boring logs are not consistent in color, composition, or content with the kinds of soils usually indicative of archaeological deposits. (FSA 4.3-18)

Other historic-period remains, such as subsurface irrigation and water supply lines associated with the original Chaney Ranch, could be encountered during ground-disturbing activities at the proposed SPP site. Depending on their age and significance, these could be considered archaeological remains or underground vernacular structures. To be historically significant, they would have to be more than 45 years old and would have to be unusual or unique in materials (not-mass-produced) or in design.

Despite the negative findings of the Applicant's archaeological survey and the lack of indications of subsurface cultural material in the borings of the geotechnical study, there remains a possibility of encountering buried archaeological materials, considering the presence of the original Chaney Ranch in the vicinity. (FSA 4.3-18)

Ethnic Heritage

Ethnographic resources are those resources important to the heritage of a particular ethnic or cultural group, such as Native Americans, Hawaiian, Eskimo, African, European, or Asian immigrants. They may include traditional resource collecting areas, ceremonial sites, topographic features, cemeteries, shrines, or ethnic neighborhoods and structures. Ethnographic resources also include personal biographical data, interview data, and collections or oral histories relating the life ways of previous generations.

The project area is located within the boundaries of the Northern Valley Yokuts territory, at the northeastern end of the San Joaquin Valley, south of Panoche Creek. "Yokuts" is a term applied to a large and diverse group of native people inhabiting the San Joaquin Valley and Sierra Nevada foothills of central California. The Northern Valley Yokuts occupied a 40- to 60-mile-wide area straddling the San Joaquin River, south of the Mokelumne River, east of the Diablo Range, and north of the sharp bend that the San Joaquin River takes to the northeast. For the Northern Valley Yokuts, the San Joaquin River and its main tributaries served as a lifeline to the valley, as a source of fish and game, and as an environment favorable to another important food source, the valley oak. Acorns, in addition to other types of nuts, seeds, fruits, and roots, were important subsistence items. (FSA 4.3-15)

On October 20, 2006, the Native American Heritage Commission (NAHC) informed the Applicant that no known Native American cultural resources in the project area were found in the NAHC's sacred lands database. On October 20, 2006, the Applicant caused letters (with maps of the project) to be sent to Native American individuals the NAHC identified as concerned about development projects in Fresno County, representing four Native American groups. No responses were received. Unless further communications with Native Americans disclose significant sites of ethnographic concern, at this time no significant ethnographic sites have been identified that must be considered when evaluating the impacts of the construction of the proposed SPP plant. (FSA 4.3-20)

MITIGATION:

- ☑ The Project Owner will designate a cultural resource specialist who will monitor excavation and, in the event of an unanticipated discovery, provide for the handling and curation of any recovered cultural resources. Conditions: **CUL-1** through **CUL-7**.

Cumulative Impacts

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c). 15130. and 15355.) The construction of other projects in the same vicinity as the proposed project could affect unknown subsurface archaeological deposits (both prehistoric and historic).

One future industrial project and three existing industrial facilities are immediately adjacent to the proposed SPP location. These are:

1. The CalPeak Peaker Plant, an existing natural gas–fired power plant;
2. The Wellhead Power Generation facility, an existing natural gas–fired power plant;
3. The proposed Panoche Energy Center (PEC) (06-AFC-5), a future, natural gas–fired power plant currently under Energy Commission review; and
4. The PG&E Panoche Substation, an existing facility for which an expansion is planned in connection with the construction of the PEC.

No evaluations of the impacts to cultural resources of the CalPeak Peaker Plant and of the Wellhead Power Generation facility were identified in the record searches for either the SPP project or the PEC project, so no data are available on the potential contribution of these projects to a cumulatively considerable impact on cultural resources. The impacts to cultural resources of the PEC project, of the expanded PG&E substation, and of the SPP were analyzed by Energy Commission staff and found to be not significant, with the implementation of Conditions of Certification providing for identification, evaluation, and avoidance or mitigation of impacts to significant cultural resources discovered during the construction of these projects.

Since the impacts from the SPP project would be mitigated to a level less than significant by the project's compliance with **CUL-1** through **CUL-7**, and since similar protocols can be applied to other current and future projects in the area, any incremental effects of the SPP are not expected to be cumulatively considerable, when viewed in conjunction with other projects. (FSA 4.3-27)

Finding

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

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction,

the project owner shall obtain the services of a Cultural Resources Specialist (CRS), and one or more alternates, 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 Resources 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 (Discovery). No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction shall occur prior to CPM approval of the CRS, unless specifically approved by the CPM. Approval of a CRS may be denied or revoked for non-compliance on this or other projects.

CULTURAL RESOURCES SPECIALIST

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. The CRS's qualifications shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history, or a related field; and

2. At least three years of archaeological or historic, as appropriate, resources mitigation and field experience in California.

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 knowledgably 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 effectively implement 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 preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.

At least 10 days prior to a termination or release of the CRS, or within 10 days after 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 approved new CRS the AFC and all cultural documents, field notes, photographs, and other cultural materials generated by the project.

At least 20 days prior to preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the CRS 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. If additional CRMs are obtained during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to the qualifications of the CRMs, at least five days prior to the CRMs beginning on-site duties.

At least 10 days prior to beginning tasks, the resume(s) of any additional technical specialists shall be provided to the CPM for review and approval.

At least 10 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, 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 preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, and confidential cultural resources reports for the project. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall include the appropriate USGS quadrangles and a map 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 submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction

activities shall occur prior to CPM approval of maps and drawings, unless 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.

At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

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 preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the project owner shall provide the AFC, data responses, and confidential cultural resources documents 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.

If there are changes to any project-related footprint, revised maps and drawings shall be provided at least 15 days prior to start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction for those changes.

If project construction is phased, if not previously provided, the project owner shall submit the subject maps and drawings 15 days prior to each phase.

On a weekly basis during preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, email, or fax.

Within five days of identifying changes, the project owner shall provide written notice of any changes to scheduling of construction phase.

CUL-3 Prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, 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 CPM shall provide the project owner with a model CRMMP to adapt for project use. The CRMMP shall be provided in the Archaeological Resource Management Report (ARMR) format, and, per ARMR guidelines, the author's name shall appear on the title page of the CRMMP. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner.

Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the project owner's on-site construction manager. No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction shall occur prior to CPM approval of the CRMMP, unless specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. A proposed 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. A prescriptive treatment plan may be included in the CRMMP for limited resource types. A refined research design will be prepared for any resource where data recovery is required.
2. The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions 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."
3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during ground disturbance, construction, and post-construction analysis phases of the project.
4. Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.
5. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities.
6. A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of construction and how long they would be needed to protect the resources from project-related effects.
7. A statement that all cultural resources encountered 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, 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.

8. A statement that the project owner will pay all curation fees and a copy of an agreement with, or other written commitment from, a curation facility to accept artifacts from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.
9. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resources materials that are encountered during construction and cannot be treated prescriptively.
10. A description of the contents and format of the Cultural Resources Report (CRR), which shall be prepared according to ARMR guidelines.

Verification: At least 30 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the project owner shall submit the subject CRMMP to the CPM for review and approval. Preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction may not commence until the CRMMP is approved, unless specifically approved by the CPM.

At least 30 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, a letter shall be provided to the CPM indicating that the project owner agrees to pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CUL-4 The project owner shall submit the Cultural Resources Report (CRR) to the CPM for approval. The CRR shall be written by 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, and additional research reports not previously submitted to the California Historical Resources Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as an appendix to the CRR.

If the project owner requests a suspension of 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 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.

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, and the curating institution, if archaeological materials were collected.

Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.

CUL-5 Prior to and for the duration of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to project managers, construction supervisors, foremen, and general workers who are involved with or operate ground disturbing equipment or tools. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The 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. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt construction 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;
4. 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;
5. An informational brochure that identifies reporting procedures in the event of a Discovery;
6. An acknowledgement 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.

No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, shall occur prior to implementation of the WEAP program, unless 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, and the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

On a monthly basis, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 The project owner shall ensure that the CRS, alternate CRS, or CRMs shall monitor preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction full time at the project site and linear facilities, and ground disturbance full time at laydown areas or other ancillary areas, to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner (Discovery). Specifically, the CRS, alternate CRS, or CRMs shall monitor: the initial soil stripping and any grading of the plant site; the excavation of structural foundations, of trenches for the natural gas and water pipelines, and of the 25,000 square-foot evaporation pond; and the drilling of the 1,500-foot-deep well, if this alternate water source is necessary.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of all native-soil–removing activities on the construction site or along the linear facility routes for as long as the activities are ongoing. Full-time archaeological monitoring shall require at least one monitor per excavation area where machines are actively removing native soils. If an excavation area is too large for one monitor to effectively observe the soil removal, one or more additional monitors shall be retained to observe the area.

In the event that the CRS determines that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

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

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the Conditions and/or applicable LORS. Copies of the daily logs shall be provided to the CPM by the CRS as directed 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 cultural resources-related activities at the construction site, 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 resources monitoring and mitigation activities with Energy Commission technical staff (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.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts are discovered. Informational lists of concerned 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.

Verification: At least 30 days prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring and trenching; and construction, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log. 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.

Daily, 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 acceptable to the CPM. If the CRS concludes that daily reporting is no longer necessary, a letter or e-mail providing a detailed justification for the decision to reduce or end daily reporting shall be provided to the CPM for review and approval at least 24 hours prior to reducing or ending daily reporting.

At least 24 hours prior to implementing a proposed change in monitoring level, documentation justifying the change shall be submitted to the CPM for review and approval.

CUL-7 The project owner shall grant authority to halt construction 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 considered exceptionally significant are found, or impacts to such resources can be anticipated, construction shall be halted or redirected in the immediate vicinity of the Discovery sufficient to ensure that the resource is protected from further impacts. The halting or redirection of construction 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 eligibility, and recommendations for mitigation of any cultural resources Discoveries, whether or not a determination of significance has been made.
2. The CRS has completed field notes, measurements, and photography for a DPR 523 primary form. The "Description" entry of the 523 form shall include a recommendation on the significance of the find. The project owner shall submit completed forms to the CPM.
3. 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.

Verification: At least 30 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt construction activities 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.

Completed DPR form 523s 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 is more appropriate for the subject cultural resource, as determined by the CRS.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

CULTURAL RESOURCES

APPLICABLE LAW	DESCRIPTION
STATE	
Public Resources Code, section 21083.2	The lead agency may require reasonable steps to preserve a unique archaeological resource in place. Otherwise, the project applicant is required to fund mitigation measures to the extent prescribed in this section. This section also allows a lead agency to make provisions for archaeological resources unexpectedly encountered during construction, which may require the project applicant to fund mitigation and delay construction in the area of the find (CEQA).
California Code of Regulations, Title 14, section 15064.5, subsections (d), (e), and (f)	Subsection (d) allows the project applicant to develop an agreement with Native Americans on a plan for the disposition of remains from known Native American burials impacted by the project. Subsection (e) requires the landowner [possibly the project applicant] to rebury Native American remains elsewhere on the property if other disposition cannot be negotiated within 24 hours of accidental discovery and required construction stoppage. Subsection (f) directs the lead agency to make provisions for historical or unique archaeological resources that are accidentally discovered during construction, which may require the project applicant to fund mitigation and delay construction in the area of the find (CEQA Guidelines).
California Code of Regulations, Title 14, section 15126.4(b)	This section describes options for the lead agency and for the project applicant to arrive at appropriate, reasonable, enforceable mitigation measures for minimizing significant adverse impacts from a project. It prescribes the manner of maintenance, repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project's impact on a historical resource; discusses documentation as a mitigation measure; and advises mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan (CEQA Guidelines).
Public Resources Code 5024.1	The California Register of Historic Resources (CRHR) is established and includes properties determined eligible for the National Register of Historic Places (NRHP), State Historic Landmark No. 770 and subsequent numbered landmarks, points of historical interest recommended for listing by the State Historic Resources Commission, and historical resources, historic districts, and landmarks designated or listed by a city or county under a local ordinance. The criteria for eligibility to the NRHP and CRHR are very similar. Criteria for determining eligibility to the CRHR are 1) is

	associated with historically important events, 2) is associated with important persons in history, 3) embodies distinctive construction or artistic value, and 4) may yield data important in history or prehistory.
Public Resources Code 5020.1 (h)	"Historic district" means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.
California Health and Safety Code, Section 7050.5	This code makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code would require the project owner to halt construction if human remains are discovered and to contact the county coroner.
Local	
Fresno County General Plan (2000) Policies OS-J.1, J-2, J-3 & J-4	The County shall require discretionary development projects to identify and protect important historical, archaeological, paleontological, and cultural sites and their contributing environment, as part of any required CEQA review. Native American representative shall be consulted. Sites shall be confidential.

GEOLOGY & PALEONTOLOGY– Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Earthquake/ Instability	**CONDITIONS**	**None**	**YES**
	Ground shaking and liquefaction during an earthquake, and expansive soils represent the only known geologic hazards at this site. These potential hazards can be effectively mitigated through facility design . **CONDITIONS:** ☑ The Project Owner shall prepare an Engineering Geology Report pursuant to the California Building Standards Code to fully describe the geologic conditions of the power plant site and, if necessary, shall modify plans to address adverse soil or geologic conditions. Conditions: **GEN-1, GEN-5, CIVIL-2** & **CIVIL-3**.		
Mineral Resources	**None**	**None**	**YES**
	The proposed energy facility site and transmission line route are designated by the California Department of Conservation, Division of Mines and Geology as not having or unlikely to have significant mineral deposits (aggregates) present.		
Fossils (Paleontology)	**MITIGATION**	**None**	**YES**
	Fossil bearing sites are known to lie within 3 miles of the proposed site. In the event of an unanticipated discovery of paleontologic resources during site excavation, procedures provide for their recovery. **MITIGATION:** ☑ Procedures for the recovery of unknown paleontological resources at the power plant site will prevent a significant impact to paleontological resources. Conditions: **PAL-1** to **PAL-7**.		
Flood	**None**	**None**	**YES**
	The entire SPP site has been identified as existing within the limits of a special flood hazard area (Zone A) that can be inundated by a 100-year flood with no base flood elevation determined (Federal Emergency Management Agency). The effect of any flooding can be effectively mitigated by establishing finish grade above any flood elevation as required by Facility Design. .		

GEOLOGY – GENERAL

Regional Setting

The site is generally underlain by alluvium of the Panoche fan (Panoche Series), which consists of poorly to moderately sorted, subangular to subrounded gravels, sands, silts, and clays complexly interbedded in lenses of varying thickness. The site is located within an area mapped as Quaternary age alluvium composed of clay and sand. Exploration at the site extended to a maximum depth of 101.5 feet below existing grade and encountered recent alluvium characterized by complexly interbedded lenses silts, sands with varying silt content, and clays. The sand soils were generally classified as slightly moist to moist, and very loose to medium dense. The silts and clays were generally classified as moist and medium stiff to very stiff. Ground water was not encountered to the depths explored (101.5 feet). (FSA 5.2-4.)

Earthquake/Instability

No active or potentially active faults are known to cross the power plant footprint or its associated linear facilities. The closest known active fault is the Ortigalita fault zone (a dextral strike-slip fault) which is located 19.0 miles from the site at its closest point. The next closest known active fault is the San Andreas fault (a dextral strike-slip fault) which is located 28.0 miles west of the proposed energy facility at its closest point. The Nunez fault is located approximately 30 miles from the site at its closest point. The closest Great Valley thrust fault is located approximately 4.7 miles from the site at its closest point; however, the Great Valley thrust faults are not considered Earthquake Fault Zones as defined by the Alquist-Priolo Earthquake Fault Zoning Act of 1994. (FSA 5.2-6)

The estimated peak horizontal ground acceleration for the power plant is estimated to be 0.4g based on 10 percent probability of exceedence in 50 years. The potential of surface rupture on a fault at the energy facility footprint is considered to be very low, since no faults are known to have ruptured the ground surface of the proposed energy facility location. (FSA 5.2-4)

Liquefaction is a nearly complete loss of soil shear strength that can occur during a seismic event. Liquefaction is a condition in which a cohesionless soil may lose shear strength due to a sudden increase in pore water pressure. Since the depth to ground water at the site is much greater than 50 feet below existing grade, the potential for liquefaction at the power plant site is negligible. (FSA 5.2-6)

Dynamic compaction of soils results 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 into a more dense state (an increase in soil density). The decrease in volume can result in settlement of overlying structural improvements.

The site is underlain by lenses of very loose to loose granular soils that exhibit a potential for dynamic compaction during strong seismic events; however, heavily-loaded and settlement-sensitive structures can be founded on deep foundations to effectively mitigate potential settlement. As a result, the potential for dynamic compaction to affect operation of the facility is considered low as long as foundation design incorporates deep foundations beneath heavily loaded and/or settlement-sensitive structures. Condition of Certification **GEO-1** is designed to ensure mitigation of this potential hazard to a less than significant level. (FSA 5.2-7)

Hydrocompaction is the process of the loss of soil volume upon the application of water. Although soils in the region are known to exhibit hydrocompaction potential, the site has been irrigated for agricultural use for many years which minimizes the potential of near-surface hydrocompaction. In addition, heavily-loaded and settlement-sensitive structures can be founded on deep foundations to effectively mitigate potential settlement. As a result, the potential for hydrocompaction to affect operation of the facility is considered low as long as foundation design incorporates deep foundations beneath heavily loaded structures and settlement-sensitive structures. Condition of Certification **GEO-1** is designed to ensure mitigation of this potential hazard to a less than significant level. (FSA, 5.2-7)

Ground subsidence is typically caused by petroleum or ground water withdrawal. This area has experienced significant historic subsidence due to ground water withdrawal for agricultural use. Recently, ground subsidence due to ground water withdrawal has decreased substantially due to an increased reliance on surface water, microirrigation techniques, and land retirement such that significant subsidence due to surrounding ground water withdrawal is not anticipated.

Although water supply sources being considered by the Applicant include pumping of ground water from the upper semi-confined aquifer (within 400 of the ground surface), ground water pumping for this project is expected to have an insignificant effect on the ground water level due to the estimated pumping rates (a peak of 138 gallons per minute) relative to the volume of ground water storage and the annual yield. As a result, there is no significant potential for subsidence due to ground water withdrawal at the proposed SPP. (FSA 5.2-7)

Soil expansion occurs when certain clay soils, with an affinity for water, exist in-place at a moisture content below their plastic limit. The addition of moisture from precipitation, irrigation, capillary tension, water line breaks, or other sources, allows the clay to bind water molecules into its structure, which in turn causes an increase in the overall volume of the soil. This increase in volume can cause uplift (heave) of overlying structural improvements. Surficial clays of medium plasticity have been documented at this site and at the adjacent Panoche Energy Center site. These types of soils will exhibit some shrink-swell behavior. Mitigation of expansive soil, by over-excavation and replacement of these materials under the proposed structures, or by founding structures on deep foundations, is considered appropriate. Condition of Certification **GEO-1** is designed to ensure mitigation of this potential hazard to a less than significant level. (FSA 5.2-7, 8)

To fully describe the geologic conditions of the power plant site, the Project Owner shall prepare an Engineering Geology Report pursuant to the California Standards Building Code. During site grading, a designated Engineering Geologist shall monitor for any adverse soil or geologic conditions.

CONDITIONS:

- ☑ The Project Owner shall prepare an Engineering Geology Report pursuant to the California Building Standards Code to fully describe the geologic conditions of the power plant site and, if necessary, shall modify plans to address adverse soil or geologic conditions. Conditions: **GEO-1, GEN-1, GEN-5** and **CIVIL-1.**

Landslide potential at the SPP site is negligible since the proposed energy facility is located on a broad, gently sloping (0.5 percent to the northeast) alluvial fan. (FSA 5.2-8)

Mineral Resources

Energy Commission staff has reviewed applicable geologic maps and reports for this area. Based on this review and the information contained in the AFC (Section 5.3), there are no known viable geologic or mineralogical resources located at or immediately adjacent to the proposed SPP site. The southern extent of the Chaney Ranch gas field is located approximately ½ mile north of the plant site; however, the last production from this field was in 1951 and the field was officially abandoned in 1964. (FSA 5.2-8)

Fossils – Paleontology

A paleontologic resources field survey has been performed for the entire project and the area surrounding it. The results of this study indicate that excavations in the underlying native soils, in particular the Los Banos alluvium and the San Luis Ranch alluvium, could disturb fossiliferous sediments such that adverse impacts on significant paleontological resources could be experienced. In addition, fossil sites are present within 3 miles of the project site. Based on this information and Staff's review of available information, the proposed SPP site has a high potential to contain significant paleontological resources when native materials are encountered during grading, foundation, and trenching activities. (FSA 5.2-8)

Since construction of the proposed project will include significant grading, foundation excavation, and utility trenching, the probability that paleontological resources will be encountered in deeper excavations is high. Monitoring earthwork activities by qualified professional paleontologists allows fossils that would otherwise not have been discovered can be collected, identified, studied, and properly curated. (FSA 5.2-8)

MITIGATION:

- ☑ Procedures for the recovery of unknown paleontological resources at the power plant site will prevent a significant impact to paleontological resources. Conditions: **PAL-1** to **PAL-7**.

Floods

The SPP lies on a very gently sloping alluvium plain, and drainage of the site is accomplished by overland sheet flow. The entire SPP site has been identified as existing within the limits of a special flood hazard area (Zone A) that can be inundated by a 100-year flood with no base flood elevation determined (Federal Emergency Management Agency). The effect of any flooding can be effectively mitigated by establishing finish grade above any flood elevation as required by facility design. Therefore, the potential for flooding to affect operation of the plant is considered low. (FSA, 5.2-8.)

Cumulative Impacts

Geologic hazards present at this site include strong ground shaking during an earthquake, potential dynamic compaction, potential differential settlement of heavily loaded structures, potential hydrocompaction, and moderately expansive soils. The SPP site lies in an area that exhibits no known viable geologic or mineralogic resources. Strong ground shaking, potential dynamic compaction, potential settlement of heavily loaded structures, potential hydrocompaction, and expansive clay soils must be mitigated through foundation design as required by the CBC (2007) and Conditions of Certification **GEO-1,** and **GEN-1, GEN-5,** and **CIVIL-1** under FACILITY DESIGN. Paleontological resources have been documented in the general area of the project. The potential impacts to paleontological resources due to construction activities will be mitigated as required by proposed Conditions of Certification **PAL-1** to **PAL-7**. Based on this information, it is staff's opinion that the potential for significant adverse cumulative impacts to the project from geologic hazards, and to potential geologic, mineralogic, and paleontologic resources from the proposed project, is low. (FSA 5.2-9)

Findings

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to geological and paleontological resources, all potential adverse impacts to geologic and paleontological resources will be mitigated to insignificance, and the public is not exposed to geological hazards.

CONDITIONS OF CERTIFICATION

See also Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the **FACILITY DESIGN** section. Paleontological Conditions of Certification **PAL-1** through **PAL-7** are identified below.

GEO-1 The Soils Engineering Report required by the 2007 CBC Appendix Chapter 33, Section 3309.5 Soils Engineering Report, should specifically include

laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of potential dynamic compaction, hydrocompaction, expansion potential, and settlement potential of the site soils; as well as recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards.

Verification: The project owner shall include in the application for a grading permit a copy of the Soils Engineering Report which addresses the potential for site soils to experience dynamic compaction, hydrocompaction, expansion, and settlement due to structure surcharge, and a summary of how the results of the analyses were incorporated into the project foundation and grading plan design for review and comment by the Chief Building Official (CBO). A copy of the Soils Engineering Report, application for grading permit and any comments by the CBO are to be provided to the CPM at least 30 days prior to grading.

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 submit to the CPM to keep on file, resumes of the approved Paleontological Resource Monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1. institutional affiliations, appropriate credentials and college degree,
2. ability to recognize and collect fossils in the field;
3. local geological and biostratigraphic expertise;
4. proficiency in identifying vertebrate and invertebrate fossils and;
5. at least three years of paleontological resource mitigation and field experience in California, and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as he or she deems necessary on the project. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year experience monitoring in California; or
- AS or AA in geology, paleontology or biology and four years experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification: 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 and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor beginning on-site duties.

Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction laydown areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance to greater than 5 feet depth is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and can be at a scale of 1 inch = 40 feet to 1 inch = 100 feet range. If the footprint of the power plant or linear facility changes, the project owner shall provide maps and drawings reflecting these changes to the PRS and CPM.

If construction of the project will proceed in phases, maps and drawings 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. Prior to work commencing on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

PAL-3 The project owner shall ensure the PRS prepares, and the project owner submits to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting and sampling activities and may be modified with CPM approval. This document shall be used as a basis for discussion in the event that on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP, 1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to the PRMMP procedures;

2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;

3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;

4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;

5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for the monitoring and sampling;

6. A discussion of the procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;

7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove,

load, transport, and analyze large-sized fossils or extensive fossil deposits;

8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontology standards and requirements for the curation of paleontological resources;

9. Identification of the institution that has agreed to receive any data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and

10. A copy of the paleontological Conditions of Certification.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-4 Prior to ground disturbance and for the duration of construction 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 who are involved with or 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 an initial in-person PRS training during the project kick-off for those mentioned above. Following initial training, a CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the WEAP, unless specifically approved by the CPM.

The Worker Environmental Awareness Program (WEAP) shall address the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.

The training shall include:

1. A discussion of applicable laws and penalties for violation of the laws;

2. Depictive photographs or physical examples of vertebrate fossils shall be provided for project sites containing units of high paleontologic sensitivity;

3. Information discussing the authority of the PRS or PRM to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;

4. Instruction directing employees 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 paleontological discovery;

6. A Certification of Completion of WEAP form signed by each worker indicating that he/she has received the training; and

7. A sticker for employees to place 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 the workers are 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 on using 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 potentially fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full time monitoring is not necessary in locations that were identified in the PRMMP as potentially fossil-bearing, the project owner shall notify and seek the concurrence of the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring different from the accepted schedule presented in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring. These changes should also be included in the Monthly Compliance Report. The

letter or email shall state the justification for the change in monitoring and be submitted to the CPM for review and approval;

2. The project owner shall ensure the PRM(s) keeps a daily log of monitoring of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time;

3. The project owner shall ensure the PRS immediately notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification;

4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours or Monday morning in the case of a weekend when construction has been halted due to a paleontological find.

The project owner shall ensure the PRS prepares a summary of the monitoring and other paleontological activities which will be placed in the Monthly Compliance Reports (MCR). The summary will include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities and general locations of excavations, grading, etc. A section of the report shall include the geologic units or subunits encountered; descriptions of sampling within each unit; and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring including any incidents of non-compliance and any changes to the monitoring plan 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 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, in collaboration with the designated PRS, shall ensure all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during the project construction.

Verification: The project owner shall maintain in their compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after completion and approval of the CPM-approved Paleontological Resource Report (See

PAL-7). The project owner shall be responsible to pay any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

PAL-7 The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submitted to the CPM for review and approval.

The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.

Verification: Within 90 days after completion of ground disturbing activities, including landscaping, the project owner shall submit the Paleontological Resources Report under confidential cover to the CPM.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

GEOLOGY

APPLICABLE LAW	DESCRIPTION
FEDERAL	There are no Federal LORS related to geological hazards and resources.
STATE	
California Building Standards Code (2001)	The California Building Code includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control).
LOCAL	No local LORS related to geologic hazards and resources.

PALEONTOLOGICAL RESOURCES

APPLICABLE LAW	DESCRIPTION
FEDERAL	There are no applicable LORS for this section.
STATE	
California Environmental Quality Act	Defines significant impacts on a fossil site. Project construction might encounter fossil site/remains.
Public Resource Code Section 5097.5	Defines any unauthorized disturbance or removal of fossil site/remains on public land as a misdemeanor. Project construction might encounter fossil site/remains; construction workers might remove fossil remains.
Society for Vertebrate Paleontology (SVP) Guidelines	The "Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures" is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. The measures were adopted in October 1995 by the Society for Vertebrate Paleontology, a national organization of professional scientists.
Warren-Alquist Act	Requires CEC to evaluate energy facility siting in unique areas of scientific concern. Project construction might encounter fossil site/remains.
LOCAL	There are no applicable LORS for this section.

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HAZARDOUS MATERIALS – Summary of Findings and Conditions

Transportation	MITIGATION	None	YES

Construction: Typical hazardous materials used during the construction phase may include gasoline, diesel fuel, motor oil, hydraulic fluid, welding gases, lubricants, solvents, paint, and paint thinner. No acutely toxic hazardous materials will be used onsite during construction. None of these materials pose significant potential for off-site impacts as a result of the quantities on-site, their relative toxicity, their physical state, or their environmental mobility.

Operation: Hazardous materials, including aqueous ammonia, sulfuric acid, and cleaning chemicals, will be transported to the facility via tanker truck. The maximum usage of aqueous ammonia each year of operation of the proposed project will require about 3 tanker truck deliveries of aqueous ammonia per year, each delivering about 6,000 gallons. Transport of aqueous ammonia poses the predominant risk associated with hazardous materials transport.

MITIGATION:

- ☑ The Project Owner shall implement a Safety Management Plan for the delivery of aqueous ammonia. Condition **HAZ-3**.
- ☑ The Project Owner shall direct all vendors delivering aqueous ammonia to use tanker trucks meeting or exceeding federal Department of Transportation regulations. Condition **HAZ-5**.
- ☑ The Project Manager shall direct all hazardous materials deliveries over approved routes selected for safety. Condition **HAZ-6**.

Storage & Use	**MITIGATION**	**None**	**YES**
	Construction: No acutely hazardous materials related to construction will be used or stored on-site at the power plant. Some materials designated as hazardous will be used in small quantities for a limited period of time. The risk of off-site exposure is insignificant. Operation: Hazardous and acutely hazardous materials, such as aqueous ammonia and natural gas, will be used for power plant operation. Aqueous ammonia is the only such material to be used in reportable quantities. Tank ruptures or delivery spills are the only means by which there will be off-site exposure to aqueous ammonia. The Project Owners will prepare a Hazardous Materials Management Plan and a Risk Management Plan to prevent releases of hazardous materials. Natural gas will be delivered to the project by a pipeline. Natural gas will not be stored on-site. **MITIGATION:** ☑ The Project Owner shall not store and use amounts of acutely hazardous materials in excess of quantities stated in the AFC. Condition **HAZ-1.** ☑ The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority (CUPA) – Fresno County Environmental Health Division and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). Condition **HAZ-2.** ☑ A secondary containment basin shall protect the aqueous ammonia storage tank. Condition **HAZ-4.**		
Site Security	**MITIGATION**	**None**	**YES**
	In order to ensure that this facility or a shipment of hazardous material is not the target of unauthorized access, a Construction Security Plan and an Operations Security Plan will provide security for power plants to protect California's electrical infrastructure from malicious mischief, vandalism, or terrorist attacks. **MITIGATION:** ☑ At least 30 days prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. Condition **HAZ-7** ☑ In order to determine the level of security appropriate for this power plant, the project owner shall prepare a Vulnerability Assessment and submit that assessment as part of the Operations Security Plan to the CPM for review and approval. Condition **HAZ-8**		

HAZARDOUS MATERIALS – GENERAL

The purpose of this analysis is to determine if the proposed project has the potential to cause significant impacts on the environment as a result of the use, handling, storage, or transportation of hazardous materials at the proposed facility. Several factors determine the potential for an accidental release of a hazardous material to cause public health impacts. These include local meteorology, terrain characteristics, and location of population centers and sensitive receptors relative to the project.

Aqueous ammonia (19.5% ammonia in aqueous solution) is the only hazardous material proposed to be used or stored at the Starwood in quantities exceeding the reportable amounts defined in the California Health and Safety Code, section 25532(j). Aqueous ammonia will be used for controlling oxides of nitrogen (NO_x) emissions through selective catalytic reduction. Other hazardous materials such as mineral and lubricating oils, and cleaning chemicals will be present at the proposed facility. Although no natural gas is stored, the project will also involve the handling of large amounts of natural gas. Natural gas will be delivered through a new 6-inch pipeline, 200 feet of which would be installed offsite and 600 feet installed onsite along the west perimeter. (FSA 4.4-1)

During the construction phase of the project, hazardous materials proposed for use include paint, paint thinner, cleaners, solvents, adhesives, gasoline, diesel fuel, motor oil, and lubricants. No acutely toxic hazardous materials will be used onsite during construction. Any impact of spills or other releases of these materials will be limited to the site due to the small quantities involved, the infrequent use and hence reduced chances of release, and/or the temporary containment berms used by contractors. Petroleum hydrocarbon-based motor fuels, mineral oil, lube oil, and diesel fuel are all of very low volatility and represent limited off-site hazard even in larger quantities. (FSA 4.4-7)

Transportation

Hazardous materials, including aqueous ammonia, compressed gases, waste oil, and cleaning chemicals, will be transported to the facility via truck or tanker truck. While many types of hazardous materials will be transported to the site, transport of aqueous ammonia poses the predominant risk associated with hazardous materials transport.

The hazardous materials transportation route will be selected to use the shortest route possible, which would be Interstate-5 to West Panoche Road to the Starwood site, which minimizes off-freeway travel distance (about 2 miles in total) in accordance with Vehicle Code sections 31303-31309. This route passes one residence located on West Panoche Road. Delivery of hazardous materials will comply with DOT, DMV, and CHP regulations. (FSA 4.4-12)

Aqueous ammonia will be delivered to the proposed facility in U.S. DOT certified vehicles with design capacity of 6,000 gallons. These are high integrity vehicles designed for hauling of caustic materials such as aqueous ammonia. These vehicles

will be designed to U.S. DOT Code MC-306 or MC-307, regardless of which vendor supplies the aqueous ammonia. (FSA 4.4-13)

The maximum usage of aqueous ammonia will require three tanker truck deliveries of aqueous ammonia per year, each delivering about 6,000 gallons. Each delivery will travel approximately 2 miles from Interstate 5 to the facility along West Panoche Road. This would result in about 6 miles of delivery tanker truck travel in the project area per year (with a full load). 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 one million. The risk to the public of exposure to significant concentrations of aqueous ammonia during transportation to the facility are insignificant because of the remote possibility of accidental release of a sufficient quantity to present a danger to the public combined with the already diluted concentration of the aqueous ammonia being transported. (FSA 4.4-13)

MITIGATION:

- ☑ The Project Owner shall implement a Safety Management Plan for the delivery of aqueous ammonia. Condition **HAZ-3**.
- ☑ The Project Owner shall direct all vendors delivering aqueous ammonia to use tanker trucks meeting or exceeding federal Department of Transportation regulations. Condition **HAZ-5**.
- ☑ The Project Manager shall direct all hazardous materials deliveries over approved routes selected for safety. Condition **HAZ-6**.

Storage & Use

Aqueous ammonia (19 percent ammonia in aqueous solution) is the only hazardous material proposed to be used or stored at the SPP in quantities exceeding the reportable amounts defined in the California Health and Safety Code, section 25532(j). Aqueous ammonia will be used for controlling oxides of nitrogen (NO_x) emissions through selective catalytic reduction. The use of aqueous ammonia significantly reduces the risk that would otherwise be associated with use of the more hazardous anhydrous form of ammonia. Spills associated with the aqueous form are much easier to contain than those associated with anhydrous ammonia and emissions from such spills are limited by the slow mass transfer from the surface of the spilled material. Two aboveground storage tanks will be used to store the 19.5 percent aqueous ammonia, each with a maximum capacity of 12,000-gallon. (FSA 4.4-1, 8)

The potential for an accidental release of aqueous ammonia during transfer from the delivery tanker to the storage tank or the mistaken mixing of incompatible liquid hazardous materials is greatly reduced by the implementation of a safety management program, which includes the use of both engineering and administrative controls. The development of a Safety Management Plan addressing delivery of all liquid hazardous materials during construction, commissioning, and operations will further reduce the risk of any accidental release not addressed by the proposed spill prevention mitigation measures and the required RMP and prevent the mixing of incompatible materials that could result in the generation of toxic vapors. (FSA 4.4-10)

Additionally, the sparsely populated area immediately around the project site contributes to the lack of impact on off-site receptors should a hazardous materials spill occur on-site. The nearest sensitive receptor is a 5-plex located about 100 feet from the northern project fence line, but the Applicant has stated that these residents will be relocated prior to the initial delivery of aqueous ammonia to the site. (FSA 4.4-10)

MITIGATION:

- ☑ The Project Owner shall not store and use amounts of acutely hazardous materials in excess of quantities stated in the AFC. Condition **HAZ-1**
- ☑ The Project Owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority (CUPA) – Fresno County Environmental Health Division and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). Condition **HAZ-2**
- ☑ A secondary containment basin shall protect the aqueous ammonia storage tank. Condition **HAZ-4**

Although no natural gas is stored, the project will involve the handling of large amounts of natural gas. Natural gas will be delivered through an on-site 6-inch-diameter pipeline connecting to an existing PG&E line that serves the CalPeak Panoche facility. The risk of a fire and/or explosion on-site can be reduced to insignificant levels through adherence to applicable codes and development and implementation of effective safety management practices. The National Fire Protection Association (NFPA 85A) requires 1) the use of double block and bleed valves for gas shut-off; and 2) 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, thus precluding the presence of an explosive mixture. The Safety Management Plan proposed by the Applicant would address the handling and use of natural gas and significantly reduce the potential for equipment failure due to improper maintenance or human error. (FSA 4.4-7, 8)

Seismic Issues

The possibility exists that an earthquake would cause the failure of a hazardous materials storage tank. The earthquake could also cause the failure of the secondary containment system as well as valves and pumps. The failure of all these preventive control measures might then result in a vapor cloud of hazardous materials moving off-site and impacting the residents and workers in the surrounding community. The proposed facility will be designed and constructed to the applicable standards of the 2001 California Building Code and the 1997 Uniform Building Code. The site is within Seismic Zone 3, but the Applicant has stated that design and construction of the Starwood project will meet the requirements of the Uniform Building Code for Seismic Zone 4, the highest risk zone category. Based on the lack of failures during recent seismic events with newer tanks designed to standards similar to those in California, tank failures at the project site during seismic events are not probable and do not represent a significant risk to the public. (FSA 4.4-14)

Site Security

This facility proposes to use hazardous materials that have been identified by the US EPA as materials where special site security measures should be developed and implemented to ensure that unauthorized access is prevented. The energy generation sector is one of the 14 areas of Critical Infrastructure listed by the U.S. Department of Homeland Security. (FSA 4.4-14)

The Applicant has stated that a security plan will be prepared for the proposed facility, and will include a description of perimeter security measures, and procedures for evacuating, notifying authorities of a security breach, conducting site personnel background checks, and site access. Perimeter security measures utilized for this facility may include security guards, security alarms, breach detectors, motion detectors, and video or camera systems.

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 drivers properly licensed and trained. 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 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks. The Compliance Project Manager (CPM) may authorize modifications to these measures, or may require additional measures in response to additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electric Reliability Council, after consultation with appropriate law enforcement agencies and the Applicant. (FSA 4.4-14, 15)

MITIGATION:

- ☑ At least 30 days prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. Condition **HAZ-7.**
- ☑ In order to determine the level of security appropriate for this power plant, the project owner shall prepare a Vulnerability Assessment and submit that assessment as part of the Operations Security Plan to the CPM for review and approval. Condition **HAZ-8.**

Cumulative Impacts

There are three existing facilities and one planned facility in the project vicinity that may contribute to a hazardous materials cumulative impact. Existing facilities are the PG&E Panoche substation, located about 80 feet west of the proposed Starwood (actual structures are 250 feet away); the Wellhead Peaker Plant, which is adjacent to the

proposed Starwood site (actual structures are 120 feet away); and the CalPeak Panoche power plant, also adjacent to the proposed Starwood site (actual structures are 270 feet away). The proposed Panoche Energy Center, if approved, would be located about 500 feet southwest of the proposed Starwood.

Other facilities, although not in the immediate area, are under construction or planned in the general vicinity, including the Federal Bureau of Prison (BOP) medium security Federal Correctional Institution under construction near Mendota (12 miles), the San Joaquin Valley Energy Center, an approved, but unconstructed, 1,087 MW combined cycle plant, and the Bullard Energy Center, a 200 MW natural gas peaker, in the City of Fresno (licensing process suspended).

The chemical with the most potential to cause a cumulative impact is aqueous ammonia. Previous staff assessments that included air dispersion modeling of cumulative impacts have found that cumulative impacts from simultaneous releases of hazardous materials are only significant if the releases are very close to each other, a distance of less than ¼ mile (<1320 feet). Therefore, the Federal prison, the San Joaquin Energy Center, and the Bullard Energy Center are removed from further consideration. With the exception of the PG&E substation, all remaining facilities mentioned above either currently use and store ammonia on site or would do so if approved and are within 500 feet of each other and thus have the potential to cause a cumulative impact. However, the SPP, with the Conditions of Certification, poses a minimal risk of accidental release that could result in offsite impacts. It is unlikely that an accidental release that has very low probability of occurrence (about one in one million per year) would independently occur at the Starwood site and another facility – even two other facilities - at the same time. Furthermore, there would be even less possibility for simultaneous off-site plumes from other facilities to merge and cause a significant off-site cumulative impact where individually no significant off-site impact exists because of the spill containment controls used at the CalPeak Panoche Power Plant and those planned for the Starwood Peaking Project. Therefore, the proposed Starwood facility would not contribute to a significant cumulative impact. (FSA 4.4-16)

Finding

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

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in the Application for Certification, or in greater quantities than those set forth in the AFC, unless approved in advance by the Compliance Project Manager (CPM).

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials and storage quantities contained at the facility.

HAZ-2 The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority (CUPA) – Fresno County Environmental Health Division and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). After receiving comments from the CUPA, the EPA, and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final Business Plan and RMP shall then be provided to the CUPA and EPA for information and to the CPM for approval.

Verification: At least 60 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Business Plan to the CPM for approval. At least sixty (60) days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the CUPA for information and to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan (SMP) for delivery of aqueous ammonia and other liquid hazardous materials and an Emergency Response Plan (ERP) that addresses actions to take in the event of a spill of hazardous materials. These plans shall be submitted to the CPM for review and approval. The SMP 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. The ERP shall include emergency response procedures, spill containment and prevention systems, personnel training, spill notification, and cleanup procedures. These plans shall be applicable during construction, commissioning, and operation of the power plant.

Verification: At least sixty (60) days prior to the first delivery of any liquid hazardous material to the facility, the project owner shall provide a SMP and an ERP 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 for review and approval.

Verification: At least sixty (60) days prior to delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the CPM for review and approval.

HAZ-5 The project owner shall direct, in writing, all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles that meet or exceed the specifications of U.S. DOT Code MC-307.

Verification: At least sixty (60) days prior to the first receipt of aqueous ammonia on site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-6 The project owner shall direct, in writing, all vendors delivering any hazardous material to the site to use only the route approved by the CPM (from Interstate 5, to West Panoche Road, to the project site). The project owner shall submit any desired change to the approved delivery route to the CPM for review and approval.

Verification: At least sixty (60) days prior to receipt of any hazardous materials on site, the project owner shall submit copies of the required transportation route limitation direction to the CPM for review and approval.

HAZ-7 At least 30 days prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following:

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

Verification: At least thirty (30) days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

HAZ-8 The project owner shall also prepare a site-specific Security Plan for the operational phase and shall be made available to the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented will be determined by the results of the Vulnerability Assessment but in no case shall the level of security be less than that described as below (as per NERC 2002).

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence or wall, at least 8 feet high;
2. Main entrance security gate, either hand operable or motorized;
3. Evacuation procedures;
4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;

5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;

6. 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 ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law 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 contractor personnel that 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 conformity 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 present 24 hours per day, 7 days per week.

    or

    a. Surveillance and warning devices able to be viewed in the control room and from a remote location that include:

       1. The CCTV monitoring system required in number 9 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have low-light capability, are recordable, and are able to view 100 percent of the perimeter fence, the ammonia storage tank, the outside entrance to the control room, and the front gate, **and**

       2. Perimeter breach detectors **or** on-site motion detectors.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the security plans. The CPM

may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power pant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with 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 Vulnerability Assessment and Operations Site Security Plan are 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 updated certification statements are 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.

HAZARDOUS MATERIALS

APPLICABLE LAW	DESCRIPTION
FEDERAL	
The Superfund Amendments and Reauthorization Act of 1986 (42 United States Code (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)	Establishes a nationwide emergency planning and response program and imposes 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 the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq.
49 Code of Federal Regulations Parts 172-800 (49 CFR 172-800)	U.S. Department of Transportation (U.S. DOT) requirement that suppliers of hazardous materials prepare and implement security plans.
49 CFR Part 1572, Subparts A and B	Requires suppliers of hazardous materials to ensure that all their hazardous materials drivers are in compliance with personnel background security checks.
The Clean Water Act (CWA) (40 CFR 112)	Aims to prevent the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Requires a written Spill Prevention, Control, and Countermeasures (SPCC) plan to be prepared for facilities that store oil that my leak into navigable waters.
49 CFR Part 190	Outlines gas pipeline safety program procedures.
49 CFR Part 191	Addresses transportation of Natural and Other Gas by Pipeline: Annual Reports, Incident Reports, and Safety-Related Condition Reports, requires operators of pipeline systems to notify the U.S. Department of Transportation of any reportable incident by telephone and then submit a written report within 30 days.
49 CFR Part 192	Addresses transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards, specifies minimum safety requirements for pipelines and includes material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land uses that characterize the surrounding land. This part also contains regulations governing pipeline construction that must be followed for Class 2 and Class 3 pipelines, and requirements for preparing a Pipeline Integrity Management Program

Clean Water Act (40 CFR 112)	Requires preparation of an SPCC plan if oil is stored above TQ.
SARA Title III, Section 302	Requires certain planning activities when EHSs are present in excess of TQ. Aqueous ammonia to be used onsite in excess of TQ.
SARA Title III, Section 311	MSDSs to be kept onsite for each hazardous material. Required to be submitted to SERC, LEPC and local fire department.
SARA Title III, Section 313	Requires annual reporting of releases of hazardous materials.
49 CFR 171-177	Governs the transportation of hazardous materials, including the marking of the transportation vehicles.
STATE	
The California Health and Safety Code, section 25534 and Title 19, California Code of Regulations (Cal Code Regs.) Section 2770.5	Directs facility owners, storing or handling regulated substances (formerly called "acutely hazardous materials") in reportable quantities, to develop a Risk Management Plan (RMP) and submit it to appropriate local authorities, the United States Environmental Protection Agency (EPA), and the designated local administering agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This new, recently developed California Accidental Release Prevention Program (CalARP) supersedes the California Risk Management and Prevention Plan (RMPP).
Title 8, Cal. Code Regs., Section 5189	Requires facility owners to develop and implement effective safety management plans to insure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.
Title 8, Cal. Code Regs., Section 458 and Sections 500 to 515	Set forth requirements for design, construction and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the American Society for Material Engineering (ASME) Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1 and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia.
California Health and Safety Code, section	Requires that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material

41700	which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)	Prevents certain chemicals that cause cancer and reproductive toxicity to be discharged into sources of drinking water.
LOCAL	
Fresno County Environmental Health Division	The administering agency for the RMP and HMBP; requires new/modified businesses to complete these plans prior to final permit approval.

LAND USE – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
General/Special Plans/ Zoning	**CONDITION**	**None**	**YES**
	The Fresno County General Plan land use and zoning designations within one mile of the project are Agriculture and AE-20, respectively. A non-agricultural use which provides a public benefit to the surrounding community or larger area, such as sewage treatment plants, solid waste disposal, wireless communication facilities and electrical substations is allowed. The parcel also requires a Williamson Act cancellation. **CONDITION:** ☑ The Project Owner shall design and construct the project to the design standards in the Development Plan Standards of Fresno County's Development Guidelines (County Ordinance sections 816.5 and 874). Condition: **LAND-2** ☑ The Project Owner shall provide a copy of Fresno County's final Certificate of Cancellation of the Williamson Act contract. Condition" **LAND-3**		
Existing/ Planned Uses	**MITIGATION**	**None**	**YES**
	While the proposed project is located in an area dominated by agriculture, there are three existing energy uses within one-half mile of the proposed SPP: Since agricultural land is being converted to nonagricultural uses, the project owner shall mitigate for the loss of 6.16 acres of prime farmland. **MITIGATION:** ☑ The Project Owner shall mitigate for the permanent loss of 6.16 acres of prime farmland at a 1:1 ratio. Condition: **LAND-1**		

LAND USE - GENERAL

Land uses are controlled and regulated by a system of plans, policies, goals, and ordinances that are adopted by the various jurisdictions with land use authority over the area encompassed by the proposed project.

The Applicant proposes to build the SPP on a 6.16-acre portion of a 128-acre parcel in the northwestern section of the Westside Valley Area in Fresno County. The closest community to the project is Mendota, located 16 miles to the east and northeast. The nearest roadway intersections to the site are West Panoche Road and South Fairfax Avenue. Interstate-5 is about two miles southwest of the site. (FSA 4.5-2)

In April 2007, the Fresno County Board of Supervisors approved the request for cancellation of the 6.16-acre project site from the Williamson Act contract within Fresno

County Agricultural Preserve No. 367. Fresno County has issued its Certificate of Tentative Cancellation on the 6.16-acre site and expects to issue the Certificate of Partial Cancellation of Agricultural Land Conservation Contract No. 367 when and if the Energy Commission licenses the SPP. Until such time, the 6.16-acre project site is still considered a portion of the 128-acre contracted parcel. (FSA 4.5-2)

The proposed project would be located in an area of large agricultural parcels that are also under Williamson Act contracts. The Assessors Parcel Number (APN) for the 128-acre parcel is 027-060-78S. The project site is designated Agriculture by the Fresno County General Plan Agriculture and Land Use Element; the zoning designation is AE-20 (Exclusive Agriculture with a 20-acre minimum parcel size). The project site is not farmed and is currently used as a storage yard and contains a five-plex housing unit that is used to house farm workers. The construction laydown area is directly north of the project site.

Offsite improvements required by the SPP would include a 300-foot electrical transmission line that would tie into the existing CalPeak generator tie line, either a 1,200-foot underground water pipeline to the existing CalPeak well or a 2-mile pipeline to Baker Farms, and an 800-foot gas transmission line to the existing PG&E gas trunkline. (FSA 4.5-3)

General Plan and Zoning

The general plan land use and zoning designations within one mile of the subject parcel are Agriculture and AE-20, respectively. Although not Prime Farmland as shown on the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP), the USDA Natural Resources Conservation Service Web Soil Survey shows the site as Prime Farmland, if irrigated. The project site is mapped Urban and Built-Up Land by the FMMP. As stated on the Department of Conservation's (DOC) website, "urban and built-up land must contain man-made structures or buildings under construction and the infrastructure required for development (e.g., paved roads, sewers, water, electricity, drainage, or flood control facilities) that are specifically designed to serve that land." As shown in the AFC, the 6.16-acre site contains no infrastructure that would specifically serve the site. (FSA 4.5-2, 3)

Both the FMMP and the USDA Natural Resources Conservation Service Web Soil Survey show land in the vicinity of the site as Prime Farmland. Other than agriculture, farm residences, and related buildings, land uses in the immediate vicinity of the proposed project include the PG&E Panoche Substation, the CalPeak Peaker Plant, and the Wellhead Power Generation facility. (FSA 4.5-3)

Fresno County's General Plan Agriculture and Land Use Element provides in Policy LU-A.3 that the county may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally related activities including value-added processing facilities, and certain non-agricultural uses listed in Table LU-3. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria:

- The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;
- The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;
- The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least 1/4-mile radius; and
- A probable workforce should be located nearby or be readily available. (FSA 4.5-6)

Fresno County provided its General Plan Conformity Determination supporting its determination that the project complies with the General Plan:

> Policy LU-A.3 states that the County shall allow special agricultural uses, agriculturally related activities, and certain non-agricultural uses listed in areas designated Agriculture. Table LU-3 lists typical uses allowed in areas designated Agriculture. Approval of those and similar uses is subject to a determination that certain criteria can be met. This list is not intended to be inclusive of all uses that can be considered for development. The proposed power generating facility is similar to other allowed uses which provide a needed service to the surrounding community or the larger area. Table LU-3 includes uses which provide a public benefit to the surrounding community or larger area, such as sewage treatment plants, solid waste disposal, wireless communication facilities and electrical substations.

The Determination also provides a discussion of how the SPP sufficiently meets the four bulleted criteria in Policy LU-A.3 of the Fresno County Agriculture and Land Use Element and concludes by stating:

> It has been determined that the proposed power generating facility is similar to other non-agricultural uses listed in Table LU-3 of the Fresno County General Plan. Further, the Starwood Power-Midway facility meets the criteria for allowing such a use as described in Policy LU-3.A of the General Plan. The development of the proposed use on the subject property is consistent with the Fresno County General Plan…This determination was supported by the Board of Supervisors on April 24, 2007, when the request for partial cancellation of Agricultural Land Conservation Contract No.267 was approved.

Fresno County's General Plan Conformity Determination for the SPP addresses concerns regarding the SPP's conformity with the Fresno County General Plan. Therefore, the Energy Commission defers to Fresno County's position that the proposed project is consistent with its General Plan Agriculture and Land Use Element. (FSA 4.5-9)

The SPP site is zoned AE-20. The AE-20 District "is intended to be an exclusive district for agriculture and those uses which are necessary and an integral part of the agricultural operation. This district is intended to protect the general welfare of the agricultural community from encroachments of non-related agricultural uses which by their nature would be injurious to the physical and economic well-being of the agricultural district." Section 816 lists the uses permitted, the uses permitted subject to director review and approval, the uses permitted subject to a conditional use permit, uses expressly prohibited, and the property development standards. The list of uses for this zone shows that power plants are not expressly listed as a permitted or conditional use. (FSA 4.5-11)

According to Fresno County staff, each zone district in Fresno County has a list of uses allowed by right and uses allowed through a discretionary permit such as a Director Review and Approval, or a Conditional Use Permit, which may be classified or unclassified. The AFC states that Fresno County would ordinarily require an unclassified conditional use permit for a use such as the SPP. Regarding the issue of the unclassified use permit, Fresno County provides the following information in its Determination:

> For proposed power generating facilities with a net generating capacity of less than 50 MW, the proposed project requires approval from Fresno County. In those instances, an Unclassified Conditional Use permit is required to be submitted for review and for a determination before the Fresno County Planning Commission and/or Board of Supervisors. In this case, because the proposed project would have a net generating capacity of 120 MW, an Unclassified Conditional Use Permit was determined to not be required.

Fresno County's Determination seems to state that because the SPP would be a 120 megawatt (MW) facility, the County would not have jurisdiction and therefore could not require an Unclassified Conditional Use Permit. While it is true that the Energy Commission has exclusive authority to license all new or modified power plant facilities 50 MW or greater, to determine LORS compliance, Energy Commission staff has attempted to have Fresno County provide any project-specific conditions it would normally include in an Unclassified Conditional Use Permit, was it the permitting agency. (FSA 4.5-11)

Based on our review of Fresno County's General Plan Determination for the SPP and because as conditioned, the SPP would meet the development standards of the AE-20 zone, the Energy Commission will defer to the County's determination that the proposed project is consistent with Fresno County's AE-20 zoning designation. (FSA 4.5-11)

CONDITION:

- ☑ The Project Owner shall design and construct the project to the design standards in the Development Plan Standards of Fresno County's Development Guidelines (County Ordinance sections 816.5 and 874). Condition: **LAND-2**

☑ The Project Owner shall provide a copy of Fresno County's final Certificate of Cancellation of the Williamson Act contract. Condition" **LAND-3**

Existing/Planned Uses

While the proposed project is located in an area dominated by agriculture, there are three existing energy uses within one-half mile of the proposed SPP: the Wellhead Peaker Plant; the CalPeak Peaker Plant; and the PG&E Substation. The two peaker plants (both under 50 MW) were approved by Fresno County within the last few years. Another proposed energy facility, the Panoche Energy Center (06-AFC-5) would be located south of the existing electrical generating uses and PG&E Substation, on the same 128-acre parcel as the SPP. Given the existing cluster of energy/industrial uses, development of the proposed site as an energy/industrial use would continue the trend toward industrial development in the immediate area and would not result in a physical division or disruption of the established agricultural community. No new physical barriers would be created by the project and no existing roadways or pathways would be blocked that would be considered detrimental to agricultural use. (FSA 4.5-12)

Agricultural Land Conversion

The 6.16-acre project site consists of prime soils and would be considered by the FMMP and USDA as Prime Farmland, if irrigated. About five years ago, Starwood Power Midway, LLC graded the site and removed it from agricultural production. Starwood Power Midway, LLC's intent at that time was to develop a natural gas-fired power plant on the site. However, the site has since served as a storage yard for peaking unit equipment. As stated above, Fresno County has issued its Certificate of Tentative Cancellation on the 6.16-acre site and expects to issue the final Certificate of Partial Cancellation of Agricultural Land Conservation Contract No. 367 when and if the Energy Commission licenses the SPP. Until such time, the 6.16-acre project site is still considered a portion of the 128-acre parcel that is mapped by the FMMP as Prime Farmland and under a Williamson Act contract. For these reasons, Energy Commission staff felt more comfortable using an objective, quantitative assessment tool when addressing the conversion of agricultural resources to nonagricultural uses. As such, staff used the LESA model to determine whether the project's conversion of the 6.16 acres would be significant.

CEQA Guidelines Appendix G provides that lead agencies may refer to the LESA model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. The LESA model provides an approach for rating the relative quality of land resources based upon specific measurable features. (FSA 4.5-12)

Staff determined the final LESA score to be 80 points, whereas a score between 80 and 100 points is significant. Thus, as in other Energy Commission siting projects (Tesla, Salton Sea, East Altamont) where agricultural land was converted to nonagricultural uses, the project owner shall mitigate for the loss of 6.16 acres of prime farmland at a one-to-one ratio in order to render the impact to agricultural resources less than significant. (FSA 4.5-13)

MITIGATION:

- ☑ The Project Owner shall mitigate for the permanent loss of 6.16 acres of prime farmland at a 1:1 ratio. Condition: **LAND-1**

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, section 15130.)

Both the SPP and the PEC (06-AFC-5) would be situated in an area dominated by large agricultural parcels under Williamson Act Contracts. As with the SPP, staff used the LESA model to determine whether the PEC would have a significant land use impact. Staff's analysis showed that the PEC also would have a significant impact on agricultural resources. To mitigate this impact from the PEC, staff proposed a similar compensatory plan. As conditioned, the SPP and the PEC would not contribute to a cumulative loss of agricultural land from conversion to nonagricultural uses. (FSA 4.5-14)

In addition to the two proposed energy projects, existing land uses in the immediate vicinity (other than agriculture, farm residences, and related buildings), include the PG&E Panoche Substation, the CalPeak Peaker Plant, and the Wellhead Power Generation facility. The CalPeak Peaker Plant and the Wellhead Power Generation facility were permitted by Fresno County within the last few years. Since the proposed project is situated near other nonagricultural industrial/energy uses, it would not result in a physical division or disruption of the established agricultural community, no new physical barriers would be created by the project, and no existing roadways or pathways would be blocked that would be detrimental to agricultural uses. (FSA 4.5-14)

Findings

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

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall mitigate for the permanent loss of 6.16 acres of prime farmland at a one-to-one ratio.

Verification: The project owner shall provide a mitigation fee payment to a Fresno County agricultural land trust or a statewide agricultural land trust at least 30 days prior to the start of construction. The fee payment will be determined by Fresno County and the project owner and set forth in a prepared Farmlands Mitigation Agreement (FMA), also determined between the project owner and Fresno County. The project owner shall provide a copy of the FMA to the Compliance Project Manager (CPM) for approval at

the time of fee payment submittal. The FMA will require that 6.16 acres of prime farmland and/or easements shall be purchased within five years of start of construction as compensation for the 6.16 acres of prime farmland to be converted by the SPP. The FMA shall guarantee that the land managed by the trust will be located in Fresno County and will be farmed in perpetuity. The project owner shall provide to the CPM updates in the Annual Compliance Report on the status of farmland/easement purchase(s).

LAND-2 The project owner shall design and construct the project to the applicable development standards in Sections 816.5 and 874 of the Fresno County Ordinance Code.

(1) Any access gate shall be setback a minimum of 20 feet (or the length of the longest vehicle to initially enter the site from the edge of the ultimate road right-of-way.

(2) The number of parking spaces required as part of this project shall be one space for every permanent employee, one space for each sales person, and one space for each company vehicle for a total of 2 spaces.

(3) Each lot shall have a front yard of not less than 35 feet extending across the full width of the lot; each lot shall have a side yard on each side of not less than 20 feet.

Verification: At least sixty (60) days prior to the start of construction the project owner shall submit to the Compliance Project Manager (CPM) written documentation including evidence of review by Fresno County that the project conforms to the standards in Sections 816.5 and 843 of the Fresno County Ordinance Code.

LAND-3 The project owner shall provide a copy of Fresno County's Final Certificate of Cancellation of Contract from Agriculture Preserve No. 367.

Verification: At least 60 days prior to construction, the project owner shall submit to the CPM a copy of Fresno County's Final Certificate of Cancellation of Contract from Agriculture Preserve No. 367.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

LAND USE

APPLICABLE LAW	DESCRIPTION
FEDERAL	The proposed project is not located on federally administered lands and is not subject to federal land use regulations.
STATE	
Subdivision Map Act (Pub. Resources Code § 66410-66499.58),§ 66412.1	The Subdivision Map Act provides procedures and requirements regulating land divisions and the determination of parcel legality. Section 66412.1 of the Subdivision Map Act exempts a project from state subdivision requirements provided that the project demonstrates compliance with local ordinances regulating design and improvements.
California Land Conservation Act (Gov. Code § 51200-51297.4)	Section 51282 addresses Williamson Act Contract cancellation procedures. In order for a contract to be cancelled, the local elected officials (e.g. a City Council or a County Board of Supervisors) need to make a series of findings and approve the cancellation.
LOCAL	
Fresno County General Plan and Zoning Ordinance	Fresno County would require an unclassified conditional use permit for the proposed project in the A-E 20 Zone.

NOISE – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Loudness/ Time of Day	**MITIGATION**	**None**	**Yes**

Construction: Construction activities will cause temporary noise which is significantly above daytime ambient levels at at the nearest residence.

MITIGATION:

- ☑ The Project Owner shall notify neighboring residents and business owners of impending construction at the power plant site and disseminate a telephone "hotline" number to report any undesirable noise conditions. Condition: **NOISE-1**.
- ☑ The Project Owner shall create a noise complaint process through which it will attempt to resolve all noise complaints. Condition: **NOISE-2**.
- ☑ The Project Owner will fully execute its agreement with the owner of the five-plex residence to relocate its occupants prior to noisy construction. Condition **NOISE-5**.
- ☑ The Project Owner shall comply with construction time-of-day restrictions. Condition: **NOISE-7**.

Operation: During its operation, the generating facility will represent essentially a steady, continuous noise source. The noise emitted by power plants during normal operations is generally broadband, steady state in nature. Occasional short-term increases in noise level will occur as relief valves open to vent air pressure, or during start-up or shutdown, as the plant transitions to and from steady-state operation. Routine operation will be afternoons during hot weather episodes.

MITIGATION:

- ☑ The Project Owner shall maintain a telephone "hotline" number to report any undesirable noise conditions for at least one year after operation begins. Condition: **NOISE-1**.
- ☑ The Project Owner shall create a noise complaint process through which it will attempt to resolve all noise complaints. Condition: **NOISE-2**.
- ☑ The Project Owner will not cause noise levels attributable to plant operation, during the four quietest consecutive hours of the nighttime, to exceed and average of 49 dBA measured at monitoring locations M2 and M4. Condition: **NOISE-4**.

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	POWER PLANT SITE	CUMULATIVE IMPACTS	LORS COMPLIANCE
Worker Noise:	**MITIGATION**	**None**	**Yes**
	Power plant noise can damage workers' hearing if not properly managed. **MITIGATION:** ☑ The Project Owner will implement a noise control program for employee noise exposure. Condition: **NOISE-3**. ☑ The Project Owner shall conduct an occupational noise survey and take action based upon its results. Condition: **NOISE-5**.		
Vibration	**Insignificant**	**None**	**YES**
	The primary source of vibration noise associated with a power plant is the operation of the turbines. It is anticipated that the plant's turbines will be maintained in optimal balance to minimize excessive vibration that can cause damage or long term wear. Consequently, no excessive vibration would be experienced by adjacent land uses.		

NOISE – GENERAL

The construction and operation of any power plant creates noise and sound. Construction noise is a temporary phenomenon. Construction noise levels heard offsite would vary from hour to hour and day to day, depending on the equipment in use and the operations being performed.

The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the facility to any sensitive receptors are combined to determine whether the facility will meet applicable noise control laws or cause any significant noise impacts.

Sound associated with the operation of the project will be produced by the inlets, outlets, structures, motors, pumps and fans associated with the gas turbines, the electric generators, and the transformers. Essentially, project equipment will operate continuously and produce a steady sound. Occasional short-term noise level increases will occur during plant start-up or shut down, during load transitions, and during opening of release valves for venting air pressure. At other times, the plant will be shut down, producing less or no noise.

The proposed power plant will be built on a 5.6-acre parcel, located in an unincorporated area of western Fresno County, approximately 15 miles southwest of the city of Mendota. Surrounding land uses are generally agricultural, with some residential use. The predominant noise sources in the area include vehicular noise from automobiles and agricultural equipment and industrial noise from mechanical equipment and processes at the existing CalPeak Power Project, Wellhead Peaker Plant and Pacific Gas & Electric (PG&E) substation. Sensitive residential properties in the vicinity

of the project include structures located north, northeast, and west of the site. (FSA 4.6-4.)

Loudness/Time of Day

"Before" Noise Surveys:

In order to establish a baseline for comparison of predicted project noise to existing ambient noise, the Applicant has presented the results of an ambient noise survey. The noise survey monitored existing noise levels at the following three locations:

- Location **M1**: The residential building north of the site is a multiplex with five units, approximately 460 feet from the center of the SPP.
- Location **M2**: Three single-family residential structures to the west of the site, in a row from east to west. The center building is inhabited; the other two appear to be uninhabitable. These buildings are approximately 1,600 feet from the center of the SPP.
- Location **M3**: A single-family residential structure to the northeast, approximately 1,300 feet from the center of the site. (FSA, 4.6-6)

Construction:

Construction noise is usually considered a temporary phenomenon. Sensitive receptors near the plant site could be affected by noise from these activities. Construction of an industrial facility such as a power plant is typically noisier than permissible under usual noise ordinances. In order to allow the construction of new facilities, construction noise during certain hours of the day is commonly exempt from enforcement by local ordinances. The Applicant commits to performing noisy construction work during the

daytime hours between 6:00 a.m. and 9:00 p.m. on any day except Saturdays and Sundays, and between 7:00 a.m. and 5:00 p.m. on Saturdays and Sundays. This would be in compliance with the noise ordinance of the Fresno County Code. (FSA 4.6-7)

Since construction noise typically varies continually with time, it is most appropriately measured by, and compared to, the L_{eq} (energy average) metric. Staff regards an increase of up to 5 dBA as a less than significant impact. An increase between 5 and 10 dBA should be considered adverse, but may be either significant or insignificant depending on the particular circumstances of a case, such as the duration and frequency of the noise, the resulting noise level, and land use designation of the affected receptor.

Construction noise at the residential units near monitoring location **ML1** may reach 70 dBA. The ambient daytime L_{eq} level at this location is 63 dBA. The addition of the highest construction noise to the ambient would result in 71 dBA, an increase of 8 dBA over the ambient level. The Applicant and the landowner of the five-unit multiplex have signed an agreement to relocate the current occupants to a more distant location prior to start of noisy construction activities. The execution of this agreement, verified by Condition of Certification **NOISE-5** will assure no construction noise impacts to the **ML1** residents. In the event that actual construction noise should annoy nearby workers or residents, Conditions of Certification **NOISE-1** and **NOISE-2** establish a noise complaint process that requires the applicant to resolve any problems caused by construction noise. (FSA 4.6-9)

The ambient daytime L_{eq} noise level at **ML2**, or 46 dBA, when added to the highest construction noise at this location, or 58 dBA, results in 58 dBA L_{eq}, an increase of 12 dBA over the existing ambient level. Panoche Energy Center, LLC recently filed an Application for Certification with the California Energy Commission to construct and operate the Panoche Energy Center (PEC). The center of the PEC site would be approximately 800 feet from **ML2**. The PEC Applicant has signed an agreement with the landowner of the residence at **ML2** to relocate the residents to a location that is approximately 4,000 feet north of the PEC site prior to start of the PEC's construction activities. (FSA 4.6-8, 9)

Construction of the PEC is scheduled to begin ahead of the SPP's construction. So, at the time construction of SPP begins, **ML2** will likely be unoccupied. At the new location, the above-projected SPP construction noise level would be substantially lower, about 50 dBA. This level would not likely create annoyance. Since relocating the residents at **ML2** would be done by the PEC Applicant, the Commission will not duplicate the relocation requirement for this Applicant. However, should circumstances result in the **ML2** residents not being relocated when SPP construction begins, this Applicant must ensure the project's construction noise levels create less than significant impacts at the noise-sensitive receptors. Conditions of Certification **NOISE-1** and **NOISE-2** establish a noise complaint process to resolve any complaints regarding construction noise.

The ambient daytime L_{eq} level at **ML3**, or 55 dBA, when added to the highest construction noise at this location, or 60 dBA, results in 61 dBA L_{eq}, an increase of 6 dBA over the existing ambient level. This increase is noticeable and can potentially

cause annoyance. Conditions of Certification **NOISE-1**, **NOISE-2**, and **NOISE-7** ensure that the construction noise would not cause annoyance at **ML3**. (FSA 4.6-9)

MITIGATION:

- ☑ The Project Owner will notify neighboring residents of impending construction at the power plant site and disseminate a telephone "hotline" number to report any undesirable noise conditions. Condition: **NOISE-1**.
- ☑ The Project Owner will create a noise complaint process through which it will attempt to resolve all noise complaints. Condition: **NOISE-2**.
- ☑ The Project Owner will fully execute its agreement with the owner of the five-plex residence to relocate its occupants prior to noisy construction. Condition **NOISE-5**.
- ☑ The Project Owner shall comply with construction time-of-day restrictions for noisy construction. Condition: **NOISE-7**.

New offsite linear facilities associated with SPP construction would include approximately 200 feet of gas pipeline and a gas metering set, which will tap into the PG&E gas line, a 300-foot electric transmission line to tie into the PG&E Substation, and either a 1,200-foot underground water pipeline connecting the project to the existing CalPeak plant well or 2-mile pipeline connecting to Baker Farms.

Construction of linear facilities typically moves at a rapid pace, thus not subjecting any one receptor to noise impacts for more than two or three days. Further, the noise ordinance of the Fresno County Code limits the hours of construction to daytime hours. The Applicant has committed to complying with this requirement.

It is anticipated that pile driving will be required for construction of the SPP. The Applicant has predicted noise levels from pile driving at the three noise monitoring locations. The predicted noise level from pile driving could reach 81 dBA L_{eq} at **ML1**. However, as described above, residents will be moved and no further mitigation will be necessary. The estimated pile driving noise levels are 69 dBA L_{eq} and 71 dBA L_{eq} at **ML2** and **ML3**, respectively. These levels are high and can cause annoyance at the above receptors. Staff has 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. The Applicant will employ quieter pile driving processes. **NOISE-8**.

MITIGATION:

- ☑ The Project Owner will employ a quieter pile driving technique. Condition: **NOISE-8**.

Operation: During its operating life, the generating facility will represent essentially a steady, continuous noise source. The noise emitted by power plants during normal operations is generally broadband, steady state in nature. Occasional short-term increases in noise level will occur as relief valves opening, or during start-up or shutdown, as the plant transitions to and from steady-state operation.

The primary noise sources of the SPP during operational activities include the gas turbine generators, gas turbine air inlets, exhaust stacks, air compressors, electrical transformers, selective catalytic reduction duct walls, and various pumps and fans.

The Applicant performed noise modeling to determine the project's operational noise impacts on sensitive receptors. Project operating noise is predicted to be 55 dBA at monitoring location **ML1** (the multiplex north of the project site), 42 dBA at monitoring location **ML2** (the residential receptor west of the project site), and 44 dBA at monitoring location **ML3** (the single-family residential receptor northeast of the project site). (FSA 4.6-12)

Power plant noise is unique. A power plant operates essentially as a steady, continuous, broadband noise source, unlike the intermittent sounds that comprise the majority of the noise environment. As such, power plant noise contributes to, and becomes part of, the background noise level, or the sound heard when most intermittent noises cease. Where power plant noise is audible, it will tend to define the background noise level. For this reason, Staff typically compares the projected power plant noise to the existing ambient background (L_{90}) noise levels at the affected sensitive receptors. The noise ordinance of the Fresno County Code establishes the applicable noise limits. To assess LORS compliance, Staff uses the lowest of these limits, or 45 dBA L_{50}, to evaluate the project's noise impact at the above receptors. (FSA 4.6-12, 13)

In most cases, a power plant will be intended to operate around the clock for much of the year. Nighttime operation of a peaking power plant such as the SPP, though rare, could occasionally occur, which could annoy nearby residents. For CEQA purposes, Staff evaluates project noise emissions by comparing them to the nighttime ambient background level; this assumes that the potential for annoyance due to power plant noise is greatest at night when residents are trying to sleep.

The predicted project noise level at **ML1**, or 55 dBA, when combined with the average ambient noise level of the four quietest consecutive hours of the nighttime at this location, or 44 dBA L_{50} would result in 55 dBA L_{50}. This is 10 dBA above the LORS limit of 45 dBA L_{50}, and thus violates County Code and causes a significant impact.

As explained above, the Applicant has signed an agreement to relocate the current residents to a more distant location. (Condition of Certification **NOISE-5)** If the Applicant relocates the residents to a location within 3,000 feet of the SPP project site, the SPP shall perform a noise monitoring survey during its operation at the new location. Staff believes that power plant noise would likely be inaudible one-quater mile or more from the project. If the survey indicates noncompliance with the noise LORS or significant impact at the new location, the SPP shall implement additional mitigation measures in order to bring the noise level into compliance (Condition of Certification **NOISE-5**). (FSA 4.6-13; 10/30/07 RT 11-14)

The Applicant has stated that after the construction and commissioning of the project, the project owner may wish to reevaluate the operational noise impact at **ML1** and convert the five-unit multiplex back to a residential use if the project owner can

demonstrate compliance with the LORS. To ensure the Applicant will comply with the above noise LORS, Condition of Certification **NOISE-5** requires the project owner to conduct a community noise survey at **ML1** after the start of operation if it wishes to convert the multiplex back to a residential use. The Condition further requires implementing any additional mitigation measures necessary to reduce the noise in order to comply with the LORS and CEQA requirements at **ML1**.

The predicted project noise level at **ML2**, or 42 dBA, when combined with the nighttime ambient level of 41 dBA L_{50}), would result in 45 dBA L_{50}, which is in compliance with the LORS limit of 45 dBA L_{50} and would not cause a significant impact.

The predicted project noise level at **ML3**, or 44 dBA, when combined with the nighttime ambient level of 41 dBA L_{50} at this location, would result in 46 dBA L_{50}. This is 1 dBA above the LORS limit. A 1 dBA increase is not audible and thus, the project's operational noise at **ML3** to be in compliance with the LORS requirement and not create a significant impact. To ensure the applicant will comply with the above noise LORS, staff proposes Condition of Certification **NOISE-4**.

MITIGATION

- ☑ The Project Owner will not cause noise levels attributable to plant operation, during the four quietest consecutive hours of the nighttime, to exceed an average of 49 dBA measured at monitoring locations M2 and M4. Condition: **NOISE-4** & **NOISE-5**.

Tonal Noises

One possible source of annoyance from a power plant would be strong tonal noises. Tonal noises are individual sounds (such as pure tones) that, while not louder than permissible levels, stand out in sound quality. The Applicant plans to address overall noise in design, and to take appropriate measures, as necessary, to eliminate tonal noises as possible sources of annoyance. Selecting or designing the appropriate measures depends on the individual equipment generating the tonal noise and the character of the noise generated. To ensure that tonal noises do not cause annoyance, Condition of Certification **NOISE-4** and **NOISE-5** require testing for tonal noise during full-load operation. (FSA 4.6-13, 14)

Worker Noise

Power plant noise can damage workers' hearing if not properly managed. The Applicant recognizes the need to protect plant operating and maintenance personnel from noise hazards, and has committed to comply with applicable LORS. Signs would be posted in areas of the plant with noise levels exceeding 85 dBA (the level that OSHA recognizes as a threat to workers' hearing), and hearing protection would be required. The Applicant would implement a comprehensive hearing conservation program. (FSA 4.6-14)

MITIGATION:

- ☑ The Project Owner will implement a noise control program for employee noise exposure. Condition: **NOISE-3**.
- ☑ The Project Owner shall conduct an occupational noise survey and take action based upon its results. Condition: **NOISE-7.**

Vibration

Vibration from an operating power plant could be transmitted by two chief means; through the ground (ground borne vibration), and through the air (airborne vibration). The operating components of a simple cycle power plant consist of high-speed gas turbines, compressors, and various pumps. All of these pieces of equipment must be carefully balanced in order to operate; permanent vibration sensors are attached to the turbines and generators. The Applicant explains that gas turbine generator facilities using the FT8 machine have not resulted in ground vibration impacts. Also, the noise-sensitive receptors are not sufficiently close to the project site to be affected by ground-borne vibration from the project equipment. (FSA 4.6-14)

Airborne vibration (low frequency noise) can rattle windows and objects on shelves, and can rattle the walls of lightweight structures. The SPP's chief source of airborne vibration would be the gas turbines' exhaust. In a power plant such as the SPP, however, the exhaust must pass through the SCR modules and the stack silencers before it reaches the atmosphere. The SCRs act as efficient mufflers; the combination of SCR units and stack silencers makes it highly unlikely that the project would cause perceptible airborne vibration effects. (FSA 4.6-13)

Cumulative Impacts

Section 15130 of the CEQA Guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts when a project's incremental effect is cumulatively considerable.

As described above, the proposed 400 MW PEC would be located west/southwest of the SPP. It would be approximately 1,900 feet from **ML1**, about 800 feet from **ML2**, and approximately 3,300 feet from **ML3**. The SPP, in combination with the PEC project, will result in increases in the project area ambient noise. (FSA 4.6-15)

The cumulative noise would result in a 14 dBA increase in the ambient noise level at ML1. However, as explained above, the current residents at **ML1** would be relocated to a new location not near the project site and any necessary noise mitigation measures would be implemented to comply with the above-identified noise LORS. Also, the above cumulative result is based on the assumption that both projects would be operating simultaneously during late night and early morning hours when L_{90} levels are lowest. Both of these are self-described peaker projects and would likely operate mostly during day time hours. Therefore, it is anticipated that both of the projects would rarely operate simultaneously for long periods of time during nighttime hours. Thus, the above cumulative impact would likely cause less annoyance than expected. (FSA 4.6-15)

The cumulative noise would result in a 19 dBA increase in the ambient noise level at **ML2**. However, as explained above, the residents at **ML2** would be relocated to approximately 4,000 feet away from the PEC site. At this distance, the cumulative noise level from these two projects would be substantially lower, approximately 45 dBA L_{50} or less This level of noise is considered tolerable and would not likely create significant impact. Alternatively, if the relocation does not occur, additional mitigation measures would need to be implemented to mitigate the impact to an acceptable level. (Condition of Certification **NOISE-4)**. At **ML3**, an increase of 5 dBA would result due to the cumulative impact. This increase is noticeable but it is not likely to create annoyance. (FSA 4.6-15, 16)

Other projects within the vicinity of the SPP include the CalPeak Power Plant and the Wellhead Peaker Project. These are, however, existing projects and their noise impacts have been accounted for in the above existing ambient noise measurements and therefore included in the above cumulative analysis. Staff is not aware of any other projects that, when combined with the SPP, would create significant direct cumulative noise impacts in the project area. (FSA 4.6-16)

Findings

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

CONDITIONS OF CERTIFICATION

NEIGHBORHOOD NOTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within one mile of the site and one-half mile of the linear facilities, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: Prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE COMPLAINT PROCESS

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

- use the noise complaint resolution form below, or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- attempt to contact the person(s) making the noise complaint within 24 hours;
- conduct an investigation to determine the source of noise related to the complaint;
- if the noise is project related, take all feasible measures to reduce the noise at its source; and
- submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts, and if obtainable, a signed statement by the complainant, stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file a copy of the noise complaint resolution form with the local jurisdiction and the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated noise complaint resolution form when the mitigation is implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program. The project owner shall make the program available to Cal-OSHA upon request.

NOISE RESTRICTIONS

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due to plant operation plus ambient, during the four quietest consecutive hours of the nighttime, to exceed an average of 45 dBA L_{50} as measured near monitoring locations ML2 (approximately 1,600 feet west of the center of the project site) and ML3 (43405 West Panoche Road).

No new pure-tone components may 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.

- 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 location ML2 or at a closer location acceptable

to the CPM. This survey during power plant operation shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

During the period of this survey, the project owner shall conduct a short-term survey of noise at monitoring location ML3, or at a closer location acceptable to the CPM. The short-term noise measurements shall be conducted during every hour of the nighttime hours, from 10 p.m. to 7 a.m., during the period of the survey.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

- If the results from the above noise survey indicate that the power plant noise level plus ambient (L_{50}) at the affected receptor sites exceeds the above value during the above specified time periods, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.
- 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 shall 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 this new noise survey, performed as described above and showing compliance with this condition.

NOISE-5 Prior to ground disturbance, the project owner shall fully execute its agreement with the landowner of the property at ML1 to relocate its residents to a location not near the project site. The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due to plant operation plus ambient, during the four quietest consecutive hours of the nighttime, to exceed an average of 45 dBA L_{50} as measured near this new location.

No new pure-tone components may 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.

- If the new location is within 3,000 feet of the project site, when the project first achieves a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct a short-term survey of noise at this new location or at a closer location acceptable to the CPM. The short-term noise measurements shall be conducted during every hour of the nighttime hours, from 10 p.m. to 7 a.m., during the period of the survey.
- If during the operating life of the project, the project owner plans to convert the five-unit multiplex at ML1 back to a residential use, the project owner shall repeat this survey at ML1 or at a closer location acceptable to the CPM, prior to any resident(s) occupying the multiplex.
- The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.
- If the results from any of the above noise surveys indicate that the power plant noise level plus ambient (L_{50}) at the affected receptor sites exceeds the above value during the above specified time period, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit. ML1 shall not be reoccupied (as explained above), unless the SPP can demonstrate compliance with this requirement at this location.
- If the results from the noise surveys indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement, signed by the project owner's project manager, stating that the residents in the property at ML1 have been relocated, and describing the new location and its distance to the project site.

The first noise survey shall take place within 30 days of the project first achieving a sustained output of 90 percent or greater of rated capacity. If the second survey is needed (as described above) it shall take place prior to the property at ML1 being reoccupied. Within 15 days after completing each of the surveys, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report shall be a description of any additional mitigation measures necessary to achieve compliance with the above-listed noise 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 (conducted after implementation of the above mitigation measures), the project owner shall submit to the CPM a summary report of this new noise survey, performed as described above and showing compliance with this condition.

NOISE-6 Following the project first achieving a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

CONSTRUCTION TIME RESTRICTIONS

NOISE-7 Heavy equipment operation and noisy construction work relating to any project features (including pile driving work) shall be restricted to the times delineated below, unless a special permit has been issued by the County of Fresno:

Any day except Saturdays and Sundays	6 a.m. to 9 p.m.
Saturdays and Sundays	7 a.m. to 5 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

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 ML2 and ML3.

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 ML2 and ML3.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

NOISE

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Occupational Safety and Health Act (OSHA): 29 U.S.C. § 651 et seq.	Protects workers from the effects of occupational noise exposure
STATE	
California Vehicle Code §23130 and 23130.5	Regulates vehicle noise limits on California Highways.
8 CCR §5095 et seq. (Cal-OSHA)	Sets employee noise exposure limits. Equivalent to Federal OSHA standards.
LOCAL	
Fresno County General Plan, Noise Element	Refers to the County of Fresno ordinance code for noise limits.
Fresno County Ordinance Code, Noise Control, section 8.40.040	Sets sound level limits at residences and outdoor activity areas.
Fresno County Ordinance Code, Noise Control, section 8.40.060	Restricts the hours of construction activities.

PUBLIC HEALTH – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS CONFORMANCE*
Construction Health Risks	**MITIGATION**	**None**	**YES**
	Possible construction-phase impacts include exposure to airborne dust from site grading and excavation, and diesel exhaust emissions from construction equipment. **MITIGATION:** ☑ The Project Owner shall prepare and implement construction fugitive dust control and airborne dust plume response plans. Conditions **AQ-SC3** & **AQ-SC4**. ☑ The Project Owner shall require its construction contractors to minimize emissions from diesel powered earthmoving equipment. Condition **AQ-SC5.**		
Cancer Risks	**Insignificant**	**None**	**YES**
	EPA-approved modeling used for health risk assessment from non-criteria air pollutants finds a maximum exposure to the highest level of carcinogenic project pollutants for 70 years has a cancer risk of 0.062 in a million, well below the 10 in a million benchmark for a potential health impact.		
Non-Cancer Risks	**Insignificant**	**None**	**YES**
	CAPCOA-approved modeling used for health risk assessment from non-criteria air pollutants finds an exposure to the highest level of non-carcinogenic project pollutants produces a chronic hazard index of 0.001 and an acute hazard index of 0.022, well below the threshold hazard index of 1.0, and thus not a significant health impact.		

PUBLIC HEALTH – GENERAL

Operating the proposed power plant would create combustion products and possibly expose the general public and workers to these pollutants as well as the toxic chemicals associated with other aspects of facility operations. The purpose of this public health analysis is to determine whether a significant health risk would result from public exposure to these chemicals and combustion by-products routinely emitted during project operations. The issue of possible worker exposure is addressed in the **WORKER SAFETY** section. Exposure to electric and magnetic fields (EMF) is addressed in the **TRANSMISSION LINE SAFETY AND NUISANCE** section.

The exposure of primary concern in this section is to pollutants for which no air quality standards have been established. These are known as non-criteria pollutants, toxic air

pollutants, or air toxins. Those for which ambient air quality standards have been established are known as criteria pollutants. The criteria pollutants are also identified in this section because of their potentially significant contribution to the total pollutant exposure in any given area. Furthermore, the same control technologies may be effective for controlling both types of pollutants when emitted from the same source.

Construction Health Risks

Possible construction-phase health impacts are those from human exposure to the windblown dust from site excavation and grading, and emissions from construction-related equipment. The dust-related impacts may result from exposure to the dust itself as PM10, or PM2.5, or exposure to any toxic contaminants that might be adsorbed by it. (FSA 4.7-8)

The Applicant has specified the mitigation measures necessary to minimize construction-related fugitive dust as required by SJVAPCD Rules 4201, 8021, 8061, and 8071. The only soil-related construction impacts of potential significance would result from the possible impacts of PM10, or PM2.5 as a criteria pollutant for the 10-month construction period. As mentioned earlier, the potential for significant impacts from criteria pollutants is assessed in the **AIR QUALITY** section where the requirements for the identified mitigation measures are presented as specific Conditions of Certification. (FSA 4.7-9)

The exhaust from diesel-fueled construction and other equipment has been identified as a potent human carcinogen. Thus, construction-related emission levels should be regarded as possibly adding to the carcinogenic risk of specific concern in this analysis. The control measures specified in Conditions of Certification **AQ-SC3** and **AQSC-4** are adequate to reduce the cancer risk during the relatively short (10-month) construction period to a level of insignificance. (FSA 4.7-9)

Cancer Risks

For SPP, a screening level risk assessment is initially performed using simplified assumptions intentionally biased toward protecting public health. That is, an analysis is designed that overestimates public health impacts from exposure to the emissions. In reality, it is likely that the actual risks from the project will be much lower than the risks estimated by the screening level assessment. This overestimation is accomplished by identifying conditions that would lead to the highest, or worst-case risks, and then assuming them in the study. (FSA 4.7-3)

The conservatism in these assessments is further reflected in the noted fact that (a) the individual considered is assumed to be exposed at the highest possible levels to all the carcinogenic pollutants from the project for a 70-year lifetime, (b) all the carcinogens are assumed to be equally potent in humans and experimental animals, even when their cancer-inducing abilities have not been established in humans, and (c) humans are assumed to be as susceptible as the most sensitive experimental animal, despite

knowledge that cancer potencies often differ between humans and experimental animals. Only a relatively few of the many environmental chemicals identified so far as capable of inducing cancer in animals have been shown to also cause cancer in humans. (FSA 4.7-12)

If the screening analysis were to predict a risk of no significance, no further analysis would be necessary. However, if the risk were to be above the significance level, further analysis, using more realistic site-specific assumptions would be performed to obtain a more accurate estimate of the public health risk in question. (FSA 4.7-5)

The Applicant's estimates of SPP's potential contribution to the area's carcinogenic and non-carcinogenic pollutants were obtained from a screening-level health risk assessment conducted according to procedures specified in the 1993 California Air Pollution Control Officers Association (CAPCOA) guidelines. (FSA 4.7-9)

A risk estimate of 0.062 in a million was calculated for all the project's carcinogens from this screening level analysis. This screening level estimate suggests that the project's cancer risk would be negligible and is significantly less than the 10 in a million which Staff considers as a trigger for recommending mitigation. This means that the proposed emission controls measures are adequate for the project's operations-related toxic emissions of primary concern in this analysis. (FSA 4.7-12)

Non-cancer Risk

The Applicant's health risk assessment also reviewed non-criteria pollutants with respect to non-cancer effects. A chronic hazard index of 0.001 was calculated for the project's non-carcinogenic pollutants considered together. The acute hazard index was calculated to be 0.022. These indices are well below the levels of potential health significance (hazard index 1.0), indicating that no significant health impacts would likely be associated with the project's non-criteria pollutants. (AFC 8.9-5; FSA 4.7-11)

Cumulative Impacts

The Applicant has provided a list of area projects with the potential to significantly contribute to total area exposure to the pollutants of concern in this analysis. The most important sources in this regard are the existing CalPeak Panoche Power, Wellhead Peaker, and the proposed Panoche Energy Center. The pollutants from the existing sources could be seen as contributing to the existing background levels thereby contributing to the normal background cancer and non-cancer impacts. The present approach to regulating this group of pollutants is to ensure that further additions from identifiable sources are maintained within insignificant levels. (FSA 4.7-12)

As previously noted, the maximum impact locations for the proposed SPP and similar sources would be the spot where pollutant concentrations would theoretically be highest. Even at this location, Staff does not expect any significant SPP-related changes in lifetime risk to any person, given the calculated incremental cancer risk of

only 0.062 in one million, which Staff regards as not potentially contributing significantly to the previously noted average lifetime individual cancer risk of 250,000 in one million. Modeled facility-related residential risks are much lower for more distant locations. The potential risk for the proposed Panoche Energy Center was estimated in the related Application for Certification (Panoche Energy Center) as 3.46 in one million, which Staff also considers as not significantly adding to the existing background health risk. Given the previously noted conservatism in the utilized calculation method, the actual risks for each of these sources would likely be much smaller. Therefore, Staff does not regard the incremental risk estimate for SPP's operation as pointing to a potentially significant contribution to the area's cancer risk when considered by itself or together with existing or proposed area pollution sources.

The worst-case long-term non-cancer health impact from the project (represented as a chronic hazard index of 0.001) is well below Staff's significance level of 1.0 at the location of maximum impact. A similar value for the Panoche Energy center is 0.0026. At these levels, Staff does not expect any cumulative health impacts to be significant for the toxic pollutants as emitted from the proposed Starwood Power. (FSA 4.7-13)

Finding

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

CONDITION OF CERTIFICATION

None

PUBLIC HEALTH

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Clean Air Act §112(g), 42 USC §7412, and 40 CCR 63	Requires new sources which emit more than ten tons per year of any specified hazardous air pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).
STATE	
Health and Safety Code §39650-39625	These sections mandate the California Air Resources Board (CARB) and the Department of Health Services to establish safe exposure limits for toxic air pollutants and identify pertinent best available control technologies.
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 re-circulating water to minimize the growth of Legionella and other micro-organisms.
LOCAL	
San Joaquin Valley Unified Air Pollution Control District Rule 2201	Requires safe exposure limits for Toxic Air Pollutants (TACs), use of best Available Control Technology (BACT) and New Sources Review (NSR).

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SOCIOECONOMICS – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Employment	**None**	**None**	**YES**
	Construction: The construction workforce, peaking at 110 workers and averaging 74 workers, is a de minimus percentage of the construction workforce in Fresno, Madera, Tulare and Kings counties, thereby creating no employment or population impacts. The project will benefit local employment directly. Operation: The permanent operation workforce for the plant complex will be 1, causing no employment or population impact.		
Housing	**None**	**None**	**YES**
	Construction: Most of the construction workforce, peaking at 110 workers during the 10-month construction period, is expected to commute to the project. There are sufficient housing resources for any non-commuting workers including residential housing, hotels, motels and RV parks. Operation: The operation workforce is expected to commute to the project. There are sufficient housing resources for any new permanent employee to relocate to the project without impacting housing in the study area.		
Schools	**CONDITION**	**None**	**YES**
	Construction: Most of the construction workforce is expected to commute to the project. There would be no significant impact to the schools in the area. Operation: Any new family of new fulltime operation employees who move into the project area and enter local schools will not cause an adverse impact to existing schools. **CONDITION:** ☑ The project owner shall pay a one-time statutory school development fee to the Mendota Unified School District. Condition: **SOCIO-1**		

Utility/Public Services	**None**	**None**	**YES**
	Construction: Construction is not expected to create an additional demand for utilities. Operation: The operation of the power plant is not expected to create an additional demand for public services.		
Economy/ Government Finance	**None**	**None**	**YES**
	Construction: The construction payroll is estimated at $65 million for tenmonths of construction. An estimated $1 million would be spent locally for materials and equipment during construction. The estimated total sales and use tax during construction is $79,750. Operation: Operation payroll is approximately $85,000 per year. Capital cost is $67 - 70 million. Property taxes are estimated at $ 793,859 for the first year, with a project life of 30 years. An estimated $100,000 will be spent locally for operations, and during operation the local sales tax is estimated at $,7975 annually over the life of the project.		
Environmental Justice	**None**	**None**	**YES**
	Minority/Low Income Population: Census 2000 information that shows the minority population by census block is 98.16 percent and 100 percent within a six-mile and one-mile radius of the proposed SPP site, respectively. Census information shows that the below poverty population is 20.20 percent within the six-mile radius. Disproportionate Impacts: There are no significant project-related unmitigated adverse environmental or public health impacts. Potential air quality, public health, and hazardous materials handling impacts to the public have been mitigated to less than significant through the Conditions of Certification in this Decision. There are no significant cumulative project impacts or significant adverse impacts that fall disproportionately upon minority or low-income populations.		

SOCIOECONOMICS – GENERAL

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

The proposed SPP would be located at 43627 West Panoche Road in the unincorporated area of western Fresno County approximately 50 miles west of the City of Fresno. The SPP would employ an average of 74 construction workers per month (for

10 months) and one employee to operate the facility (one maintenance technician/operator). (FSA 4.8-1)

The 2000 U.S. Census shows that Fresno County had a total population of 865,620 in 2004, which is an increase of approximately eight percent from 799,407 in 2000. By 2010, projections show a California population of 1,001,600 residents in Fresno County. The unemployment rate for Fresno County was 9.2% in January 2007 (not seasonally adjusted). This is not full employment for Fresno County. Full employment has been defined as 4 to 5 percent unemployment over the last few decades. For California in January 2007 (not seasonally adjusted), the unemployment rate was 5.3 percent. (FSA 4.8-2)

Employment

The SPP construction period is expected to be 10 months. The greatest number of construction workers (peak) would occur in the fifth month of construction. The number of construction workers would range from about 26 in the first month of construction to 110 workers at peak construction. There will be an average of 74 workers per month during construction. (FSA 4.8-5)

Research has shown construction workers may commute as much as two hours one-way from their communities rather than relocate (Electric Power Research Institute 1982). During construction of the proposed project most workers would potentially be drawn from Fresno, Madera, Tulare, and Kings Counties which are largely within a two hour one-way commute of the project site. Staff and the Applicant utilized this four-county labor market area for its evaluation of construction worker availability and Fresno County for community services and infrastructure impacts from the construction of the SPP. Staff also used the Fresno-Madera Metropolitan Statistical Area (MSA) for analysis of the construction and operation labor markets. (FSA 4.8-3)

The Fresno-Madera MSA has a fairly large construction trade workforce of 13,410 as of 2002. The peak construction activity (110 workers) for the SPP represents about less than one percent of the total construction workforce. The operational workforce is forecast to also be from Fresno County and would commute rather than relocate. This small increase in employment would have little effect on employment. There would be little induced population growth and no displacement of population by the SPP. (FSA 4.8-4, 5)

IMPLAN model runs estimate the total construction employment at 146 total jobs (72 secondary jobs) based on an average of 74 project related construction jobs. The Applicant‘s secondary construction impacts would result in $2.5 million in labor income and $7.3 million in output (total value of goods and services) for Fresno, Madera, Tulare, and Kings counties. (FSA 4.8-5)

The Applicant’s analysis shows that 1 direct operations job and 1 job as secondary impacts would yield an estimated total of two jobs. Also, operation of the Starwood project would yield secondary operation impacts of $34,506 labor income and

approximately $104,239 in output for Fresno, Madera, Tulare, and Kings counties. (FSA 4.8-5)

These projected economic impacts are beneficial. There is no adverse impact. (FSA 4.8-6)

Housing

As of January 1, 2000, there were approximately 270,767 housing units in Fresno County. The vacancy rate for this housing averages approximately 6.6 percent for Fresno County, which includes single family, multi-family and mobile homes. In addition, there were 1,618 units in the City of Firebaugh and 1,919 units in the City of Mendota. As of July 2006, there are four hotel/motels with approximately 150 rooms in Mendota and Firebaugh. As of August 10, 2006, there were 51 hotels/motels, 6,000 rooms, and a vacancy rate of 66 percent in the City of Fresno. (FSA 4.8-6)

The construction labor workforce is expected to come from Fresno, Madera, Tulare, and Kings counties and commute daily. The supply of permanent and temporary housing is sufficient to accommodate the estimated five (field or contractor's staff) construction workers who would most likely temporarily relocate to the area. (FSA 4.8-6)

The residents of an existing 5 unit apartment building would be relocated to existing replacement housing as a result of the project. This impact is not considered significant because the number of people to be moved would be small, and no new housing would be constructed. The entire permanent operational workforce is expected to commute from within Fresno County. There would be no significant adverse socioeconomic impacts on housing as a result of the SPP. (FSA 4.8-6, 7)

Schools

Fresno County had 311 schools and 191,464 students in 2004-2005. The project site is in the Mendota Unified School District, which has four schools and an enrollment of 2,383, and the Firebaugh-Las Deltas School District which has four schools and 2,434 students. The Mendota Unified School District is currently at capacity with plans to grow and add a middle school. The Firebaugh-Las Deltas School District is currently experiencing low enrollment based on the past few years. (FSA 4.8-7)

The addition of project-related children to schools that are at or over-capacity could increase costs in terms of supplies, equipment and/or teachers. However, this scenario is unlikely to occur since construction workers from outside the four-county area would likely commute weekly to the Starwood site, returning home to their families on the weekend for the relatively short duration of construction. Since the one operational worker is expected to be hired from Fresno County and is expected to commute, there should be no significant adverse socioeconomic impacts on area schools. (FSA 4.8-7)

Education Code section 17620 authorizes a school district to levy a fee against any construction within a district. State and local agencies are precluded from imposing additional fees or other required payments on development projects for the purpose of mitigating possible enrollment impacts to schools. School impact fees to the Mendota Unified School District are estimated to be $8,377. Condition of Certification **SOCIO-1** will verify payment of this fee and compliance with LORS.

CONDITION:

☑ The project owner shall pay a one-time statutory school development fee to the Mendota Unified School District. Condition: **SOCIO-1**

Public Services

Law Enforcement

The Fresno County Sheriff's Department provides service for the County and the Starwood site which is in the unincorporated part of western Fresno County. It is served by Area 1 station in the City of San Joaquin about 24 miles or approximately 30 minutes from the Starwood site. There are also air support units from the Fresno County Sheriff's Department to aid life threatening, emergency situations. The project area is also patrolled by the California Highway Patrol. The Fresno County Sheriff's Department confirms that law enforcement would be able to respond to emergency situations without a negative impact to the Sheriff's services to the community. Additionally, the project will take steps during construction and operation to minimize the potential for law enforcement impacts. This includes the installation of a security fence around the entire project site and the provision of access gates as required. Law enforcement resources are adequate, and there would be no significant adverse impacts on law enforcement resources as a result of the SPP. (FSA 4.8-7)

Medical/Hospital

Fresno County contracts for private emergency medical services (EMS) with American Ambulance. American Ambulance has basic and advanced service and at least one paramedic and emergency medical team (EMT) available at all times. The project site is covered by the Mendota Station located about 16 miles away. Overall response time to the site is about 30 minutes. Mendota Station receives supplies of additional units from neighboring stations in Kerman and Los Banos in Fresno County to ensure continuous emergency response coverage. In addition, American Ambulance has rapid response helicopter service in Fresno County, Skylife, which is located 45 miles away from the SPP or about a ½ hour one-way flight 24 hours a day. The service has a flight nurse, flight paramedic, and EMS pilot. (FSA 4.8-8)

Hospitals available for American Ambulance and Skylife are: Fresno Trauma Center (City of Fresno), Coalinga Regional Memorial Hospital (Kings County), Memorial Hospital Los Banos (Fresno County), and Dos Palos Memorial Hospital (Merced County) depending on the injury. The EMS resources are adequate for the Starwood project, and therefore construction and operation of the project would not cause a significant adverse socioeconomic impact. (FSA 4.8-8)

Economy/Government Finance/Project Benefits

Estimated gross public benefits from the Starwood project include increases in property and sales taxes, employment, and income for Fresno County. There are estimated to be an average of 74 direct project-related construction jobs for the ten months of construction. The project is estimated to have total capital costs of $67 million to $70 million. The construction payroll is estimated at $6.5 million for ten months and the operation payroll is $85,000 annually. Property taxes are estimated at $793,859 for the first year for a project life of 30 years. The estimated total sales and use tax during construction is $79,750 and during operation the local sales tax is $7,975 annually over the life of the project. An estimated $1 million would be spent locally for materials and equipment during construction, and an additional $100,000 would be spent annually on the operations and maintenance budget. (FSA 4.8-6, 11)

Environmental Justice

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

For all siting cases, the Energy Commission follows the U.S. Environmental Protection Agency's guidance in conducting a two-step environmental justice analysis. The analysis assesses:

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

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

Staff has reviewed Census 2000 information that shows the minority population by census block is 98.16 percent and 100 percent within a six-mile and one-mile radius of the proposed SPP site, respectively. Census information shows that the below poverty population is 20.20 percent within the six-mile radius. Poverty status excludes

institutionalized people, people in military quarters, people in college dormitories, and unrelated individuals under 15 years old. (FSA 4.8-2)

Environmental justice impacts are unlikely to occur as a result of construction or operation of the SPP because the project would cause no significant, unmitigated adverse impacts. All of the project's potential impacts would be mitigated to a level of insignificance. Therefore, although virtually all census tracts in the project area contain minority populations, the project's impacts would not be significant, and thus could not be significant and disproportionate. (FSA 4.8-10)

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, section 15130.)

Cumulative impacts could occur when more than one project has an overlapping construction schedule that creates a demand for workers that cannot be met by local labor, resulting in an influx of non-local workers and their dependents.

Construction on the SPP would average 74 workers per month (110 during the peak month), for ten months from approximately June 2008 to March 2009.

Other power projects licensed or planned in Fresno County are:

- San Joaquin Valley Energy Center, an approved 1,087 MW combined-cycle power plant currently on hold.
- Panoche Energy Center (PEC), a proposed 400 MW power plant in Fresno County.
- Bullard Energy Center, a 200 MW natural gas peaker, proposed in the City of Fresno.

A Federal Bureau of Prisons (BOP) medium security Federal Correctional Institution (FCI) is slated to be built in Mendota, Fresno County, 12 miles from the PEC and Starwood power plant sites. Major construction of the new FCI was scheduled to begin in 2005 and completion was expected in 2008 (U.S. Department of Justice Federal Bureau of Prisons). Phase I was completed in March 2007 but the construction status of Phase II is unknown. There are no additional known projects with similar construction needs in Fresno County. (FSA 4.8-8, 9)

Construction estimates for three power plant projects in Fresno County show that in October 2008, the peak construction workforce would be 629 workers for all three projects which would be only approximately five percent of the 2002 construction workforce of 13,410 for Fresno-Madera MSA. However, the peak for Starwood and the two other projects demand for millwrights may exceed supply and require some short-term labor force from outside the four-county area of Fresno, Madera, Tulare, and Kings counties. Staff estimates the three-project total for millwrights would be 111 in

November 2008 and the Fresno-Madera MSA (Fresno and Madera counties) 2008 estimate of millwrights would be 78. No millwrights were forecast for Tulare and Kings counties. Millwrights from outside the four-county area would most likely relocate during weekdays in hotels and motels in the City of Fresno where there is considerable spare capacity and return home on the weekends. Hence, staff finds no significant adverse socioeconomic cumulative impacts associated with the Starwood project. (FSA 4.8-9)

Findings

The project would not cause a significant adverse direct or cumulative impact on housing, employment, schools, public services or utilities. The project would have a temporary benefit to the project and adjacent areas in terms of an increase in local jobs and commercial activity during the construction of the facility. The construction payroll and project expenditures would also have a positive effect on the local and County economies. The estimated benefits from the project include increases in the affected area's property and sales taxes, general employment, and sales of services, manufactured goods, and equipment.

The project conforms to applicable laws related to socioeconomic matters and all potential socioeconomic impacts will be insignificant and thus will not disproportionately impact any minority or low income population.

CONDITION OF CERTIFICATION

SOCIO-1 The project owner shall pay the one-time statutory school development fee to the Mendota 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 CPM proof of payment of the statutory development fee.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

SOCIOECONOMICS

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Executive Order 12898	Executive Order 12898, "Federal Actions to address Environmental Justice (EJ) in Minority Populations and Low-Income Populations," focuses federal attention on the environment and human health conditions of minority communities and calls on agencies to achieve environmental justice as part of this mission. The Order requires the US Environmental Protection Agency (EPA) and all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address this issue. The agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.
STATE	
California Government Code sec. 65996-65997	Includes provisions for levies against development projects in school districts. The local Unified School District will implement school impact fees based on new building square footage.
LOCAL	
None	

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TRAFFIC & TRANSPORTATION – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Congestion	**Insignificant**	**None**	**YES**
	Construction: Commuting construction workers, estimated to peak at 110 workers, but averaging 74 over the 10 month construction period, will add to existing congestion on some local streets. Project construction will likely be contemporaneous with construction of the neighboring Panoche Energy Center (PEC) project, with its average of 180 workers and peak of 383 workers. Project truck deliveries would average 3 daily and peak at 52 daily. PEC truck deliveries would average 7 daily with a daily peak of 15. The cumulative number of worker and truck trips would not significantly impact the existing LOS for area roads. Operation: The proposed project would employ one person to monitor plant operation. The estimated truck trips would be two per quarter, and three deliveries annually of aqueous ammonia. Operation of the project would correspond to the operation of the Panoche Energy Center project		

	POWER PLANT SITE	CUMULATIVE IMPACTS	LORS COMPLIANCE
Safety	**MITIGATION**	**MITIGATION**	**YES**

Construction: There will be deliveries to the site of hazardous construction substances, such as cleaning solvents, paint, and asbestos-containing materials. No acutely toxic materials would be used onsite during construction. The project worker and truck traffic, itself, as well as combined with the PEC project's worker and truck traffic, pose a potential safety impact to school children waiting at the school bus stop adjacent to the projects and to school bus traffic along the worker and truck delivery commute routes.

MITIGATION:

- ☑ To protect school children and school bus activity along West Panoche Road, the Project Owner will conduct a Worker Traffic Safety Program to inform workers of laws relating to school bus traffic, post cautionary roadside signs, and establish a school traffic complaint process. Conditions: **TRANS-2** through **TRANS-4**

Operation: During operation, trucks would periodically deliver aqueous ammonia, sulfuric acid, cleaning chemicals, lubricating oil and filters, water treatment chemicals and laboratory waste. The Applicant estimates a maximum of three truck trips per year.

MITIGATION:

- ☑ The Project Owner shall implement a Safety Management Plan for the delivery of aqueous ammonia. Condition **HAZ-3**.
- ☑ The Project Owner shall direct all vendors delivering aqueous ammonia to use tanker trucks meeting or exceeding federal Department of Transportation regulations. Condition **HAZ-5**.
- ☑ The Project Manager shall direct all hazardous materials deliveries over approved routes selected for safety. Condition **HAZ-6**.

	POWER PLANT SITE	CUMULATIVE IMPACTS	LORS COMPLIANCE
Parking	**Insignificant**	**None**	**YES**
	Construction: The construction worker parking and laydown area would be located on the project site. Operation: The proposed project would require parking for only one operational employee.		
	POWER PLANT SITE	**CUMULATIVE IMPACTS**	**LORS COMPLIANCE**
Aviation	**Insignificant**	**None**	**YES**
	Operation: The closest major airport is Eagle Field Airport which is fourteen miles north of the project site. The existing flight pattern does not bring aircraft at low altitude over the project site. No project structures would penetrate navigable airspace for any airport. The project is located within Lemoore Naval Air Station's Military Operational Airspace, but the project would not cause a significant adverse impact on military flight operations. There are few (if any) aircraft that fly over or near I-5 in the project area, including patrolling California Highway Patrol aircraft.		

TRAFFIC – GENERAL

The SPP site is located at 43627 West Panoche Road about two miles east of Interstate 5 (I-5) in western Fresno County. The facility would be located east and adjacent to an existing PG&E substation and the Wellhead and Calpeak generating station.

Plant construction and operation traffic would use the existing roadways, which would include I-5 and West Panoche Road. I-5 is the principal highway in the area and has Level of Service (LOS) B for daily traffic levels. Access to the site would be via West Panoche Road, which is operating at LOS A with free flowing traffic. (FSA 4.10-2, 3)

I-5 is a north-south four-lane freeway that connects the Central Valley with Northern and Southern California. Caltrans records show average daily traffic volume on I-5 in the vicinity of the project area (between Russell and Manning Avenues) is about 35,400 vehicles per day. Approximately 25 to 30 percent of the daily traffic involves truck movement. There are three interchanges in the area at Manning Avenue, West Panoche Road, and Russell Avenue. Russell and Manning Avenues are the roads immediately north and south of West Panoche Road, respectively. Russell is a north-south oriented two-lane road and Manning is an east-west road with two lanes as well.

West Panoche Road is a two-lane east-west road that provides access to the project site from I-5. It also connects with the local circulation network to the east that accesses communities such as Mendota (north), Kerman (east), and further east to Fresno via State Route (SR)-33 and SR-180. West Panoche Road has unimproved shoulders 10-15 feet wide before one encounters transmission towers, telephone poles and agricultural fields. It carries about 1,060 vehicles per day with 15 percent truck traffic. (FSA 4.10-3)

Congestion

The construction of the power plant will cause additional trips by construction workers and delivery trucks to and from the site, increasing daily traffic volumes on the freeways and local streets. The potential impact of the project is measured by the LOS (Level of Service) of the surrounding roadway segment based upon average daily traffic volume. LOS is measured in a range from LOS A to LOS F. LOS A refers to little or no congestion, whereas LOS F is heavy congestion with significant delays and significantly reduced travel speeds. (FSA 4.10-3)

Commuting Construction Workers

Facility construction is projected to take place over 10 months from summer of 2008 to the second quarter of 2009. The project's construction workforce requirements would be minimal during the mobilization and site grading period (during the first 3 months of the construction period) and during the startup and testing period (during the last 3 months of the construction period). Commercial operation is expected to commence before the end of summer 2009. (FSA 4.10-5)

Construction activities would generally occur between the hours of 7 a.m. and 7 p.m., Monday through Friday. Peak commute hours in the vicinity of the project are 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. (FSA 4.10-5)

The average number of construction workers would be approximately 75, while the peak workforce would consist of 110 workers during a three month period. Based on regional demographics and the availability of skilled workers, the construction workers would probably come from Fresno County, and possibly from Tulare, Madera, and Kings counties. (FSA 4.10-5)

To reach the project site, the Applicant assumes that most of the construction workers coming from Fresno County would use I-5 and exit onto West Panoche Road. They would then go east until reaching the project site entrance. Staff believes that SPP construction workers could also travel on several other state highways to reach the SPP site via I-5, such as SR-152 (north of Fresno), and SR-198 (south of Fresno). Workers living in or near the City of Fresno could travel east on SR-180 to reach SR-33 and then proceed south on SR-33 to Panoche Road. Staff has reviewed Caltrans information and has determined that the LOS for these state routes were between LOS A to C (acceptable) when last rated. Staff does not anticipate that construction traffic would degrade LOS on these roads. (FSA 4.10-5, 6)

Construction Truck Traffic
Construction of the generating plant would require the use and installation of heavy equipment and associated systems and structures. Heavy equipment would be used throughout the construction period, including trenching and earthmoving equipment, forklifts, cranes, cement mixers and drilling equipment.

Project construction is expected to require on average two trucks daily with a peak of 24 trucks daily. On average, there would also be one daily equipment delivery, with 18 daily equipment deliveries during peak construction. In-bound and out-bound truck traffic would arrive and depart the project site using the same route as construction workers. (FSA 4.10-6)

Total Construction Traffic
Total average construction traffic impact (workforce and trucks) would be 84 round-trips (75 workers plus 9 trucks and deliveries). Total peak construction traffic impact would be 236 round-trips (110 workers plus 126 for trucks and deliveries).

Project-related traffic would not cause a deterioration of LOS on West Panoche Road during construction, though there would be some delay (3-6 seconds) at the I-5 north and south bound ramps at West Panoche Road. This small increase of construction traffic would not degrade the LOS on I-5 between Russell and Manning Avenues and would not cause a significant adverse impact on current traffic flow. (FSA 4.10-6)

The Applicant has agreed that if required, a traffic and transportation control plan will be prepared in coordination with Fresno County and Caltrans. The average construction total is about a 16 percent increase in traffic (peak construction total is about a 45 percent increase) on West Panoche Road when compared to 2005 average daily traffic

counts (1,060). However, the LOS (A) on West Panoche Road would not degrade during construction, and therefore no construction traffic control plan is required at this time. The Applicant shall repair any damage to West Panoche Road from construction traffic, particularly heavy trucks. (FSA, 4.10-6)

MITIGATION:

☑ The project owner shall prepare a mitigation plan for damage to West Panoche Road. Condition: **TRANS-1;**

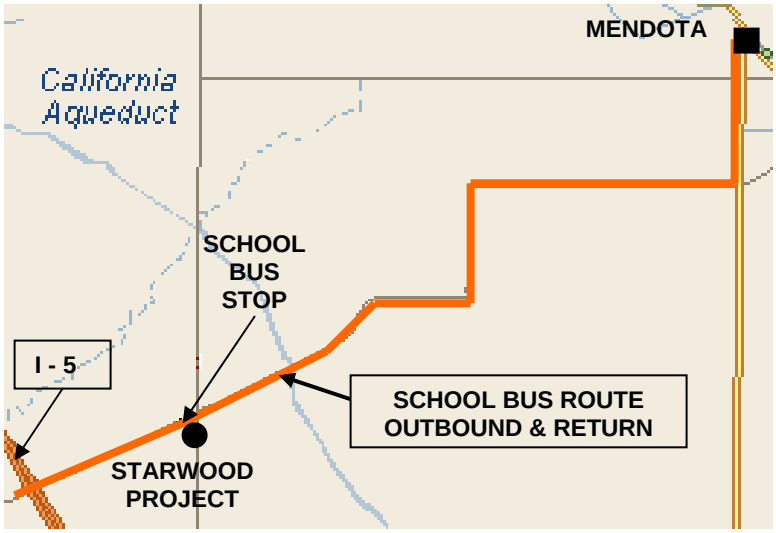
Safety

Construction:
There would be deliveries of hazardous materials to the project site. During the construction period small qualities of hazardous materials would be used (e.g. cleaning solvents, paint, and asbestos containing materials). No acutely toxic hazardous materials would be used onsite during construction. (FSA 4.10-7)

The Applicant has stated that the deliveries of hazardous materials to and from the site (one to three times per month and materials handling on site would be conducted in accordance with all applicable federal and state statutes (see the **HAZARDOUS MATERIALS MANAGEMENT** section). The preferred transportation route for hazardous materials delivery would be via I-5, West Panoche Road, and the SPP access road. This is the shortest and most direct route to the site from I-5. (FSA 4.10-7)

School Bus Safety
A bus from the Mendota Unified School District picks up and drops off children on the south side of West Panoche Road in front of the 5-plex residence adjacent to the north boundary of the SPP site. There is a sufficiently large shoulder on the south side of West Panoche Road to allow the bus to get off the road completely. Morning pick-up is 7:15 AM and afternoon drop-off is 3:45 PM. Other than the children who live in the 5-plex residence, the remaining 15-20 children from the local area are driven to, or picked up at, the bus stop by parents or friends, who wait for the bus to arrive. The children are bussed to school in the City of Mendota. In addition, the school bus also travels west to two other pick-up and drop-off locations on the west side of I-5. (FSA 4.10-7)

Workers using I-5 would travel east until reaching the entrance to the SPP site near the school bus stop. The school bus could encounter construction worker traffic when it travels east or west on West Panoche Road on its route to the stops west of I-5. In addition, workers accessing the site from the east via SR-33 and SR-180 would pass by the bus stop adjacent to the Starwood access road, and could encounter the school bus on its route on West Panoche Road to and from I-5. (FSA 4.10-7)



Staff has been advised by the Mendota Unified School District that, based on previous experience with another large construction project, there could be a potential hazard to the school bus en route to the 5-plex residential bus stop and the I-5 stops (Mendota Unified School District 2007). However, the previous construction project involved widening SR-180 east of Mendota which required lane closures, and is therefore distinguishable from the construction of the SPP which would not require road closures. (FSA 4.10-7)

The Commission notes that the cumulative impact discussions in this Decision discuss the pending Panoche Energy Center (PEC) project that would be located south of, and adjacent to, the existing PG&E Panoche substation. If approved, PEC construction would commence in early 2008; therefore, there would be a significant overlap during the construction of both projects. The PEC project would involve an average of 180 workers and seven truck trips per day. Corresponding peak construction numbers are 383 workers and 15 trucks per day. (FSA 4.10-9)

While the combination of workers and trucks for both projects arriving and departing during peak traffic periods (7 to 9 AM and 4 to 6 PM) would not degrade LOS to an unacceptable level, the Committee had a concern about the safety of the school children waiting at the school bus stop very near both projects and for the school bus traveling the same route on West Panoche Road as commuting construction workers and delivery trucks. Even though the scheduled construction time for these projects would likely peak during the summer or fall months, there may be periods of winter ground fog when commuting construction workers and deliveries will be using the same roadways as the school bus.

Responding to such concerns, the Applicant has prepared Conditions of Certification patterned after those found in the 2003 SMUD Cosumnes Project Decision (01-AFC-19). To ensure that construction workers and repeat deliverymen are aware of the potential risk to school children, the Applicant will conduct a Worker Traffic Safety Program to inform each new employee or contractor's employee of the applicable laws pertaining to school bus safety, potential road conditions, safe driving practices, and school bus schedules and stops. In addition, a public complaint process will be

established to allow citizens to inform the Applicant of any traffic-related issues and provide prompt resolution.

At least during the construction period, the Applicant will post appropriate, approved roadside signs (see sample) advising traffic of the school bus stop and the presence of school children along West Panoche Road near the projects.

Lastly, the Applicant will cause the construction of a protective area along West Panoche Road for school children to stand while waiting for the school bus. For example, either concrete posts or portable K-rail would provide a safety barrier between standing children and passing traffic.

MITIGATION:

☑ To protect school children and school bus activity along West Panoche Road, the Project Owner will conduct a Worker Traffic Safety Program to inform workers of laws relating to school bus traffic, post cautionary roadside signs, and establish a school traffic complaint process. Conditions: **TRANS-2** through **TRANS-4**

Operation

Project operation would require use of hazardous substances including sulfuric acid and cleaning and water treatment chemicals. Applicant estimates that there would be an average of two trucks every three months. Operation would also require a maximum of three deliveries per year of aqueous ammonia. Hazardous materials would be transported on I-5 and West Panoche Road to the Starwood site, which is a reasonable route to access the site since it is the shortest and most direct route. (FSA 4.10-8)

Specific sections of the California Vehicle Code and the California Streets and Highways Code ensure that the transportation and handling of hazardous materials are done in a manner that protects public safety. Enforcement of these statutes is under the jurisdiction of the California Highway Patrol. (FSA 4.10-8)

The California Department of Motor Vehicles specifically licenses all drivers who carry hazardous materials. Drivers are required to check weight limits and conduct periodic brake inspections. Commercial truck operators handling hazardous materials are required to take instruction in first aid and procedures on handling hazardous waste spills. Drivers transporting hazardous waste are required to carry a manifest, which is available for review by the California Highway Patrol at inspection stations along major highways and interstates. (FSA 4.10-8)

A licensed hazardous waste transporter would haul any hazardous waste from the project site to one of two Class 1 hazardous waste landfills in western Kern County near the communities of Buttonwillow and Kettleman City, or one in Imperial County near the community of Westmoreland. (FSA 4.10-8)

Aviation Safety

The closest major airport is Eagle Field Airport which is fourteen miles north of the project site. The existing flight pattern does not bring aircraft at low altitude over the project site. No project structures would penetrate navigable airspace for any airport. (FSA 4.10-9)

The project does not include a cooling tower that could emit visible water vapor plumes. The hot exhaust from the two 50-feet stacks can disturb atmospheric stability above the facility up to 1,000 above ground level, resulting in turbulence with the potential to affect aircraft maneuverability. However, the agricultural fields near the project area are not sprayed by crop-dusting aircraft. In addition, there are few (if any) aircraft that fly over or near I-5 in the project area. California Highway Patrol aircraft monitoring I-5 would not fly as far east as the project site. (FSA 4.10-9)

The project is located within Lemoore Naval Air Station's Military Operational Airspace. Representatives from the military have reviewed the project and have concluded that it would not have any impact on the military mission in the area. The operation of the proposed project would not cause a significant adverse impact on aircraft operations. (FSA 4.10-9)

Parking

Construction:
All plant construction workers would park within the 5.6 acre project site boundaries, which is adequate for the number of construction workers involved in the project. The SPP site would also serve as a laydown area for materials and equipment. (FSA 4.10-5)

Operation: Operation of the power plant would only require one full-time employee that would monitor the project on a daily basis. (FSA 4.10-8)

Cumulative Impacts

In addition to the SPP, Staff is analyzing the Panoche Energy Center (PEC) project that would be located south of, and adjacent to, the existing PG&E Panoche substation. It is Staff's understanding that PEC construction would commence in early 2008, which is about six months prior to the start of Starwood's construction. Therefore, there would be a significant overlap during the construction of both projects. The PEC project would involve an average of 180 workers and seven truck trips per day. Corresponding peak

construction numbers are 383 workers and 15 trucks per day. With LOS A and B for West Panoche Road and I-5, the combination of workers and trucks for both projects arriving and departing during peak traffic periods (7 to 9 AM and 4 to 6 PM) would not degrade LOS to an unacceptable level. Thus, there would be no significant Level of Service cumulative impact on West Panoche Road and I-5. (FSA 4.10-9) However, the Commission finds that the combined projects' construction worker and delivery truck traffic potentially create a safety impact to school bus traffic and children at the school bus stop near the projects.

A Federal Bureau of Prisons medium security Federal Correctional Institution (FCI) is slated to be built near Mendota, about 12 miles from the project site. Major construction of the new FCI was scheduled to begin in 2005 and completion was expected in 2008. Phase I was completed in March 2007 but the construction status of Phase II is unknown. There are no additional planned construction projects in this part of Fresno County. (FSA 4.10-10)

Findings

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

CONDITIONS OF CERTIFICATION

TRANS-1 Prior to site mobilization activities, the project owner shall prepare a mitigation plan for West Panoche Road should it be damaged by project construction. The intent of this plan is to ensure that if West Panoche Road is damaged by project construction it will be repaired and reconstructed to original or as near original condition as possible. This plan shall include:

- Documentation of the pre-construction condition of West Panoche Road from I-5 to the access road to the site. Prior to the start of site mobilization, the project owner shall provide to the CPM photographs or videotape of West Panoche Road.
- Documentation of any portions of West Panoche Road that may be inadequate to accommodate oversize or large construction vehicles, and identify necessary remediation measures;
- Provide for appropriate bonding or other assurances to ensure that any damage to West Panoche Road due to construction activity will be remedied by the project owner; and
- Reconstruction of portions of West Panoche Road that are damaged by project construction.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit a mitigation plan focused on restoring West Panoche Road to their pre-project condition to the Fresno County Planning Department for review and comment, and to the CPM for review and approval.

Within 90 days following the completion of construction, the project owner shall provide photo/videotape documentation to the Fresno County Planning Department, and the CPM that the damaged sections of West Panoche Road have been restored to their pre-project condition.

TRANS-2 The Project owner shall consult with Fresno County and the City of Mendota and prepare and submit to the CPM for approval, a construction traffic control plan (TCP) and implementation program. The TCP should address the following issues:

- Timing of heavy equipment and building materials deliveries
- Signing, lighting and traffic control device placement, if required
- Need for construction work hours and arrival/departure times outside of peak traffic periods, local school bus travel times on Panoche Road, and the intervals that children would be walking to and from bus stops.
- Installation of road signs along Panoche Road to inform drivers of school bus zones.
- Signs directing construction workers and deliveries off of Panoche Road.
- Ensure access for emergency vehicles to the project site.
- Temporary travel lane closure.
- Installation of barriers to protect school children waiting for the school bus.

Verification: At least 45 days prior to site mobilization, the project owner shall submit the plan to the appropriate jurisdictions for review and comment, and to the CPM for review and approval.

TRANS-3 Throughout construction of the project, the project owner shall document, Investigate, evaluate and attempt to resolve all complaints related to construction traffic affecting school bus safety or children walking to and from school bus stops. The project owner or authorized agent shall:

- Use a CPM-approved Complaint Resolution Form, or functionally equivalent procedure acceptable to the CPM, to document and respond to each traffic safety complaint;
- Attempt to contact the person(s) making the traffic safety complaint within 24 hours;
- Conduct an investigation to determine the source of the traffic safety problem related to the complaint;
- If the traffic safety issue is project related, take all feasible measures to reduce the safety problem at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of traffic safety improvement efforts; and if obtainable, a signed statement by the complainant stating that the traffic safety problems resolved to the complainant's satisfaction.

- The project owner shall establish a telephone number for use by the public to report any project-related traffic safety issues. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. The telephone number shall be posted at the project site during construction in a manner visible to passerby. This telephone number shall be maintained until project construction is complete.

Verification: Prior to site mobilization, the project owner shall transmit to the CPM a statement, signed by the project manager, stating that a telephone number has been established and posted at the site, and provide the telephone number. Within 5 days after receiving a traffic safety complaint, the project owner shall file a Complaint Resolution Form with the CPM documenting the resolution of the complaint. If mitigation is required to resolve a complaint and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Complaint Resolution Form when the mitigation is implemented.

TRANS-4 Prior to site mobilization, the project owner shall develop and Implement a Worker Traffic Safety Program (WTSP) focusing on awareness of school buses and school children in the vicinity of the project. The plan shall include, as a minimum, the following:

- A discussion of all applicable motor vehicle laws and penalties under the law; safe driving practices, potential road conditions (e.g., school bus stops, children who are walking to or from a bus stop, children boarding or exiting buses, ground fog, horses/livestock, slow vehicles, etc.) along the expected travel corridor (i.e., Panoche Road),
- Required commute work travel times,
- Expected school bus travel times, and
- A discussion of consequences in the event a worker is found driving in an unsafe manner.

The training shall be provided on a weekly basis to all new employees (including all contractors and subcontractors) at the start of ground disturbance, and continue for the duration of construction. The training may be presented in the form of a video.

Verification: The project owner shall provide a copy of the WTSP to the CPM for review and approval 30 days prior to site mobilization. The training may be presented in the form of a video, if the video has been approved by the CPM. The video shall be provided to the CPM for review and approved 30 days prior to site mobilization. The project owner shall provide the WTSP certification of completion for persons who have completed the training in the prior month, and a running total of all persons who have completed training to date in the monthly compliance report.

TRAFFIC & TRANSPORTATION

APPLICABLE LAW	DESCRIPTION
FEDERAL	
49 CFR §171-177	Governs the transportation of hazardous materials, including the marking of the transportation vehicles.
CFR, Title 14, Chapter 1, Part 77	Includes standards for determining obstructions in navigable airspace. Sets forth requirements for notice to the Federal Aviation Administration of certain proposed construction or alteration. Also, provides for aeronautical studies of obstructions to air navigation to determine their effect on the safe and efficient use of airspace.
STATE	
California State Planning Law, Government Code §65302	Requires each city and county to adopt a General Plan consisting of seven mandatory elements to guide its physical development, including a circulation element.
CA Vehicle Code §35780	Requires approval for a permit to transport oversized or excessive load over state highways.
CA Vehicle Code §31303	Requires transporters of hazardous materials to use the shortest route possible.
CA Vehicle Code §32105	Transporters of inhalation hazardous materials or explosive materials must obtain a Hazardous Materials Transportation License.
California Department of Transportation Traffic Manual, Section 5-1.1	Requires Traffic Control Plans to ensure continuity of traffic during roadway construction.
Streets and Highways Code, Division 2, Chapter 5.5, Sections 1460-1470	Requires Encroachment Permits for excavations in city streets.
California Vehicle Code, 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 upon vehicles operated on highways, safe operation of vehicles, and the transportation of hazardous materials.
California Streets and Highway Code, Division	Includes regulations for the care and protection of State and County highways, and provisions for the issuance of written permits.

1 & 2, Chapter 3 & Chapter 5.5	
LOCAL	
Fresno County General Plan – Transportation and Circulation Element.	Reflects the urban and rural nature of Fresno County and establishes standards that guide the development of the transportation system, and management of access to the highway system by new development, throughout the unincorporated areas of the county. Roadways are classified in this system based on the linkages they provide, their function in the hierarchy of roadways, and the importance of the route's service to the residents and businesses of Fresno County.

VISUAL RESOURCES – Summary of Findings and Conditions

<table>
<tr><th></th><th>POWER PLANT SITE</th><th>CUMULATIVE IMPACTS</th><th>LORS COMPLIANCE</th></tr>
<tr><td>Objectionable Appearance</td><td>MITIGATION</td><td>None</td><td>YES</td></tr>
<tr><td colspan="3">Construction: Construction equipment at the power plant site will have a temporary, and thus insignificant, visual impact.

Operation: The project would appear visually dominant when compared to other elements in the KOP 1 view. The exteriors of major project structures would be treated with a gray finish intended to optimize its visual integration with the surrounding agricultural setting. When considering the various viewing groups at KOP 1 (residential viewer & passing motorist), the introduction of the proposed project's publicly visible structures would generate a less than significant visual effect. The project's publicly visible structures are unnoticeable from residences at KOP 2. When considering the existing landscape and the overall visual sensitivity of motorist views from I-5 or West Panoche Road, the project's structures would generate a less than significant visual effect.

MITIGATION:
☑ The Project Owner shall paint or treat project structures, buildings and components with neutral gray color to minimize visual impacts. Condition: VIS-1.</td></tr>
<tr><td>View Blockage</td><td>None</td><td>None</td><td>YES</td></tr>
<tr><td colspan="3">There is no identified or designated scenic resource or vista in the KOP viewshed that would be blocked from view by project structures.</td></tr>
<tr><td>Scenic Designation</td><td>None</td><td>None</td><td>YES</td></tr>
<tr><td colspan="3">There are no scenic designations related to the project view shed.</td></tr>
</table>

	POWER PLANT SITE	CUMULATIVE IMPACTS	LORS COMPLIANCE
Lighting	**MITIGATION**	**None**	**YES**
	Construction: Limited construction during nighttime hours will require lighting, which will be temporary, and thus insignificant. Operation: Power plant lighting could cause nighttime visual impacts, unless mitigated by designing hooded or shielded lighting consistent with worker safety as well as use of motion detector switches, etc. **MITIGATION**: ☑ Consistent with worker safety and security, the Project Owner shall direct night construction lighting inward toward work areas, using hooded or shielded lighting. Condition: **VIS-2.** ☑ The Project Owner shall design and install project lighting to minimize visibility from public viewing areas and to minimize illumination of the vicinity and the nighttime sky. Condition: **VIS-3.**		
Visible Plume	**None**	**Insignificant**	**YES**
	The SPP would not have a wet cooling tower, a common source of visible water vapor plumes from power plants. Under normal weather conditions, there is no potential for visible water vapor plumes to form from its exhaust stacks.		

VISUAL RESOURCES - GENERAL

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

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

The SPP would be built on the valley floor in western Fresno County, California in an expanse of agriculture. To the north, east, and south is a mosaic of irrigated farmland, orchards (pomegranates and other fruits, nuts), and open space with scattered single family residences. To the west are U.S. Interstate 5 (I-5), a small area of highway service commercial related operations, farmland, rangeland, the Panoche Hills and Panoche Mountain (elevation 2,300 feet). Major concentrations of population are relatively isolated in the region. The closest population center is the City of Mendota which is approximately 12 miles east. (FSA 4.12-1, 2)

The proposed project site would be constructed on an approximate 5.6-acre site portion of a 128-acre parcel which consists of a producing pomegranate orchard, approximately

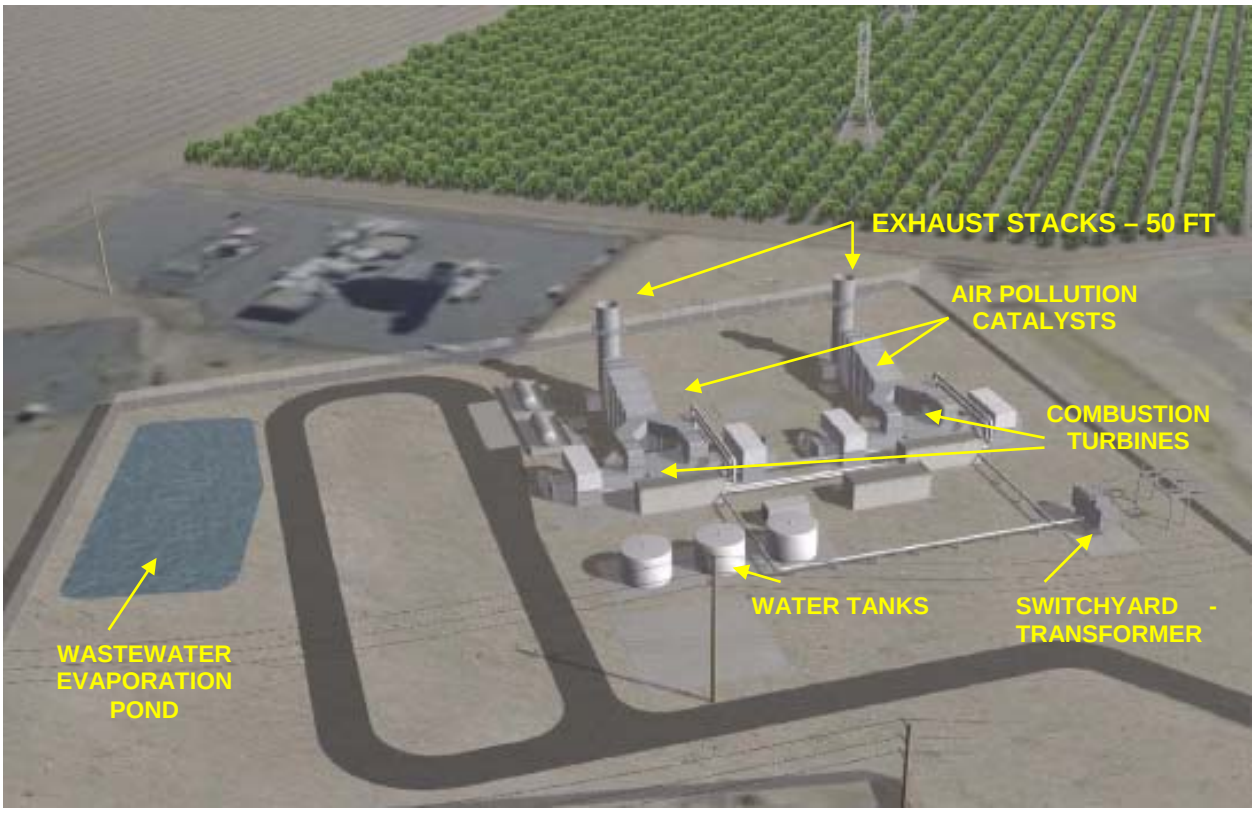
6 to 8 feet in height, and operating electric generation facilities and infrastructure. The proposed project site is currently used as an open air storage area that contains quantities of construction materials and debris, and several large pieces of equipment.

On the adjoining property to the west is Pacific Gas & Electric Company's Panoche Substation, a 230 kilovolt (kV) electric substation, and the CalPeak Power Panoche No. 2, a 49.5 megawatt (MW) peaking plant. To the south is the Wellhead Power Panoche, a 49.9 MW peaking plant. The proposed 400 MW Panoche Energy Center (PEC) is to be constructed about 1,500 feet west of the project site. The PEC proponent filed an application for a power plant license from the California Energy Commission in August 2006. (FSA 4.12-2)

The Panoche Hills Wilderness Study Area is the nearest recognized public use recreational area or facility to the SPP site. The wilderness study area is managed by the U.S. Department of the Interior, Bureau of Land Management. The wilderness study area consists of hilly rangeland and is primarily used for grazing. Hiking and backpacking also take place. The 11,229-acre area is about 5 miles west of the project site on the west side of I-5. (FSA 4.12-2)

Power Plant

The most publicly visible components of the SPP would include: two 50-foot tall combustion turbine generator exhaust stacks, a 50-foot tall dead-end structure, and two 41-foot tall combustion turbine generator enclosures. The proposed project would interconnect to the Panoche Substation by a 300-foot long 115-kV overhead electric transmission line tie into the Panoche Substation. (FSA 4.12-3)



The SPP would not have a wet cooling tower; therefore, there would be no publicly visible water vapor plumes emissions. There is no potential for visible water vapor plumes to form from its exhaust stacks. The project would result in no visual effect related to publicly visible water vapor plumes. (FSA 4.12-11)

Objectionable Appearance

Construction: Construction of the proposed power plant would cause temporary visual impacts due to the presence of equipment, materials, and workforce. These impacts would occur at the proposed power plant site and construction laydown areas over a 10-month period extending from the summer of 2008. During this time, construction materials, construction equipment, trucks, and parked vehicles would be visible on the site.

Construction would include site clearing and grading, the installation of the combustion turbine generators (CTGs) and power train foundations, erecting of the CTGs, the installing of pipe supports, aboveground electrical, exhaust stack fabrication, and installation of aboveground tanks and prefabricated buildings. In addition, during the construction period, construction materials, heavy equipment, trucks, modular offices, and parked vehicles would be publicly visible on the construction laydown area.

The public visibility of the construction site and activities on it would be unobstructed from the five unit residential building located on the south side of West Panoche Road, approximately 100 feet north of the construction site and to motorists on West Panoche Road. The Applicant has a contractual agreement with the owner of the 5-plex to relocate its tenants during construction.

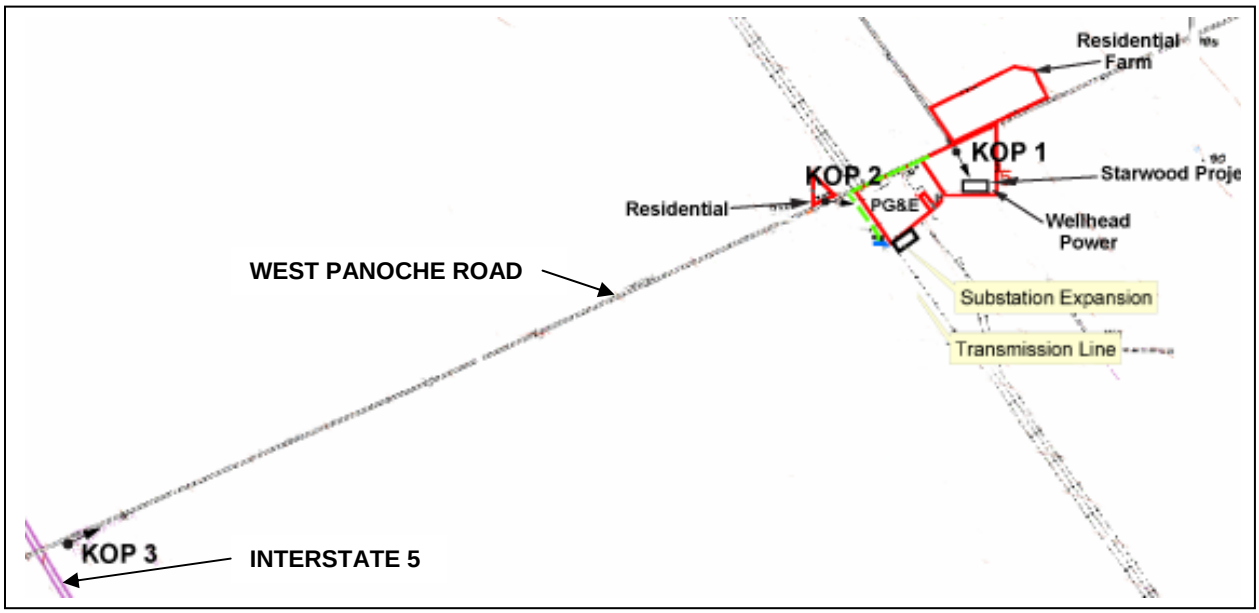
During the construction period a 0.25-acre portion of the 5.6 acre project site would be used for vehicle parking, and the storage of construction equipment and materials. Vehicle access to the construction laydown area would be from West Panoche Road by a private road. (FSA 4.12-4)

Due to the temporary nature of construction and the industrial character of the surrounding setting, project construction will not cause a significant visual impact. (FSA 4.12-5)

Operation:

Key Observation Points

Various Key Observation Points (KOPs) were selected by the Applicant and by the Energy Commission staff. The following paragraphs briefly summarize the concluding assessments of overall visual impacts at these KOPs.



KOP 1 – 5-Unit Apartment Building

KOP 1 represents the view represents the existing view from the backyard of a residential five-unit building along the south side of West Panoche Road, approximately 100 feet north of the proposed power plant site. The residential building is the closest residential unit to the project site. (FSA 4.12-5)

The view from **KOP 1** towards the proposed project site includes exposed arid soil that has annual, ruderal weeds and grasses, the 60-foot tall tubular steel skeleton structure of the Panoche Substation, several 110-foot tall tubular steel electric overhead transmission line towers and wires, several 50-75-foot tall metal and wood vertical poles, and six miles to the south a portion of the grass covered Ciervo Hills (3,391 elevation). Typically, a view of a ridgeline within five miles is considered to be visually sensitive. Construction materials, and electric generation and transmission components and equipment are stored within an open fenced area. The power generation blocks for the Wellhead Peaker plant and the CalPeak Peaker plant are in view. The **KOP 1** viewshed does not include a scenic resource or vista. From this KOP, a residential viewer is accustomed to a backyard view visually described as industrial in appearance. The estimated public appeal of the visual impression (quality) of the **KOP 1** viewshed is considered to be low. (FSA 4.12-5, 6)

West Panoche Road is an east-west two-lane road that provides highway ramp connections to I-5 to the west, and primary access to the cities of Mendota and Firebaugh to the east. The road lies approximately 250 feet north of the project site. The road is not shown as a scenic highway, scenic drive, or landscaped drive on the Fresno County-Designated Scenic Roadways. Motorists who are area residents traveling at normal speed typically have an increased awareness of views from local roads, particularly at points of entry to a community and along designated scenic roadways. (FSA 4.12-6)

The Average Daily Traffic (ADT) count of vehicle trips along the road segment of West Panoche Road between I-5 and the project site is 1,057. The duration of view for motorists traveling west on West Panoche Road at the legal speed limit through the **KOP 1** viewshed to a potential exposure of the power plant site to be 10 to 20 seconds. The 5-plex, which fronts West Panoche Road, blocks a motorist ground level view of the front of the project site, and a neighboring fuel tank farm disrupts a view of it. Surrounding orchards also disrupt the continuity of a motorist ground level view of the project site along this segment of West Panoche Road. The taller power plant structures would be visible from a greater distance. (FSA 4.12-6)

The “before and after” photo-simulation of the project structures (below) shows that the proportionate size relationship to other manmade and natural elements would occupy a large portion of the total field-of-view of **KOP 1**. In addition, the structures would visually appear dominant when compared to other elements in the **KOP 1** view. The photo-simulation shows that the exteriors of major project structures would be treated with a gray finish intended to optimize its visual integration with the surrounding agricultural setting. There is no identified or designated scenic resource or vista in the KOP viewshed that would be blocked from view by project structures. A view of the Wellhead Power peaking plant would be partially disrupted by the project from the KOP location. (FSA 4.12-7)

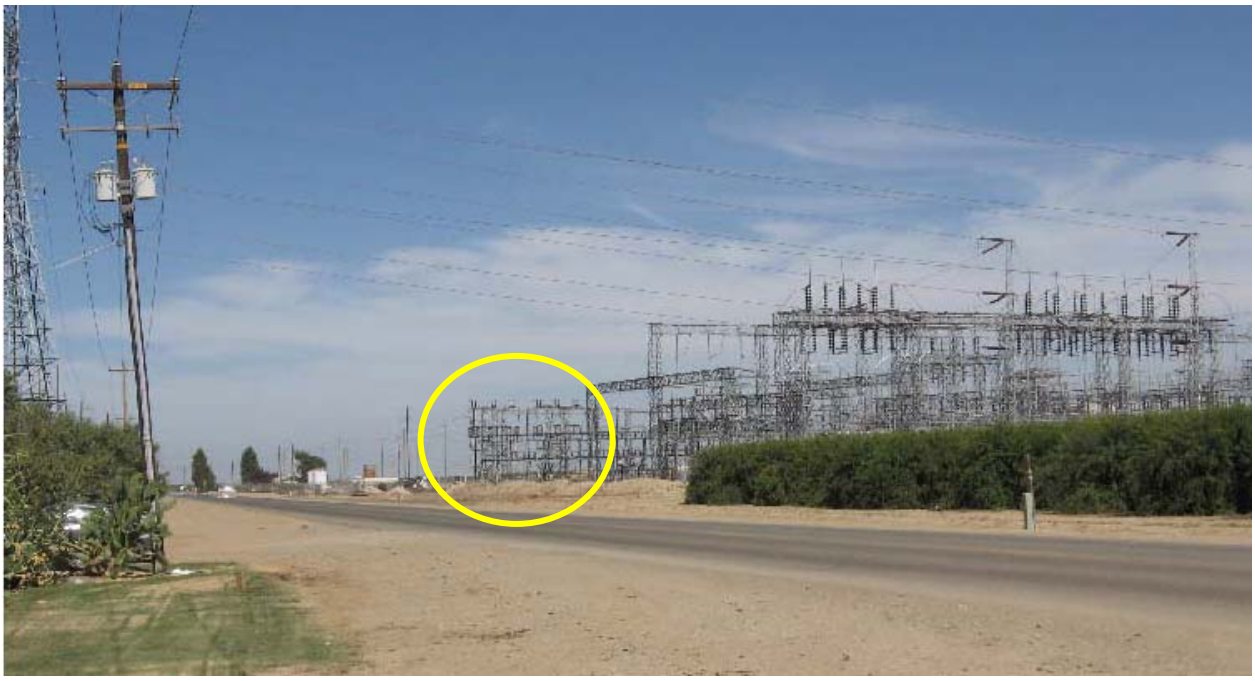
The introduction of the Starwood project structures would not substantially degrade the existing viewshed at **KOP 1**. When considering the various viewing groups at **KOP 1** (residential viewer & passing motorist), the introduction of the proposed project's publicly visible structures would generate a less than significant visual effect at this KOP. (FSA 4.12-7)

KOP 2 – 3 Northside Residences

KOP-2 represents the existing view from the front yard of one residence of a cluster of three single family residences on the north side of West Panoche Road, approximately 1,500 feet west of the proposed power plant site. (FSA 4.12-8)

The **KOP 2** view shows a visually obstructed ground level view of the proposed project site. Currently, there is an orchard that buffers a portion of the view angle of the project site. The substation provides additional buffering at the angle of view to the project site. The visibility of the project site is considered low. This **KOP** location represents the view from three single family residences that may have a view of structures on the project site. This number of potentially affected residences is considered to be low. The duration of view of power plant structures from a residence(s) would be considered low. (FSA 4.12-8)

The view from **KOP 2** towards the proposed project site includes a portion of West Panoche Road and its soft road shoulder, a portion of maintained pomegranate orchard, a portion of the three banks of 60-foot tall tubular steel skeleton structures of the Panoche Substation, overhead transmission wires, and vertical metal and wood poles. Also in the view, down the street, are the white colored diesel tanks of a fuel farm. The **KOP 2** viewshed does not include a scenic resource or vista. (FSA 4.12-8)



From this **KOP**, a residential viewer is accustomed to a view of a pomegranate orchard and the electric substation. There is no focal point in the viewshed that draws the viewer's eye to a unique feature. A portion of the viewshed is partially disrupted by existing tall tubular steel structures. The steel structures introduce forms, lines, colors, and textures that do not conform to the agricultural setting. The estimated public appeal of the visual quality of the **KOP 2** viewshed is considered to be low. (FSA 4.12-8)

As previously noted, the ADT count of vehicle trips along the road segment of West Panoche Road between I-5 and the proposed project site is moderately low, and the duration of view is 10 to 20. (FSA 4.12-8)

The "before and after" photo-simulation shows that the project's publicly visible structures are unnoticeable from **KOP 2.** The project structures would not attract attention and does not change the **KOP 2** viewshed. The introduction of the SPP structures would not substantially degrade the existing viewshed at **KOP 2**., and thus would not cause a significant visual effect at this **KOP**.
(FSA, 4.12-7.)

KOP 3 – I-5 Overpass on West Panoche Road

KOP 3 represents a viewpoint view for motorists near the northbound I-5 on and off-ramps, near the top of an elevated overpass of I-5 on West Panoche Road, two-miles west of the proposed project site. There are no residences at the KOP location. The view from **KOP 3** towards the proposed project site includes West Panoche Road, a highway off-ramp, a line of 110-foot tall tubular steel electric overhead transmission towers and wires, a windbreak consisting of a single row of 20 to 30-foot tall cypress trees, a variety of orchards, and a distant view of the skeleton structure of the Panoche Substation. The **KOP 3** viewshed does not include a scenic resource or vista. The estimated public appeal of the visual quality of the **KOP 3** viewshed is considered to be moderately low. (FSA 4.12-9)

Interstate 5 is designated as a scenic highway within Fresno County by the County of Fresno. As a result of this County designation, intensive land development proposals along I-5 are required to be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. In addition, the design of a proposed development is required to provide and maintain a natural open space area two hundred (200) feet in depth parallel to the right-of-way along the scenic roadway. The project site is approximately two miles away from I-5; therefore the County's scenic designation does not apply to the project site. Interstate 5 is not shown as an officially designated State scenic highway or, as a recognized County scenic highway by the State of California (Caltrans) on the California Scenic Highway System Mapping System. (FSA 4.12-9)

Typically motorists on a freeway system such as I-5, have a moderate to low sensitivity to the visual environment due to their concentration on driving and their focus on their destination. From this KOP, a motorist coming off of I-5 would have an obstructed view of the project site due to an orchard. The existing 110-foot tall transmission towers provide a focal point in the viewshed that draws the viewer's eye to it coming off the highway. (FSA 4.12-9)

The ADT count of vehicle trips along this segment of I-5 near West Panoche Road is 51,500. A view of the project site from I-5 would be interrupted due to agricultural operations adjacent to and along the highway. The estimated duration of view for a motorist traveling east on West Panoche Road from I-5 to an exposure of potential power plant structures on the site to be less than 2 minutes. (FSA 4.12-10)

The “before and after” photo-simulation of the project’s structures shows the proportionate size relationship to other manmade and natural elements in the view. The project structures would occupy a very small portion of the total field-of-view of **KOP 3**. In addition, the structures would visually appear subordinate when compared to other elements in the KOP view. The proposed project’s 90-foot tall exhaust stacks are barely visible. There is no identified or designated scenic resource or vista in the KOP viewshed that would be blocked from view by project structures. A small view of the

Panoche Substation would be partially disrupted by the project from the KOP location. (FSA 4.12-10)

The introduction of the SPP structures would not substantially degrade the existing viewshed at **KOP 3**. When considering the existing landscape and the overall visual sensitivity of motorist views from I-5 or West Panoche Road, the proposed project's structures would generate a less than significant visual effect at this **KOP**.

MITIGATION:

☑ The Project Owner shall paint or treat project structures, buildings and components with neutral gray color to minimize visual impacts. Condition: **VIS-1.**

View Blockage

View blockage describes the extent to which any previously visible landscape features are blocked from view by the project. Blockage of higher quality landscape features by lower quality features causes adverse impacts. There is no identified or designated scenic resource or vista in the KOP viewshed that would be blocked from view by project structures. (FSA 4.12-7, 8 & 10)

Scenic Designation

There are no scenic designations applicable to the project site or its immediate surroundings. (FSA 4.12-7, 8 & 10)

Lighting

Construction: Construction during evening hours will require lighting. When nighttime construction activities are undertaken, illumination that meets State and Federal worker safety regulations would be required.

As a result, there may be times when the project would appear as a brightly-lit area clearly visible from the 5-plex and motorists along West Panoche Road. Condition of Certification **VIS-2** would, to the extent feasible and consistent with worker safety codes, require that construction lighting be directed to the center of the facility and shielded to prevent light from straying offsite. The temporary nature of night construction, together with measures to reduce light leaving the construction site, renders night construction lighting impacts insignificant. (FSA 4.12-11)

MITIGATION:

☑ Consistent with worker safety and security, the Project Owner shall direct night construction lighting inward toward work areas, using hooded or shielded lighting. Condition: **VIS-2.**

Operation:

During the operational stage, the proposed power plant would require onsite nighttime lighting for safety and security purposes. Those areas of the plant not occupied on a regular basis would be controlled by switches or motion detectors to light work areas only when needed. Project lighting will be visible from the KOPs, together with the lighting from the PG&E Panoche Substation and the other generating facilities in the immediate area. Offsite visibility and potential glare would be limited by Condition of Certification **VIS-3**, which requires use of non-glare fixtures and control of lighting direction. Thus, the overall change in ambient lighting as viewed from nearby locations and from any I-5 vantage points would be less than significant. (FSA 4.12-8)

MITIGATION:

☑ Consistent with worker safety and security, the Project Owner shall design and install permanent project lighting to minimize visibility from public viewing areas and to minimize illumination of the vicinity and the nighttime sky. Condition**: VIS-3.**

A lighting system for the project's exhaust stacks to address Federal Aviation Administration regulations is not necessary because the exhaust stacks (the tallest structures) would not exceed 200 feet in height, and the project site is in excess of 20,000 feet (3.8-miles) from an airport runway that is at least 3,200 feet in actual length. (FSA 4.12-11)

Visible Plumes

The SPP would not have a wet cooling tower, a common source of visible water vapor plumes from power plants. The SPP is expected to have a very high exhaust temperature (750 degrees Fahrenheit) from its gas turbines. Under normal weather conditions, there is no potential for visible water vapor plumes to form from its exhaust stacks. Therefore, the project would result in no visual effect related to publicly visible water vapor plumes. (FSA 4.12-11)

Cumulative Impacts

As defined in Section 15355 of the CEQA Guidelines (California Code of Regulations, Title 14), a cumulative impact is created as a result of the combination of the project under consideration together with other existing or reasonably foreseeable projects causing related impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. In other words, while any one project may not create a significant impact to visual resources including visible water vapor plumes, the combination of the new project with all existing or planned projects in an area may create significant impacts. The significance of the cumulative impact would depend on the degree to which (1) the viewshed is altered; (2) views of a scenic resource are impaired; or (3) visual quality is diminished.

The proposed SPP would be built in western Fresno County, 12 miles east of the City of Mendota within an expanse of irrigated farmland, orchard, and open space with scattered residences. There is no identified scenic resource or vista in the **KOP 1**, **KOP 2** and **KOP 3** viewsheds that would be disrupted by the built project. (FSA 4.12-12)

On adjoining properties to the west of the project site is the Panoche Substation, the CalPeak Power Panoche No. 2 generation facility and to the south the Wellhead Power Panoche generation facility. A potential development project, 1,500 feet west of the project site is the Panoche Energy Center. The CalPeak, Wellhead and SPP do not use cooling towers. Also the plants do not operate around the clock. The cumulative visual impact from publicly visible water vapor plumes introduced by the proposed peaking plants and generated by the operating peaking plants is unlikely. (FSA 4.12-12)

The addition of publicly visible structures by the proposed Starwood and Panoche electric generation projects would add to the existing congregation of industrial structures next to the Panoche Substation. The Panoche Substation would continue to be dominant in the landscape. A noticeable change would occur. The existing and planned projects are visually limited to an existing small industrial-looking area surrounding the substation (an industrial island) in an expanse of agriculture. A visual change to the existing agricultural character and quality of the surrounding area is not expected to happen due to existing agricultural land use regulations. (FSA 4.12-12)

While project-related nighttime light and daytime glare impacts of the SPP would be mitigated to a level that would be less than significant, existing light and glare levels in the vicinity of the project would increase cumulatively as a result of the project and, existing and planned land uses. Light and glare impacts generated by these projects are not anticipated to be cumulatively considerable if mitigated according to the CEQA. (FSA 4.12-12)

The Federal Correctional Institution, Mendota, California, is to be built southwest of the City of Mendota, approximately 12 miles from the SPP site. The Federal Bureau of Prisons is building a medium-security federal correctional institution to house approximately 1,152 adult male inmates, and a satellite prison camp to house 128 minimum-security inmates on a 960 acre property located near the corner of the intersection of California Avenue and State Route 33. The correctional facility would not be visible from the SPP site. (FSA 4.12-12, 13)

The SPP and Panoche projects would introduce to the **KOP 1**, **KOP 2**, and **KOP 3** viewsheds publicly visible structures that are industrial in nature to an agricultural area. The view of the publicly visible structures would be compacted around the existing electric substation. The structures would be visually noticeable but would not be so great as to constitute a substantial degradation of the existing visual setting. The SPP in combination with existing and planned projects would generate a less than significant cumulative visual effect to the **KOP 1**, **KOP 2**, and **KOP 3** viewsheds. (FSA 4.12-13)

Findings

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

CONDITIONS OF CERTIFICATION

Surface Treatment of Project Structures and Buildings

VIS-1 The project owner shall color and finish the surfaces of all project structures and buildings visible to the public to ensure that they: (1) minimize visual intrusion and contrast by blending with the landscape; (2) minimize glare; and (3) comply with local design 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 a surface treatment plan to the Compliance Project Manager (CPM) for review and approval. The treatment plan shall include:

A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;

B. A list of each major project structure, building, tank, pipe, and wall; 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 proposed treatment for project structures, including structures treated during manufacture, from the Key Observation Points;

E. A specific schedule for completing the treatment; and

F. A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not request vendor treatment of any buildings or structures during their manufacture, or perform final field treatment on any buildings or structures, until the project owner has received treatment plan approval by the CPM.

Verification: At least 90 days prior to specifying vendor color(s) and finish (es) for structures or buildings to be surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the County of Fresno Department of Public Works and Planning,

Development Services Division for review and comment. The project owner shall provide the CPM with the County's comments at least 30 days prior to the estimated date of providing paint specification to vendors.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

Within ninety (90) days after the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and is ready for inspection; and shall submit one set of electronic color photographs from the Key Observation Points.

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.

Construction 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 obtrusive spill light beyond the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries;

C. Wherever feasible and safe and not needed for security, lighting shall be kept off when not in use; and

D. Complaints concerning adverse lighting impacts will be promptly addressed and mitigated.

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, the project owner shall implement the necessary modifications within 15 days of the CPM's request and notify the CPM that the modifications have been completed.

Within 10 days of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 10 days after completing

implementation of the proposal. A copy of the complaint resolution form report shall be included in the subsequent Monthly Compliance Report following complaint resolution.

Permanent Exterior Lighting

VIS-3 To the extent feasible, consistent with safety and security considerations and commercial availability, the project owner shall design and install all permanent exterior lighting such that a) light fixtures do not cause obtrusive spill light beyond the project site; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky; d) illumination of the project and its immediate vicinity is minimized, and e) lighting complies with local policies and ordinances.

The project owner shall submit to the CPM for review and approval and simultaneously to the County of Fresno Department of Public Works and Planning, Development Services Division for review and comment a lighting mitigation plan that includes the following:

A. A process for addressing and mitigating complaints received about potential lighting impacts;

B. Lighting shall incorporate commercially available fixture hoods/shielding, with light directed downward or toward the area to be illuminated;

C. Light fixtures shall not cause obtrusive spill light beyond the project boundary;

D. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and

E. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to determine the required documentation for the lighting mitigation plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to the County of Fresno Department of Public Works and Planning, Development Services Division for review and comment a lighting mitigation plan. The project owner shall provide the County's comments to the CPM at least 10 days prior to the date lighting materials are ordered.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been installed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 10 days of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days of complaint resolution.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

VISUAL RESOURCES

APPLICABLE LAW	DESCRIPTION
FEDERAL	
N/A	There are no applicable Federal LORS for the section of visual.
STATE	
N/A	There are no officially designated State Scenic Highways or Scenic Routes within the project view shed. There are no state regulations pertaining to scenic resources applicable to the project.
LOCAL	
N/A	No adopted policies or ordinances applicable to the proposed project or site have been identified.

WASTE MANAGEMENT – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Existing Contamination/ Excavation	**MITIGATION**	**None**	**YES**
	The proposed project site was formerly used for agriculture, which probably included the use of pesticides and herbicides. Thus, it is possible that contaminated soil may be encountered during trenching and excavation. **MITIGATION:** ☑ The Project Owner shall obtain a hazardous waste generator identification number. Condition: **WASTE-3.** ☑ The Project Owner shall employ a registered engineer and prepare a waste management plan and a site remediation plan. Conditions: **WASTE-1** to **WASTE-6.** ☑ Any contaminated soils will be tested and, if appropriate, treated or disposed at a Class I landfill. Conditions: **WASTE-2.**		
Construction Wastes	**MITIGATION**	**None**	**YES**
	Power plant construction will generate typical hazardous and non-hazardous construction wastes, such as welding materials, paint, flushing and cleaning fluids, solvents, asbestos-containing materials, lead-based paint, lumber, plastic, scrap metal, glass, excess concrete, empty containers, and packaging. These construction wastes are either recycled or disposed of by appropriate licensed haulers. **MITIGATION:** ☑ The Project Owner shall obtain a hazardous waste generator identification number. Condition: **WASTE-3.** ☑ The Project Owner shall notify the CPM in writing within 10 days of becoming aware of an impending waste management-related enforcement action. Condition: **WASTE-4.** ☑ The Project Owner shall prepare a waste management plan. Condition: **WASTE-5.**		
Non-hazardous Operational Wastes	**Insignificant**	**None**	**YES**
	The project is anticipated to generate non-hazardous operational waste annually. These non-hazardous wastes will be routinely transported offsite to a solid waste disposal facility, or recycled.		

	POWER PLANT SITE	CUMULATIVE IMPACTS	LORS COMPLIANCE
Hazardous Operational Wastes	**MITIGATION**	**None**	**YES**
	The amounts of hazardous wastes generated during operation would be minimal and recycling methods would be used to the extent possible. Non-recyclable hazardous wastes would be stored onsite until disposed of by licensed hazardous waste collection and disposal contractors. **MITIGATION:** ☑ The Project Owner shall obtain a hazardous waste generator identification number. Condition: **WASTE-3.** ☑ The Project Owner shall report any potential enforcement action related to waste management. Condition: **WASTE-4**. ☑ The Project Owner shall prepare a waste management plan to assure the appropriate handling of operation wastes. Condition: **WASTE-5**. .		
Disposal Capacity	**None**	**None**	**YES**
	Disposal of wastes generated by the project can occur without significantly impacting the capacity or remaining life of available disposal facilities.		

WASTE MANAGEMENT - GENERAL

Different types of wastes will be generated during the construction and operation of the proposed project and must be managed appropriately to minimize the potential for adverse human and environmental impacts. These wastes are designated as hazardous or non-hazardous according to the toxic nature of their respective constituents. This analysis assesses the adequacy of the waste management plan with respect to handling, storage and disposal of these wastes in the amounts estimated for the project.

Existing Contamination

The 5.6 acre parcel is currently unimproved and is used as an equipment laydown yard by CalPeak Power-Midway. The project site has been graded, and is disturbed and has served as a storage-yard for the past five years.

A Phase I ESA of the proposed project dated August 2006 was prepared in accordance with ASTM practice E 1527-00. The Phase I ESA did not identify any Recognized Environmental Conditions on the proposed SPP site thereby, eliminating the need for a Phase II ESA.

The Phase I ESA, however, mentions that the property has been used for agricultural purposes in the past, which probably included the use of pesticides and herbicides. Thus, indicating the potential for pesticide and/or herbicide contamination presence on the property at low levels. Staff Data Request Number 65 requested that SPP sample the site for hazardous concentrations of contaminants. SPP provided test results for

arsenic and selenium, which were found to be non-hazardous. Staff also compared the soil chemical testing results from the Panoche Project, which is adjacent to SPP and located on an orchard. The maximum concentrations of each chemical detected in the Panoche soil samples were less than California Human Health Screening Levels for commercial/industrial land use established by the California Environmental Protection Agency. (FSA 4.13-4, 5)

Since excavation activities and trenching during construction of the proposed project may encounter potentially contaminated soils specific handling, disposal, and other precautions may be necessary per 22 CCR 66262.10. Conditions of Certification **WASTE-1** and **WASTE-2** adequately address any soil contamination contingency that may be encountered during construction of the project and would ensure compliance with 22 CCR 66262.10. (FSA 4.13-5)

MITIGATION:

- ☑ The Project Owner shall obtain a hazardous waste generator identification number. Condition: **WASTE-3.**
- ☑ The Project Owner shall employ a registered engineer and prepare a waste management plan and a site remediation plan. Conditions: **WASTE-1** through **WASTE-5.**
- ☑ Any contaminated soils will be tested and, if appropriate, treated or disposed at a Class I landfill. Condition: **WASTE-2.**

Construction Wastes

Site preparation and construction of the proposed generating plant and associated facilities would last approximately 12 months and generate both non-hazardous and hazardous wastes in solid and liquid forms. Before construction can begin, the project owner would be required to develop and implement a Construction Waste Management Plan as per Condition of Certification **WASTE-5**.

Non-hazardous solid wastes generated during construction would include metal, wood, paper, glass, and plastic waste products comprised of excess lumber, packing materials, insulation, metal debris from welding/cutting activities, electrical wiring, and empty non-hazardous chemical containers. All non-hazardous wastes would be recycled to the extent possible and non-recyclable wastes would be collected by a licensed hauler and disposed of in a solid waste disposal facility. (AFC, 8.14-12; FSA 4.13-5)

Non-hazardous liquid wastes would be generated during construction, and are discussed in the **WATER QUALITY AND SOILS** section of this document. Storm water runoff would be managed in accordance with a Drainage, Erosion and Sediment Control Plan that would be prepared for the project and approved prior to construction. Other wastewaters would be sampled to determine their disposal. (AFC, 8.14-12; FSA, 4.13-5)

Hazardous wastes anticipated to be generated during construction include welding materials, paint, flushing and cleaning fluids, solvents, asbestos containing materials, and lead-based paint. The Applicant would be considered the generator of hazardous wastes at this site during the construction period and therefore, prior to construction, the project owner would be required to obtain a unique hazardous waste generator identification number from DTSC in accordance with DTSC regulatory authority, pursuant to condition of certification **WASTE-3**.

Wastes would be accumulated, properly manifested, transported and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies. All wastes would be disposed in accordance with all applicable LORS. Should any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner would be required by Condition of Certification **WASTE-4** to notify the Compliance Project Manager (CPM) whenever the owner becomes aware of this action. (FSA 4.13-7)

MITIGATION:

- ☑ The Project Owner shall prepare a waste management plan to assure the appropriate handling of construction wastes. Condition: **WASTE-5**.
- ☑ The Project Owner and contractor, if necessary, will obtain a hazardous waste generator identification number. Condition: **WASTE-3.**

Non-Hazardous Operational Wastes

Nonhazardous solid wastes anticipated to be generated during operation include maintenance wastes and office wastes. Non-recyclable wastes would be regularly transported offsite to a solid waste disposal facility

Nonhazardous liquid wastes would be generated during facility operation and are discussed in **WATER QUALITY AND SOILS**. Storm water runoff would be managed in accordance with a Drainage, Erosion and Sediment Control Plan. General facility drainage will consist of area washdown, sample drains, equipment leakage and drainage from facility equipment areas and would be discharged to the waste water collection system. (FSA 4.13-6)

Area drains will be located by mechanical equipment where it is determined that oil could mix with rainwater or other water sources. The water collected by these drains will go to the oil-water separator, which separates out any oil before the effluent goes to the collection tank via an underground drain line. The oil-contaminated fluid will be pumped out by a vacuum truck on an as-needed basis and disposed of at a facility specifically qualified to handle each waste. (FSA 4.13-7)

Hazardous Operational Wastes

The Applicant would be considered the generator of hazardous wastes at this site during operations and thus the project owner's unique hazardous waste generator

identification number obtained during construction would still be required for generation of hazardous waste, pursuant to Condition of Certification **WASTE-3**. (FSA 4.13-7)

Hazardous wastes anticipated to be generated during routine project operation include waste lubricating oil, lubrication oil filters from the combustion turbines, spent Selective Catalytic Reduction catalyst, oily rags, cooling tower sludge, laboratory analysis waste, oil absorbents, and chemical feed area drainage.

The amounts of hazardous wastes generated during the operation of SPP would be minimal, and recycling methods would be used to the extent possible. The remaining hazardous waste would be temporarily stored on-site and disposed of by licensed hazardous waste collection and disposal companies in accordance with all applicable regulations. Should any operations waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner would be required by proposed condition of certification **WASTE-4** to notify the CPM whenever the owner becomes aware of this action. (FSA 4.13-7)

MITIGATION:

- ☑ The Project Owner shall obtain a hazardous waste generator identification number. Condition: **WASTE-3.**
- ☑ The Project Owner shall report any potential enforcement action related to waste management. Condition: **WASTE-4**.
- ☑ The Project Owner shall prepare a waste management plan. Condition: **WASTE-5.**

Disposal Capacity

During construction of the proposed project, 10 cubic yards per week of nonhazardous will be generated and would be recycled, if possible, or disposed of in a Class III landfill. The local landfills all have adequate remaining capacity and tentative closure dates to make them all an adequate choice for disposing of solid waste. The total amount of nonhazardous waste generated from project construction and operation will contribute less than one percent of available landfill capacity. (AFC, 8.14-7; FSA 4.13-7)

Most of the hazardous waste generated by the SPP would be during facility construction and startup in the forms of flushing and cleaning liquids. The SCR catalysts would require regeneration every three to five years resulting in the generation of a total of 500 pounds per year of waste material that could require disposal in a Class I facility if recycling or regeneration proves not to be feasible.

All hazardous wastes generated during both construction and operation would be transported offsite to a permitted treatment, storage, or disposal (TSD) facility for appropriate disposition, preferably recycling. The volume of hazardous waste from the SPP requiring off-site disposal would be far less than Staff's threshold of significance (10 percent of the existing combined capacity of the three Class I landfills) and would therefore not significantly impact the capacity or remaining life of any of these facilities.

Two nearby Class I landfills in California, at Kettleman Hills in King's County, and Buttonwillow in Kern County are permitted to accept hazardous waste. In total, there is in excess of 16 million cubic yards of remaining hazardous waste disposal capacity at these landfills, with remaining operating lifetimes sufficient for this project. The amount of hazardous waste transported to these landfills has decreased in recent years due to source reduction efforts by generators, and the transport of waste out of state that is hazardous under California law, but not federal law. (FSA 4.13-8)

Cumulative Impacts

There are two projects, Panoche, and SPP proposed to be located in Fresno County. These projects listed the same Class III, Solid Waste Landfills for non-hazardous waste disposal for construction and operation of the projects. The facilities are located in Fresno, Los Angeles, Kings, and San Bernardino counties. The combined capacity per year of the landfills total 2,324,010 tons per year of available operating capacity. The combined waste generated at all three facilities would require less than one percent of the capacity of any one of the solid waste landfills. Therefore, the wastes from the construction and operation of the proposed project and its related facilities will not significantly impact the capacity of these landfills and will not create a cumulative impact. (FSA 4.13-8)

Finding

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

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the Compliance Project Manager (CPM) for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The Registered Professional Engineer or Geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

WASTE-2 If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to

the project owner representatives of Department of Toxic Substances Control, and CPM stating the recommended course of action and obtain approvals from the Department of Toxic Substances Control.

Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall submit any final reports filed by the Registered Professional Engineer or Geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-3 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste during construction and operations.

Verification: The project owner shall keep its copy of the identification number on file at the project site and notify the CPM via the relevant Monthly Compliance Report of its receipt.

WASTE-4 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

WASTE-5 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including temporary onsite storage, treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM for approval.

The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year and provide a comparison of the actual methods used to those management methods proposed in the original Operation Waste Management Plan.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

WASTE MANAGEMENT

APPLICABLE LAW	DESCRIPTION
FEDERAL	
42 U.S.C. § 6922 Resource Conservation and Recovery Act (RCRA)	The RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires generators of hazardous waste to comply with requirements regarding: • Record keeping practices which identify quantities of hazardous wastes generated and their disposition, • Labeling practices and use of appropriate containers, • Use of a manifest system for transportation, and • Submission of periodic reports to the U.S. Environmental Protection Agency (EPA) or authorized state agency.
Title 40, Code of Federal Regulations, part 260	These sections contain regulations promulgated by the EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity, and specific types of wastes are listed.
STATE	
California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended)	This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency (Cal EPA)) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.
Title 14, California Code of Regulations, §17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)	These regulations set forth minimum standards for solid waste handling and disposal, guidelines to ensure conformance of solid waste facilities with county solid waste management plans, as well as enforcement and administration provisions.
Title 22, California Code of Regulations, §66262.10 et seq. (Generator Standards)	These sections establish requirements for generators of hazardous waste. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the federal program, hazardous waste generators must obtain EPA identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, hazardous waste must only be handled by registered hazardous waste transporters. Generator requirements for record keeping, reporting, packaging, and labeling are also established and are enforced by the Cal-EPA Department of Toxic

	Substances Control.
Title 22, California Code of Regulations, §67100.1 et seq.	Hazardous Waste Source Reduction and Management Review. These sections establish reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits. The required reports must indicate the generator's waste management plans and performance over the reporting period.
The Asbestos Airborne Toxic Control Measure	The California Air Resources Board (CARB) adopted the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations. The ATCM requires specific mitigation measures to prevent off-site migration of asbestos-containing dust.
Title 8 California Code of Regulations §1529 and §5208	These are regulations requiring the proper removal of asbestos containing materials and are enforced by California Occupational Safety and Health Administration (Cal-OSHA).
LOCAL	
Fresno County Department of Community Health (FCDCH), Environmental Health Division	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 tank cleanup.
FCDCH, Environmental Health Division	Regulates hazardous waste generator permitting, and hazardous waste handling and storage.
Fresno County General Plan Public Facilities Element	Will ensure all new development complies with applicable provisions of County Integrated Solid Waste Management Plan.

WATER QUALITY & SOILS – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Erosion &, Sedimentation	**MITIGATION**	**None**	**Yes**
	Grading and excavation activities potentially produce dust that can be transported off-site by wind. Grading and excavation may also create the potential for transport of loosened soils by rainwater or on-site release of fluids. **MITIGATION:** ☑ The Project Owner shall prepare a site-specific Drainage, Erosion and Sedimentation Control Plan. Condition: **WATER QUALITY AND SOILS-1** ☑ The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm water Associated with Construction Activity. Condition: **WATER QUALITY AND SOILS-2**		

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Drainage & Water Pollution	**MITIGATION**	**None**	**Yes**
	Storm water drainage over compacted or graveled surfaces has the potential to impact off-site waterways or sensitive habitats by carrying contaminants deposited on the surface or by channeling volumes of fast moving water. The project shall comply with the NPDES Permit for the facility. **MITIGATION** ☑ The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm water Associated with Industrial Activity and implement a Storm Water Pollution Prevention Plan (SWPPP) Conditions: **WATER QUALITY AND SOILS–3 and WATER QUALITY AND SOILS–4.**		
Wastewater	**MITIGATION**	**None**	**Yes**
	Wastewater will be generated at the plant in various systems, including circulating water system, plant drains, storm water runoff, etc. The Applicant will collect all plant wastewater streams at the onsite retention pond and conduct analyses prior to discharge in accordance with its existing NPDES permit. **MITIGATION** ☑ The project owner shall handle, treat, and dispose of wastewater in connection with operational activity in accordance with its NPDES permit, a Flood Permit and Water Quality Agreement with the Los Angeles County Flood Control District/Department of Public Works, and Permit for Industrial Wastewater Discharge with the Los Angeles County Sanitation District. Conditions: **WATER QUALITY AND SOILS–3, WATER QUALITY AND SOILS–4 and WATER QUALITY AND SOILS–9.**		

WATER QUALITY – GENERAL

This section analyzes potential effects on water quality and soil resources that could result from construction and operation of the project, specifically focusing on the potential for erosion and sedimentation and degradation of surface and groundwater quality. Flooding is addressed in the **GEOLOGY** section of this decision. Solid waste and contaminated soil disposal is discussed in the **WASTE MANAGEMENT** section.

The proposed SPP would be located within the San Joaquin Valley and the Westside Subbasin of the San Joaquin Valley Groundwater Basin. There are no natural or artificial water bodies in the vicinity of the site with the exception of the California

Aqueduct, approximately two miles to the east, and Panoche Creek, the main drainage in the area, which is approximately two miles northwest of the site. This rural unincorporated section of Fresno County is characterized by extremely flat topography, agriculture practices, and sparsely located houses. (FSA 4.9-4)

The SPP would include a water treatment system using a reverse-osmosis (RO) unit that would feed a demineralizer to provide high-purity water to the gas turbines for water injection/inlet fogging. The water treatment system would include one 75,000-gallon raw water storage tank, a RO unit, a mobile water treatment system, two 75,000-gallon demineralized water storage tanks, and a forwarding system to deliver the demineralized water to the gas turbines. The project would include a waste water system to collect oily water waste from the site including an on-site 4,700 gallon storage tank to contain drainage from the CTG units. Oily waste would be collected in sumps and pumped to above-ground storage tanks and sent off site for disposal. A site stormwater drainage system would convey drainage of rain water away from areas where equipment is stored. An on-site, lined evaporation pond would collect waste discharge water from the RO unit. (FSA 4.9-8)

Erosion & Sedimentation

The SPP site is surrounded by agricultural land; however, the actual site is being used as a storage yard for large equipment left over from the construction of the CalPeak Power generation project. The adjacent property, approximately 122 acres, is prime agricultural land in a Williamson Act preserve contract and has been designated by the State of California as farmland of statewide importance. The Williamson Act contract was partially cancelled by Fresno County in March 2007, with the sites for the proposed project and adjacent proposed Panoche project subject to the partial cancellation. (FSA 4.9-8)

Construction and operation activities for managing erosion and storm water must be addressed to avoid potential adverse impacts to water quality and soil resources. Accelerated wind and water-induced erosion may result from earth moving activities associated with construction of the proposed project. Alteration of the soil structure leaves soil particles vulnerable to detachment and removal by wind or water. Soil erosion can cause the loss of topsoil and can increase the sediment load in surface receiving waters downstream of areas affected by power plant construction and operations. Increasing the amount of impervious surfaces would increase the amount of runoff and peak discharges. Runoff from storm water can also convey contaminants to soil, groundwater and surface water if hazardous materials and waste are not properly stored, handled and disposed as applicable. (FSA 4.9-14)

The site will drain gradually to the evaporation basin. With implementation of Best Management Practices (BMP) including stabilizing construction entrances, applying water for dust suppression, placement of silt fencing, berms, and hay bales as needed, and conveying all storm water to the evaporation basin, erosion would be reduced to less than significant and water quality would not be affected by any off-site discharges.

During SPP operations, industrial storm water would be conveyed by overland flow and swales to the evaporation basin located on site. The evaporation basin would serve to collect about 85% of the annual storm water runoff, and would manage the peak storm discharge from the site during runoff from a 100-year 24-hour event. All runoff from the site be treated as industrial storm water and that it be directed to the evaporation basin. (FSA 4.9-15)

The Draft Construction Drainage Erosion and Sediment Control Plan/Storm Water Pollution Prevention Plan (DESCP/SWPPP) submitted by the Applicant provides erosion control BMPs to address soil erosion. Implementation of an approved DESCP will limit erosion and control drainage to avoid significant adverse impacts to soils and water quality in conformance with Condition of Certification **WATER QUALITY AND SOILS-1**.

The Applicant will comply with the requirements of the National Pollution Discharge Elimination System (NPDES) including preparation of a Storm Water Pollution Prevention Plan for Construction Activity for control of runoff from the site. (**WATER QUALITY AND SOILS-1)** (FSA,4.9-15)

The Applicant will develop a site-specific final Drainage, Erosion and Sedimentation Control Plan (DESCP) that addresses all project elements and ensures protection of water and soil resources for the construction and operational phases of the project. (**SOIL & WATER-2**)

The Applicant will comply with all requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity, including the development and implementation of an operational Storm Water Pollution Prevention Plan (SWPPP). The SPP has included design features to isolate storm water from hazardous materials and equipment. Liquids storage areas are designed with spill containment. (**SOIL & WATER-3**)

The proposed construction scheduling and methods for erosion and drainage control, including the development of a Final DESCP and a SWPPP for Construction Activity will avoid significant adverse impacts from soil loss and erosion during construction. A SWPPP for industrial activity will avoid such impacts during project operation. (FSA, 4.9-15)

MITIGATION

☑ The Project Owner shall prepare a site-specific Drainage, Erosion and Sedimentation Control Plan. Condition: **WATER QUALITY AND SOILS-21.**

☑ The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm water Associated with Construction Activity and Industrial Activity. Conditions: **WATER QUALITY AND SOILS-1 and WATER QUALITY AND SOILS-3.**

Wastewater

Regardless of source, the SPP would pump raw process water to the on-site reverse osmosis (RO) filtering system, which will generate 25 gpm of reject water. The reject water will be evaporated in a 25,000-square-foot (surface area) evaporation pond lined with a polyethylene liner, resulting in a residue that will be disposed of in a landfill. The use of the evaporation pond is similar to a zero liquid discharge process where no wastewater leaves the site that could degrade either surface water or groundwater.

Therefore, an evaporation pond, when managed with care, is an acceptable wastewater disposal technique. To further ensure that SPP employs a reliable wastewater system, Condition of Certification **SOIL&WATER-5** requires that a report of waste discharge be filed with the Central Valley Regional Water Quality Control Board to obtain waste discharge requirements. The report of waste discharge will be filed early in the design process so the evaporation pond facilities are constructed in accordance with the requirements.

If the evaporation pond reaches maximum capacity, the Applicant has proposed to shut down the RO system temporarily. With the RO system shut down, the demineralization units will continue to process raw water. All other liquid wastes generated by the project will flow by gravity to oily-water sumps that then pump the liquid waste to a 4,700-gallon tank that will be used to temporarily store the waste before it is hauled off site for disposal.

No significant adverse impacts are expected from any SPP wastewater discharge after adoption and implementation of Condition of Certification **WATER QUALITY AND SOILS-5**. (FSA, 4.9-29, 21)

MITIGATION

- ☑ The project owner shall comply with the waste discharge requirements of the Central Valley Regional Water Qualify Control Board regarding its wastewater evaporation pond. Condition: **WATER QUALITY AND SOILS–5.**

Cumulative Impacts

Temporary and permanent disturbances associated with construction of the proposed project will cause accelerated wind- and water-induced erosion. However, Staff has concluded that the implementation of proposed mitigation measures, the storm water pollution prevention plan and the drainage, erosion, and sediment control plan will ensure that the project will not contribute significantly to cumulative erosion and sedimentation impacts.

The process wastewater from the SPP will be conveyed to the on-site 25,000 square-foot lined evaporation pond and allowed to evaporate. Therefore, there will be no process wastewater discharge off-site. The residue after evaporation will be hauled to an appropriate landfill. Additionally, oily and chemical laden drain water would be

contained and transported off-site to be properly disposed. Therefore, no wastewater-related cumulative impacts are expected.

The SPP will use a maximum of 136 acre-feet of water a year. Staff has not identified any nearby development projects or activities, including the Panoche Energy Center, Federal Medium Security Prison, City of Mendota, or drought related water use that will be affected by the use of semi-confined aquifer groundwater for the SPP.

The storm water discharge would not exacerbate flooding conditions in the area. Wastewater discharge from the site is not expected with the shut down of the reverse osmosis system if the evaporation pond reaches capacity. (FSA, 4.9-20.)

Findings

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

CONDITIONS OF CERTIFICATION

SOIL&WATER-1: The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) permit for discharges of storm water associated with construction activity. The project owner shall develop and implement a storm water pollution prevention plan for the construction of the entire Starwood Power Project (SPP).

Verification: The project owner shall submit copies to the compliance project manager (CPM) of all correspondence between the project owner and the Central Valley Regional Water Quality Control Board (RWQCB) regarding the General NPDES permit for the discharge of storm water associated with construction activities within 10 days of its receipt (when the project owner receives correspondence from the RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB). This information shall include copies of the notice of intent sent to the State Water Resources Control Board, and the notice of termination for the project.

SOIL&WATER-2: 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 and all linear facilities for both the construction and operation phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements, and identify all monitoring and maintenance activities. Monitoring activities shall include routine measurement of the volume of accumulated sediment in the stormwater retention basin. Maintenance activities must include removal of accumulated sediment from the retention basin when an average depth of 0.5 feet of sediment has accumulated in the

retention basin. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1 and may incorporate by reference any storm water pollution prevention plan developed in conjunction with any NPDES permit. The DESCP shall contain the following elements:

Vicinity Map – A map shall be provided indicating the location of all project elements with depictions of all significant geographic features to include watercourses, washes, irrigation and drainage canals, and sensitive areas.

Site Delineation – The site and all project elements shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

Watercourses and Critical Areas – The DESCP shall show the location of all nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site.

Drainage – The DESCP shall provide a topographic site map showing all existing, interim, and proposed drainage systems. drainage area boundaries and watershed sizes in acres, and the hydraulic analysis to support the selection of best management practices (BMPs) to divert off-site drainage around or through the site and laydown areas. Spot elevations shall be required where relatively flat conditions exist. The spot elevations and contours shall be extended off site for a minimum distance of 100 feet in flat terrain.

Clearing and Grading – The plan shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and 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 tying in proposed contours with existing topography shall be illustrated. The DESCP shall include a statement of the quantities of material excavated or filled for each element of the project (for example, project site, transmission corridors, and pipeline corridors), whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported or a statement explaining that there will be no clearing and/or grading conducted for each element of the project.

Project Schedule – The DESCP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each project element for each phase of construction.

Best Management Practices – The DESCP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment-control BMPs applied to disturbed areas following construction.

Erosion Control Drawings -- The erosion-control drawings and narrative shall be designed and sealed by a professional engineer or erosion-control specialist.

Verification: No later than 90 days prior to start of site mobilization, the project owner shall submit a copy of the plan to Fresno County for review and comment. A copy shall be submitted to the CPM no later than 60 days prior to the start of site mobilization for review and approval. The CPM shall consider comments received from Fresno County. 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-3: The project owner shall comply with the requirements of the general NPDES permit for discharges of storm water associated with industrial activity. The project owner shall develop and implement a storm water pollution prevention plan for the operation of the site.

Verification: At least 30 days prior to commercial operation, the project owner shall submit copies to the CPM of the operational storm water pollution prevention plan for the entire SPP site. Within 10 days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the RWQCB about the general NPDES permit for discharge of storm water associated with industrial activity. This information shall include a copy of the notice of intent sent by the project owner to the State Water Resources Control Board and the notice of termination. A letter from the RWQCB indicating that there is no requirement for a general NPDES permit for discharges of storm water associated with industrial activity will satisfy this condition.

SOIL&WATER-4: Prior to operation, the project owner shall comply with the waste discharge requirements issued by the Central Valley Regional Water Quality Control Board regarding the evaporation pond facility. The project owner shall report to the CPM any notice of violation, cease and desist order, clean-up and abatement order, or other enforcement action taken by the RWQCB related to the waste-discharge requirements. The project owner shall describe all actions taken to correct violations and operate the project in compliance with waste-discharge requirement permit conditions. The project owner shall provide confirmation from the RWCQB that any violations have been resolved to the satisfaction of the RWQCB.

Verification: The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB regarding the waste discharge requirements within 10 days of its receipt (when the project owner receives correspondence from the RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB). This information shall include copies of the report of waste discharge sent to the State Water Resources Control Board and copies of the waste discharge requirements and final approval of the evaporation pond design. Final RWQCB waste-discharge requirements and evidence of an approved constructed evaporation pond must be received by the CPM prior to start of commercial operation and/or discharge of waste to the ponds. The project owner shall report violations and the final resolution of the violation within 10 days of notice by the RWQCB. A letter from the RWQCB in which it is stated that waste discharge requirements are not needed will satisfy this condition.

SOIL&WATER-5: The project owner shall shut down the reverse osmosis system if the evaporation pond reaches maximum capacity to avoid any evaporation pond overflow.

Verification: The project owner, in the annual compliance report, shall provide a wastewater-accounting summary that states the amount of waste water in acre-feet discharged into the evaporation pond and the quantity of residue in pounds or tons removed and disposed of for each year. The project owner shall provide a written description within 30 days of any incident where the evaporation pond fills and the reverse osmosis system had to be shut down.

SOIL&WATER-7: The project owner shall comply with chapter 15.48 of title 15 of the Fresno County Ordinance Code, regarding flood hazard and base flood elevation.

Verification: The project owner will submit a letter in which it is stated that the project has complied with the county's flood-elevation requirements. Proof of compliance must be provided to the CPM prior to the start of site mobilization.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

WATER QUALITY & SOILS

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Clean Water Act; 33 U.S.C. §1251 et seq.	Regulates discharges of wastewater and storm water. Applies to wastewater discharged from cooling tower basins and storm water runoff. These discharges are subject to NPDES permits obtained through the RWQCB at the state level.
Resource Conservation and Recovery Act	The Resource Conservation Recovery Act (RCRA) of 1976 (40 CFR Part 260 et seq.) seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes.
STATE	
Porter Cologne Water Quality Control Act, Water Code §13000 et seq.	Established jurisdiction of nine RWQCBs to control pollutant discharges to surface and groundwater.
SWRCB Water Quality Order Nos. 91-13-DWQ and 92-08-DWQ	Regulates industrial storm water discharges during construction and operation. These discharges subject to NPDES permits obtained through the RWQCB.
Safe Drinking Water and Toxic Enforcement Act (Prop. 65)	Prohibits the discharge of any substance known to cause cancer or birth defects to sources of drinking water.
LOCAL	
County of Fresno Ordinances Building & Construction, Grading & Erosion Chapter 15.28 Street & Utility Improvement Chapter 17.68 Water & Sewage Chapter 14.04 & 14.08	The County of Fresno has permit requirements associated with Grading and Erosion Control, Encroachment Permits and securing a Franchise Agreement for the natural gas and recycled water lines within County right-of-ways and requirements associated with a Well Drilling Permit.
Fresno County Department of Community Health, Environmental Health System, California Well Standards Ordinance and California Well Standards, Bulletins 74-81 and 74-90	The Fresno County Environmental Health System regulates the construction of new water wells; the reconstruction, repair or deepening of existing wells; and the destruction of abandoned wells in unincorporated Fresno County.
Fresno County General Plan, Water Quality Policies OS-A.23 through OS-A.30 and Programs OS-A.A through OS-AD	The purpose of these policies and programs is to help control potentially significant impacts of development, including non-point sources of water pollution, such as runoff from urban areas, grading, construction, and agricultural activities.
Fresno County Department of Health and Safety, Fresno County Ordinance Code 8.50.050 4-B	Any place for the disposal of sewage, feculent matter, etc. which has been produced or formed as a result of or incidental to the operation of any industrial plant requires an environmental health permit and is subject to inspection fees.
Fresno County Ordinance Title	Fresno County Ordinance Title 15 requires that projects within the hazard

15	zone be raised to ensure that, in the event of a 100-year storm, the site and equipment is not subjected to any flood damage.

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WATER RESOURCES – Summary of Findings and Conditions

	POWER PLANT SITE	*CUMULATIVE IMPACTS*	*LORS COMPLIANCE*
Water Supply Policy	**MITIGATION**	**NONE**	**YES**
	To assure the conservation of high-quality potable water, the project shall use degraded CalPeak groundwater for plant operations such as inlet air cooling and water injection for NOx control. The project would use bottled potable water for personnel use. **MITIGATION** ☑ The project owner shall use degraded CalPeak groundwater for facility operation to avoid potential life-of-the-project impacts to aqueduct-quality water supplies. Condition: **WATER RESOURCES–1.**		

WATER RESOURCES – GENERAL

The SPP requires water for inlet fogging ("misting" of inlet air) and water injection for NOx control. At its expected annual operating capacity of 400 hours, the project water use would be 14 acre-feet per year. However, since the SPP is seeking permitting for 4,000 annual hours of operation, the maximum water requirement is 136 acre-feet per year. Proportionally, peak water usage would be 71 percent water for NOx control and 29 percent for inlet fogging. (AFC 5.5-9)

The SPP would include a water treatment system using a reverse-osmosis (RO) unit that would feed a demineralizer to provide high-purity water to the gas turbines for water injection/inlet fogging. The water treatment system would include one 75,000-gallon raw water storage tank, a RO unit, a mobile water treatment system, two 75,000-gallon demineralized water storage tanks, and a forwarding system to deliver the demineralized water to the gas turbines. An on-site evaporation pond would collect waste discharge water from the RO unit. (FSA 4.9-8)

The Applicant initially proposed three potential water supplies:

- **Semi-confined Aquifer (CalPeak well water)** contains low-quality non-potable groundwater from the existing CalPeak Panoche peaker power plant well. Total dissolved solids (tds) are approximately 3,400 mg/L. This degraded groundwater is not expected to supply a domestic, agricultural or public water system due to its high tds. Use of the CalPeak well water requires the construction a new 1,200-feet water pipeline.

- **Baker Farms Irrigation Water Filter Backwash** is derived from filtering approximately 24,000 acre-feet of fresh aqueduct-quality irrigation water annually. This wastewater is discharged to a series of evaporation ponds.

Using Baker Farm irrigation water filter backwash would require constructing an approximately two mile four-inch diameter pipeline from the evaporation pond collection system to the SPP site. The filter backwash water has total dissolved solids (tds) of approximately 170 mg/L.

- **Confined Aquifer Deep Well** groundwater is derived from a new 1,500-foot deep well located on-site adjacent to the Reverse Osmosis unit. The groundwater in the confined aquifer has moderately high tds concentrations (820-1,100 mg/L) and is used for domestic purposes by local residents and as a backup to curtailments on deliveries of CVP water for agricultural purposes in the area. (FSA 4.9-10, 11)

Staff's Position

The Energy Commission staff concluded in its Final Staff Assessment that use of the CalPeak well water conforms to applicable State Water Policies and causes no significant environmental impacts. However, Staff believes that use of either the filter backwash water or the deep aquifer well water would not be consistent with the California State Water Resources Control Board (SWRCB) Resolution No. 75-58 or the Energy Commission 2003 Integrated Energy Policy Report (IEPR) policy addressing the use of fresh inland water for power plant cooling. Staff also considered the deep-well confined aquifer to be fresh water as defined by Title 22, and the SWRCB's Policy 75-58 and Resolution 88-63. (FSA 4.9-11)

Applicant's Position

The Applicant contested Staff's review and opinions regarding the applicability of Resolution 75-58, etc., to a simple cycle project and to the use of filter backwash water in an Evidentiary Hearing conducted November 19, 2007, and presented environmental information and legal support for the use of the filter backwash water for project operation.

Discussion

The principle contested issue is the applicability of SWRCB Resolution 75-58 policy, supported in the IEPR, identifying the use of fresh inland water for *power plant cooling* as an unreasonable use and only to be permitted if other sources or other methods of cooling would be environmentally undesirable or economically unsound.

CalPeak Well Water

The Applicant proposed to use the existing CalPeak semi-confined aquifer well adjacent to the SPP site. The well will provide up to 136 acre-feet of water per year to the SPP, which is sufficient to meet the peak water demand of the project. The semi-confined aquifer is the lowest quality water reasonably available for the SPP project, with a total dissolved solids (tds) level of 3,400 mg/L. (FSA 4.9-12, 15, 16, 19)

The availability of groundwater depends on aquifer conditions, recharge and competition for these resources. The project site is located in the upper portion of the Panoche alluvial fan. The local aquifer conditions reported by the United States

Geological Service are well within the requirements needed to support pumping rates required by the project. (FSA 4.9-16)

Overall, recharge to the semi-confined aquifer significantly exceeds demand for this supply. Under current conditions, the primary source of recharge to the semi-confined aquifer is percolation from agricultural irrigation. The recharge to the semi-confined aquifer from Westlands is about 80,000 acre-feet per year from surface water irrigation alone. However, consumption of water from the semi-confined aquifer is very limited.

In the area of the proposed project, the semi-confined aquifer is generally not used because water quality is too poor for most agricultural and domestic uses. The proposed CalPeak Power Peaking Plant (occasional use) is the only other potential user of the semi-confined aquifer near the SPP. (FSA 4.9-16) In the pending Panoche Energy Center project, Staff reviewed the potential use of the semi-confined aquifer as a water source, even though that Applicant chose the deep aquifer as its water source.

The semi-confined aquifer does supply municipal water to several small towns near the San Joaquin River, east of the proposed SPP site. The semi-confined aquifer near the river is composed of Sierran sands and, therefore, produces much better quality water than the project site. The nearest town, Mendota, which is located about 12 miles east of the SPP project, has a population of less than 10,000. Mendota's annual water consumption is approximately 2,500 acre-feet, based on typical residential water use of one acre-foot for a family of four. In addition, the new prison planned for Mendota would use groundwater for domestic and sanitary needs. Prison complexes do not have the landscaping-water requirements that homes frequently require. Therefore, based on prison projections, the fresh water demand would be approximately 600 acre-feet per year. The other small communities in the region would use similar quantities of water to meet municipal demands. Given the limited use of the semi-confined aquifer and the distance between the project site and the nearby towns, project use of the semi-confined aquifer would have a negligible effect on municipal wells. (FSA 4.9-16, 17)

To be useable for the project, the CalPeak well water needs to be filtered and treated. Reverse osmosis (RO) and demineralization are processes that would purify SPP's proposed water supply from the semi-confined aquifer well water. (The same systems would be used to purify the other potential water sources.) Well water will be pumped at a rate of up to 100 gallons per minute (gpm) to the on-site facility where the water will be filtered and then treated by RO. The treated water would flow at a rate of approximately 75 gpm into the raw water storage tank. Approximately 25 gpm of RO reject water would be generated. If the tanks are being fed at the same time that water is being withdrawn from the system, the tanks have a storage capacity of approximately 37 hours. In short, as part of SPP design, ample storage has been included to meet water-supply demand. (FSA 4.9-12)

The reject water will be evaporated in a 25,000-square-foot (surface area) evaporation pond lined with a polyethylene liner, resulting in a residue that will be disposed of in a landfill. The use of the evaporation pond is similar to a zero liquid discharge process where no wastewater leaves the site that could degrade either surface water or

groundwater. Therefore, an evaporation pond, when managed appropriately, is an acceptable wastewater disposal technique. (FSA 4.9-19)

The semi-confined aquifer groundwater at the project location is not considered "fresh inland water" due to the high tds and salinity levels and because it is not a suitable source of domestic, municipal, or agricultural water supply as is evident by local practices.

Well Interference

When a project pumps groundwater, well interference impacts can occur, such as substantial and unacceptable declines in groundwater levels in existing nearby wells. Well interference impacts can also include increases in pumping lift and the declines in well productivity or usability. Declines in groundwater level may require costly modifications including the cost of lowering pumps or the cost of deepening a well. Substantial increases in pumping lift can cause significant increases in energy costs.

Well interference with the proposed Panoche Energy Center (PEC) well is the only direct potential adverse impact which could be caused by the project's use of the semi-confined aquifer. If PEC were to use the semi-confined aquifer as an alternative to its proposed supply from the confined aquifer, the potential water supply well for the PEC project is the only well identified near the proposed project that may pump water from the semi-confined aquifer with any regularity other than the existing Calpeak well. (FSA 4.9-17)

If the proposed PEC project also pumped from the semi-confined aquifer, the effect on the existing SPP/Calpeak well would be on the order of 10 feet of drawdown. This would be less than significant considering SPP's water demands are about 138 gpm compared to PEC's that would be approximately 642 gpm, SPP would have even less well interference effect on PEC. Based on the volume of water in the aquifer and the annual recharge rate, well interference impacts would not be significant. (FSA 4.9-17)

Baker Farms Filter Backwash Water

The Baker Farming Company, LLC, which farms approximately 7,000 acres of land in the area, produces sufficient quantities of filter backwash water from their irrigation practices to supply the site with water required for operation. Since most of the water is initially delivered to Baker Farms via an open canal, before water can be used for agricultural purposes, it must be filtered to remove entrained suspended solids (algae, garbage, dirt, etc.). Filtration occurs though a series of sand filters, placed strategically within the water delivery system. The filtered water is then distributed to the agricultural fields. (Alt. Water Supply Analysis, 1-1)

Approximately 24,000 acre-feet of water is utilized in the Baker Farms operations annually. Due to the large volumes of water pumped, it is necessary to clean the sand filters every 3 to 6 hours, depending on the season. This is accomplished by backwashing the sand filters. Each backwash flush cycle takes 2 minutes with a water flow rate of 300 gallons per minute per filter. There are approximately 162 filters which

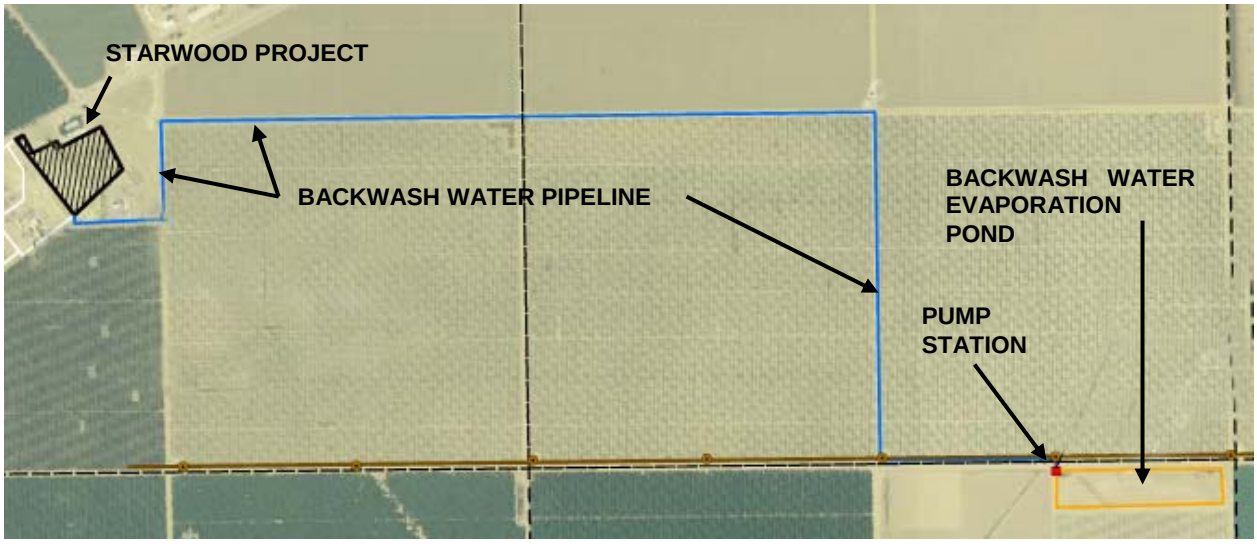
generate 97,000 gallons of wastewater each filter cleaning cycle. The filter wastewater contains suspended solids removed from the irrigation water. The Baker Farms operations produce 160 acre-feet of wastewater on an annual basis. The peak season for this water flow is during the irrigation period, April to September. (Alt. Water Supply Analysis, 1-1)

The wastewater is sent to a number of local settling ponds where the suspended solids precipitate out of solution. Historically, the wastewater was disposed of through evaporation and percolation. To efficiently dispose of wastewater, Baker Farms is in the process of connecting a number of small wastewater settling ponds to a large, centrally located evaporation pond. The network of pipes that Baker Farms is installing to tie the small ponds to the large pond are, at the closest distance, 1.5 miles southeast from the power plant site running along an existing dirt road used and maintained by Baker Farms. (Alt. Water Supply Analysis, 1-1)

The backwash pond is currently 8.0 acres in size and has the capacity to store approximately 80-acre feet of water. However, the backwash pond is relatively shallow which allows for faster percolation and/or evaporation due to high surface area exposure. Once the small ponds are tied to the large pond Baker Farms will deepen the west end of the pond (reducing the pond's size to approximately 3.0 acres) which will allow for the pond to store approximately 40-acre feet of water for a longer period of time (due to reduced surface area exposure). (Alt. Water Supply Analysis, 1-3)

A pump station will be placed immediately adjacent to the existing agricultural backwash pond. The pump station will have a footprint of approximately 25 square feet, and will be set on a concrete slab. The pump is expected to operate at approximately 150% of the total operating hours of the project (e.g. estimated at 600 hours a year for the 400 hours of operation) concentrated in the summer months of June, July, August, and September. The prefabricated 25 kW electric pump will be powered via connection to an existing overhead local distribution electrical line system located along W. Lincoln Avenue. (Alt. Water Supply Analysis, 1-2)

While the backwash pond is located approximately 1.5 miles southeast from the Midway site, due to the zigzag of the agricultural roads, approximately 2.0 miles of new water pipeline will need to be constructed. The agricultural roads are graded and are currently utilized by Baker Farms for agricultural production activities. The water pipeline will be laid 3-feet below grade. Construction of the water pipeline will involve excavation of a trench (approximately 2 feet wide and 3 feet deep), placement of the 3-inch diameter water pipe, and subsequent burial with compacted fill soil using the excavated soils from the trench for backfill. (Alt. Water Supply Analysis, 1-2)



When the water pumped to the SPP from the backwash pond reaches the site it will be sent through a sand filter to remove any solid debris or other particulate materials in the water. The water will then be routed from the sand filter to the reverse osmosis (RO) unit. In addition to storm water runoff, an on-site unlined evaporation pond will collect discharge wastewater from the RO unit as well as periodic sand filter backwash. (Alt. Water Supply Analysis, 1-3)

Construction of the water pipeline, pump station, and all other associated activities are expected to take place over a one month period during the same 10 month construction period. (Alt. Water Supply Analysis, 1-3)

By comparison, the CalPeak upper aquifer well water has total dissolved solids (tds) of 3,400 mg/L; whereas the backwash pond water has a tds of 170 mg/L. Therefore, the backwash pond has better quality water than water from the upper aquifer associated with the groundwater well at CalPeak Panoche. (Alt. Water Supply Analysis, 2-4)

Project operation will generate wastewater discharge from the RO unit. The estimated quality of wastewater (RO reject water) that results from use of CalPeak upper aquifer groundwater has a tds of 13,600 mg/L. The estimated quality of RO reject water that results from use of the filter backwash water is a tds of 340 to 510 mg/L. (Alt. Water Supply Analysis, 2-4)

The use of the degraded CalPeak well water requires an on-site double-lined evaporation pond for disposal of wastewater via atmospheric drying. This is due to the high tds of the RO reject water that results from use of upper aquifer as the facilities water supply (approximately 10,200 mg/L tds higher than the tds of the underlying aquifer). However, since the RO reject water resulting from use of the backwash pond would have a much lower tds than the underlying aquifer (approximately 2,890 mg/L lower tds), a lined evaporation pond would not be required. Thus, this water supply alternative would eliminate the requirement for a double-lined evaporation pond with associated monitoring wells, while still providing storm water retention for the Project. (Alt. Water Supply Analysis, 2-5)

Resolution 75-58

California Water Code section 13550 *et seq*., and State Water Resources Control Board Resolution 75-58 identify the use of potable or fresh inland water for *power plant cooling* as unreasonable use and only to be permitted if other sources or other methods of cooling would be environmentally undesirable or economically unsound. The Energy Commission's 2003 and 2005 Integrated Energy Policy Reports (IEPR) also address water use by power plants.

The SPP is a simple cycle combustion turbine. The project's water uses are inlet air cooling and water injection for NOX control. There is no steam cycle associated with the simple cycle turbine and thus the project does not include a condenser or a cooling tower.

Average water use associated with the expected 400 hours of annual project operation is approximately 14 acre-feet. Inlet fogging represents 29 percent of the water use, or 4.0 acre-feet. Water injection for NOx control represents 71 percent of water use, or 10.0 acre-feet. The maximum annual water use for the project would be 136 acre-feet if operating a maximum of 4,000 hours a year.

The Applicant contends that the SWRCB Resolution 75-58 and the corresponding IEPR policy do not apply to this simple cycle project because Resolution 75-58 expressly applies to water use for only a "steam cycle" power plant and their inherently necessary cooling water systems.

On the other hand, Commission staff contends that SWRCB Resolution 75-58 should be interpreted to apply to water used for "any cooling purpose" which it contends would include only inlet fogging for this project. Thus, given the lower TDS of the filter backwash water, Staff claims it is inland fresh water and not useable by the project since the higher TDS CalPeak well water is available.

Notwithstanding that the parties have raised the issue of the applicability of Resolution 75-58 and the IEPR policies to the SPP, the Commission does not need to reach the issue in order to evaluate the project's potential impact upon water resources using our environmental review responsibilities. Modern generating technologies and their water uses have evolved since the Resolution was adopted in 1975. The comprehensive reach of CEQA should take that evolution into account, while being mindful of the water conservation goals and hierarchy of water supplies embedded in the State water policy.

Based upon the Applicant's Alternative Water Analysis, the filter backwash water to be sold to the SPP is "waste" water from the Baker Farms operation. The 160 acre-feet of backwash water is a scant 0.6 percent of the total water use of 24,000 acre-feet. Based upon the Applicant's testimony, we find that construction of the pumping station and pipeline between Baker's evaporation pond and the SPP will not create any significant environmental impact for air quality, biology, cultural resources, noise, public health, visual resources, waste management, water quality or any traditional CEQA concern.

The use of this high-quality water would also mean that the project's reject ("waste") water from filtering the backwash water would no longer have to be held in a lined evaporation pond. Consequently, any potential impact to wildlife using the evaporation pond waters would be less than with the degraded CalPeak well water. The reject water from the backwash water would be allowed to either evaporate to the atmosphere or percolate back into the groundwater, whereas the reject water from the degraded well water would not be allowed to percolate into the ground. Instead, for the use of degraded well water, the evaporation pond would have to be double lines and a monitoring well established to assure the reject water was not percolating into the ground. Additionally, if degraded well water were used, the dried debris from the bottom of the evaporation pond would be a more hazardous waste in terms of its disposal at an appropriate landfill.

The use of the backwash water would put to use water that, as of now, would otherwise just evaporate to the atmosphere or percolate into the ground. The degraded CalPeak water would be left in the ground, allowing for the present a zero-net-effect from the project. While banking such degraded groundwater for future use would be highly beneficial if the aquifer were over-drafted, in this circumstance, the aquifer is constantly and fully recharged by irrigation, and there is little demand for this degraded water at this location since it is not economically useable for irrigation or domestic purposes.

The Commission renders its siting decisions in a public interest context where conservation of high-quality California water is increasingly more critical particularly in light of global climate change as it affects the meteorology of our region together with increasing water demand. Thus, to avoid a CEQA-based impact to California's interest in conserving high-quality water resources *over the life of the project*, the Commission should require the project to use the lowest quality water reasonably available, absent a compelling showing to do differently. Applicant has made no such showing in this case, nor has it attempted to do so. Applicant, therefore, must use the degraded CalPeak well water, rather than the aqueduct-derived high-quality Baker Farms filter backwash water.

By its letter of November 19, 2007, the Westlands Water District expressed its opposition to the use of the filter backwash water, stating that "such water should be used for irrigation or other uses that are incidental to agricultural production." Our finding and the Westlands opinion are in accord.

The Energy Commission staff testimony, revised from its FSA, would allow the use of the Baker Farms backwash water if the Applicant were to pay money to the Westlands Water District which would in turn invest in high-quality irrigation water conservation programs. The concept is that the use of high-quality water at the power plant would be offset by irrigation water-saving technologies and practices so that the net effect on the supply of high-quality water is zero. (Supp. Testimony Anderson/Goulet, pp. 2-6) The Applicant declines to pay the financial mitigation suggested by Staff, believing that its recovery and beneficial use of the filter backwash water is, in effect, a comparable conservation effort. (11/19/07 RT 76:18 – 77:23)

While there are circumstances which warrant the use of water conservation offset programs, by applying CEQA here, the Commission finds that the use of the Baker Farms backwash water should not be allowed, even if packaged with a water conservation offset plan with the Westlands Water District. Since lower quality water is available, it is not in the public interest to potentially vest a right to use the higher quality aqueduct-derived water for the 30-year or more (AFC 3-48) life of the project based on the assumption, which is not supported by any evidence in the record, that such high-quality water will continue to be available for the next 30 years.

This finding is, coincidentally, supported by the broader information before the Commission today (obtained in connection with the Commission's greenhouse gas reduction activities) that the supply of this high-quality water will likely contract due to foreseeable climate conditions and that demand will increase. Thus, we reiterate our conclusion that in the absence of a compelling showing, which has not been made in this case, the project must use the lowest quality water reasonably available, which is the CalPeak degraded well water.

MITIGATION

☑ The project owner shall use degraded CalPeak groundwater for facility operation to avoid potential life-of-the-project impacts to aqueduct-quality water supplies. Condition: **WATER RESOURCES–1.**

Deep (Confined) Aquifer Well Water

SPP also proposed utilizing a new 1,500-foot deep well to access the confined aquifer water. This new well would be located on-site adjacent to the RO unit in order to limit the amount of piping needed. The deep well would access the confined aquifer water located below the Corcoran Clay formation. The groundwater in the confined aquifer has moderately high TDS concentrations (820-1,100 mg/L) and is used for domestic purposes by local residents and as a backup to curtailments on deliveries of CVP water for agricultural purposes in the area. (FSA 4.9-11)

The Applicant has not pursued this option or, as the Panoche Energy Center, agreed to a conservation offset plan with Westlands to save aqueduct-quality water in exchange for using this lesser quality deep well groundwater.

The predominant land use near the proposed project is large-scale farms. The Westland Water District reports that agricultural wells in this area use water exclusively from the confined aquifer as a backup to curtailments in CVP water because the semi-confined aquifer is too saline for irrigation. Westlands reports that agricultural wells near the project site typically have a production capacity of 1,400 to 1,800 gpm and are spaced every quarter mile in this area. Therefore, given the location and the production capacity of the CalPeak well, project pumping would have no significant affect on existing agricultural wells. (FSA 4.9-18)

In an agricultural area with large farms and a history of groundwater use, such as Westlands, large fluctuations in drawdown would be normal. Wells are constructed and

equipped to handle large changes in water level. Therefore, drawdown caused by project pumping would not impact the usability of existing wells. Well interference impacts from the project wells would be limited to a less than significant increase in the cost of increased pumping lift. Therefore, well interference impacts to existing well owners caused by project pumping from the confined aquifer would be less than significant. (FSA 4.9-18)

Well Interference

Project pumping could potentially cause upwelling or transport of groundwater with higher concentrations of saline water into the freshwater aquifer, causing degradation of aquifer quality. Westlands reports that agricultural wells in the vicinity of the project site draw water exclusively from the confined aquifer and typically have a production capacity of 1,400 to 1,800 gpm. The maximum pumping rate proposed by the SPP (100 gpm) is much less than the typical range of agricultural pumping rates for the area. Based on local conditions and proposed project's well placement data and pumping rates, the project will cause no significant degradation of the confined aquifer. (FSA 4.9-19)

As with the filter backwash water, we find in the execution of our CEQA function that the CalPeak well water is lower quality water than the deep aquifer groundwater and is reasonably available for the project. We note again that the Applicant has not actively pursued this deep aquifer groundwater as the project's water source or agreed to a conservation offset plan to conserve higher quality water than is being consumed by the project. Consequently, we do not approve the deep aquifer water for use in the project.

Construction

During construction, the project would use approximately 300,000 gallons for dust control. The Applicant has not specified the source of such water, but believes it could come from the CalPeak well water, Baker Farms, or the contractor's sources. This temporary and low volume use does not cause a significant impact to water resources. (11/19/07 RT 10:25 – 12:7)

Cumulative Impacts

Cumulative impacts consist of impacts that are created 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.

Staff has not identified any nearby development projects or activities, including the Panoche Energy Center, Federal Medium Security Prison, City of Mendota, or drought related water use that will be affected by the use of semi-confined aquifer groundwater for the SPP. (FSA 4.9-20)

Overdraft is defined as the withdrawal of groundwater in excess of the safe yield of the basin. Safe yield (also called perennial yield) is the long-term average amount of water that can be withdrawn from a groundwater basin without producing an undesired result. In most cases, including the use of groundwater for power plant operations, overdraft is a cumulative impact. Typically, the perennial yield of a basin is measured in hundreds of thousands of acre-feet. Overdraft occurs as the result of the cumulative impact of pumping by many wells.

However, a significant, sustained increase in groundwater use and reoccurrence of overdraft is unlikely to occur for several reasons. First of all, groundwater pumping rates would have to exceed the perennial yield for a sustained period of years for overdraft to reoccur. As long as Westlands has access to CVP water, groundwater water will be used only as a supplemental supply. Surface water is preferable to groundwater for irrigation because the quality of the surface water supply is far better than the quality of groundwater and, thus, increases crop productivity and the range of crops that can be grown. (FSA 4.9-21)

More importantly, agriculture in the western San Joaquin Valley can no longer be economically sustained with groundwater alone. The increase in the cost of energy, which affects pumping lift costs, must be offset by growing high-value crops. However, high-value crops are sensitive to water quality and cannot be irrigated with groundwater alone. In addition, regional soils are becoming increasingly saline, which makes soils increasingly toxic to crops. Irrigation with groundwater will accelerate this process. Blending of the surface and groundwater supplies is currently occurring, and the proportion of groundwater may increase. However, a reliance on groundwater and a return to historical pumping rates is not probable because of groundwater and soil salinity. (FSA 4.9-21)

Given the current rates of groundwater pumping, the western San Joaquin aquifer system is not overdrafted and subsidence has been halted. Staff has identified no probable, reasonably foreseeable conditions that would cause a long-term significant increase in groundwater use for the region. Therefore, SPP pumping from either the semi-confined or confined aquifer will not contribute to cumulative overdraft or subsidence effects. (FSA 4.9-21)

Findings

With the implementation of the Condition of Certification, as described in Water Resources, the project conforms to applicable laws related to water resources and all potential water resource impacts will be mitigated to insignificance.

CONDITION OF CERTIFICATION

WATER RESOURCES-1: Water used for project operation for process, sanitary and landscape irrigation purposes shall be groundwater from the upper semi-confined aquifer obtained from the adjacent CalPeak well. Water use shall

not exceed the annual water-use limit of 136 acre-feet without prior approval by the CPM. The project owner shall monitor and record the total water used on a monthly basis.

Verification: The project owner, in the annual compliance report, shall provide a water-accounting summary that states the source and quantity of water used on a monthly basis in units of gallons and on an annual basis in units of acre-feet. If the amount of water that is to be used will exceed 136 acre-feet per year during any single annual reporting period, the project owner shall provide a written request and explanation for the anticipated water-use increase to the CPM 60 days prior to the date when the water-use limit is expected to be exceeded. The CPM shall review the request and may approve an increase in the water-use limit for the period requested.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

WATER RESOURCES

APPLICABLE LAW	DESCRIPTION
FEDERAL	
STATE	
State Water Resources Control Board Policy 75 – 78; California Water Code, Sections 461 and 13552, and by Water Commission Resolution 77-1	SWRCB Resolution 75-58, discourages the use of fresh inland water for power plant cooling and prioritizes the source water of power plant cooling water: (1) wastewater discharge to the ocean, (2) ocean water, (3) brackish water from natural sources or irrigation return flow, (4) inland waste waters of low TDS, and, lastly, (5) other inland waters. (Determined not to be applicable to this project.)
California Environmental Quality Act (CEQA)	
LOCAL	
N/A	

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ALTERNATIVES – Summary of Findings

Alternative Sites	NO ALTERNATIVE SITE IS PREFERABLE TO THE PROPOSED SITE
	No alternative site is preferable to the proposed site because building and operating the project at the proposed site creates no impacts that cannot be mitigated to a level of insignificance.
Alternative Technology	NO ALTERNATIVE TECHNOLOGY IS BOTH PREFERABLE AND FEASIBLE
	Available alternative technologies include wind, solar, and biomass. Solar technology requires a large amount of land to produce the same amount of electricity. Geothermal and hydropower resources are too far away from the population centers for which the project's power will be generated. Wind potentially creates other impacts and also requires a large amount of land with reliable and adequate wind energy resources. Biomass plants are typically below the capacity of the project and typically produce greater emissions than the equivalent gas-fired combustion turbine technology.
"No Project" Alternative	THE "NO PROJECT" ALTERNATIVE IS INFERIOR TO PROPOSED PROJECT
	The "no project" alternative fails to provide needed generation and reliability. This alternative would result in potentially greater demand for more energy production from existing power plants that currently have older, less efficient, and more polluting generating units than the SPP.

ALTERNATIVES – GENERAL

The Energy Commission is required by its 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(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.

Alternative Sites

Consistent with the CEQA Guidelines, the consideration of alternative sites was guided by whether most project objectives could be accomplished at alternative sites and

whether locating the project at an alternative site would substantially lessen any identified potential impacts of the project [Cal. Code Regs., tit. 14 §15126.6(a)].

The SPP's objectives are:

- Development of a project to meet the contractual terms of the Pacific Gas & Electric, Power Purchase agreement;
- To meet various vendor requirements necessary for power generation and environment control equipment guarantees;
- Development of a project that could obtain all required permits due to a lack of significant adverse environmental impacts;
- Use of a site that is located near an existing substation and transmission line.
- Development of a project that will provide a fair return on the project investment; and
- Development of a project that will be sufficiently attractive to the investment community so that the required construction funds can be obtained at reasonable rates.

The proposed SPP would be a simple-cycle power plant with a nominal electrical output of 120 MW, consisting of two Pratt & Whitney FT8-3 SwiftPac natural gas-fired combustion turbine generators. Auxiliary equipment would include inlet air foggers with evaporative coolers, a step-up transformer, a compressed-air system, control enclosures, an aqueous ammonia storage tank, a natural gas fuel system, a water treatment system, water storage tanks, a wastewater system, a site stormwater drainage system, and a lined evaporation pond.

The SPP would connect to PG&E's electrical transmission system via the tie-line that currently connects the CalPeak Panoche plant to the adjacent PG&E Panoche Substation. To accomplish this a new 300-foot, 115--kV generator tap line would originate from a new step-up transformer near the western perimeter of the SPP site, exit from the northwest edge of the site, and travel west into the existing CalPeak Panoche tie-line to the Panoche Substation. The tie-line connecting the existing CalPeak Panoche Plant to PG&E's system is already sized to carry the output of the proposed SPP.

Although the SPP would be interconnected to the CalPeak Panoche transmission system, each project would utilize independent breakers for isolation from the PG&E system. Neither the SPP or Calpeak Panoche plants would be dependent on the other for its transmission interconnection (AFC, 3-31). No new transmission facilities would be necessary beyond the switchyard.

Staff selected four sites to be reviewed as alternatives, two identified by the applicant for the proposed adjacent Panoche project and two selected by staff based on prior knowledge of the area. Of these four alternative sites, three are near or adjacent to the PG&E Los Banos Control Station, and one is adjacent to the PG&E Gates Substation. All were either environmentally comparable to, or inferior to, the proposed site due to potential significant impacts to Endangered Species Act listed species. The three Los Banos sites are all identified as San Joaquin Kit Fox primary habitat whereas the

proposed SPP site and Gates Substation are only foraging areas for that species. The Los Banos sites also support other endangered species and listed populations of burrowing owls, Tule elk, kangaroo rats, and golden eagles.

PG&E requires that a plant of this size either tie in to a substation bus or that the line be of sufficient capacity to handle the power. Placing the proposed project adjacent to the 230 kV power line at any alternative site would require reconductoring of between 40 and 80 miles of transmission lines, causing additional significant impacts. Under these circumstances, we apply the "rule of reason" and find that detailed analysis of additional alternative sites such as those that may exist along the Los Banos-Gates 230kV Line is not necessary.

The permanent loss of foraging habitat for the San Joaquin kit fox, a federally endangered and California threatened species, is a potentially significant impact. No alternative site has been identified that would substantially lessen this impact.

An alternative to meeting California's electricity demand with new generation is to reduce the demand for electricity, thereby obviating the need for additional power generation. Such "demand side" measures include programs that increase energy efficiency, reduce electricity use, or shift electricity use away from "peak" hours of demand. There is a large array of demand side programs at the local, state and federal levels. Even with this great variety of demand side management programs, the state's electricity use is still increasing as a result of population growth and business expansion. Current demand side programs are not sufficient to satisfy future electricity needs, nor is it likely that even much more aggressive demand side programs could accomplish this at the economic and population growth rates of the last ten years.

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.

Alternative Methods of Power Generation

We have considered available alternative technologies: solar, wind, and biomass. There are no geothermal or hydropower resources available in the region. Both solar and wind generation create little or no emissions. In the case of biomass, however, emissions can be substantially greater than natural gas. Water consumption for both wind and solar generation is substantially less than for a natural gas fired plant because there is no need for thermal cooling.

Solar generation would require between 600 and 840 acres of land in order to generate 120 MW of electricity. Solar thermal facilities generation require near access to transmission lines. Large solar thermal plants are optimally located in desert areas; in these remote areas transmission availability is limited. Additionally, solar energy technologies cannot provide full-time availability due to the natural intermittent availability of sunlight. Therefore, we find that solar generation is not practical for the project location and needs.

The range of capacity for an individual wind turbine today ranges from 400 watts up to 3.6 MW. Although air emissions are significantly reduced or eliminated for wind facilities, such turbines can have significant visual effects. Wind turbines also cause bird mortality (especially for raptors) resulting from collision with rotating blades. Wind generation requires large tracts of land—between 5-17 acres to generate one megawatt resulting in between 600 to 2,040 acres required to generate 120 MW. This land requirement is significantly more than the amount of land that will be used by the proposed project. With these characteristics, wind energy generation is not a practical alternative generation method in this location.

Biomass facilities generate substantially greater quantities of air pollutant emissions than natural gas burning facilities. In addition, biomass plants are typically sized to generate less than 25 MW. Thus, many biomass facilities would be required to meet the project goal of generating 120 MW. Land and project infrastructure impacts would be significantly more damaging to the environment than the proposed project. Emissions from the large number of generating units would be greater than the proposed project, and air quality emission limitations would not be achievable.

Solar, wind and biomass generation methods have the advantages of not requiring the burning of fossil fuels and avoiding the environmental and resource impacts associated with natural gas-fired power. However, these technologies also have the potential to cause significant land use, biological, cultural resource, and visual impacts. Plus, they have substantial cost and regulatory hurdles to overcome before they can provide substantial amounts of power. Therefore, these technologies do not fulfill a basic objective of the proposed project: to provide peak load serving capability in order to ensure a reliable supply of electricity in the region. These renewable technologies are not feasible alternatives to the proposed project. (FSA 6-7 - 9

“No Project” Alternative

CEQA Guidelines and Energy Commission regulations require consideration of the “no project” alternative. This alternative assumes that the project is not constructed, and compares that scenario to the proposed project. A determination is made whether the “no project” alternative is superior, equivalent, or inferior to the proposed project.

The “no project” alternative is feasible. Even if this project is not built, It is likely that a substantial amount of additional generating capacity will be built elsewhere to meet the region’s power needs. There is no reason to assume that the total amount of capacity actually built would differ with or without this project.

The “no project” alternative would eliminate the expected economic benefits that the proposed project would bring to Fresno County, including increased property taxes, employment, sales taxes, and sales of services, manufactured goods, and equipment. (See the **Socioeconomics** section.)

While the “no project” alternative is environmentally superior to the project if built and operated without mitigation, because the unmitigated proposal could have significant environmental impacts on local and regional air quality, the San Joaquin kit fox, and

agricultural lands, use of the mitigation described in this Decision will reduce any impacts to less than significant levels. In addition, economic benefits will be derived from the project. Therefore, we find that the “no project” alternative is not the preferred alternative. (FSA 6-9)

Findings and Conclusions

The Commission has analyzed alternatives to the project design and related facilities, alternative technologies, and the “no project” alternative. Developing the project at an alternative site would not substantially lessen the potential impacts of the project, which are mitigated to insignificance by the Conditions of Certification. The Commission does not believe that alternative technologies present feasible alternatives to the proposed project. The “no project” alternative will not meet the need for additional reliable electricity and would lead to the continued use of less efficient existing, older power plants. Therefore, the “no project” alternative is inferior to the proposed project. The project goals are best met by building the project at the proposed site.

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EFFICIENCY – Summary of Findings

Local/Regional Energy Supplies	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS**
	Natural gas fuel will be supplied to the project from the existing PG&E line that serves the CalPeak Panoche power plant via a new 6-inch diameter, 800 foot-long interconnection (AFC §§ 1.2, 1.2.3, 3.4.4, 3.4.8, 3.7, 3.7.1.1, 3.11.7.1). This is a resource with adequate delivery capacity for a project of this size. There is no real likelihood that the SPP will require the development of additional energy supply capacity.
Energy Consumption Rate	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS**
	Under average ambient conditions, the SPP would burn natural gas at a nominal rate of 1,126 million Btu per hour LHV. This is a substantial rate of energy consumption, and holds the potential to impact energy supplies. The SPP will employ Pratt & Whitney FT8-3 SWIFTPAC gas turbine generator units, one of the more efficient such machines available. This model of the FT8 is nominally rated at 61.2 MW at a fuel efficiency of 37%. The SPP will actually produce 120 MW (60 MW per machine) at a site rated fuel efficiency of 36.6% LHV, based on ISO weather conditions (59 F); and 109.7 MW (54.9 MW per machine) at a site rated fuel efficiency of 35.7% LHV on a typical hot day (114°F).

EFFICIENCY - GENERAL

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

Local/Regional Energy Supplies

The applicant has described its sources of supply of natural gas for the project (AFC §§ 1.2.3, 3.4.1, 3.4.8, 3.7, 3.11.7.1). Natural gas for the SPP will be supplied from the existing PG&E high pressure natural gas trunk line running along West Panoche Road that currently serves the adjacent CalPeak Panoche power plant. The PG&E natural gas system has access to gas from the Rocky Mountains, Canada and the Southwest. This represents a resource of considerable capacity, an adequate source for a project of this size. Taking into account the two nearby existing and one proposed gas-fired power plants, it is highly unlikely that the project could pose a significant adverse impact on natural gas supplies in California (FSA, 5.3-3).

Power plants are high value gas consumers. Should gas supplies or gas transport capacity fall short, power plants would not be curtailed until after most or all industrial and commercial users had been curtailed. Given PG&E's extensive system, we do not envision the project suffering significant risk of gas supply curtailment.

Energy Consumption Rate

Any power plant large enough to fall under Energy Commission siting jurisdiction will consume large amounts of energy. Under average ambient conditions, the SPP would burn natural gas at a nominal rate of 1,126 million Btu per hour LHV (AFC §§1.2.3, 3.4.8, 3.11.7.1; Fig. 3.4-3). This is a substantial rate of energy consumption and holds the potential to impact energy supplies. Under expected project conditions, electricity will be generated at a full load efficiency of approximately 36.6% LHV (AFC § 3.4.5.2; Figs. 3.4-3, 3.4-3C).

Alternative generating technologies for the SPP are considered in the AFC (AFC §§ 4.3, 4.4). Fossil fuels (coal and natural gas), nuclear, windpower, biomass and solar power were all considered. Solar and windpower are not dispatchable, so are incapable of producing the quick start capability needed. Coal is too highly polluting to be viable in California, and new nuclear plants are not allowed. Biomass presents problems with fuel availability. We agree with the Applicant that only natural gas-burning technologies are feasible for this project.

Fuel consumption is one of the most important economic factors in selecting an electric generator; fuel typically accounts for over two-thirds of the total operating costs of a fossil-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.

Capital cost is also important in selecting generating machinery. Current progress in the development of gas turbines, incorporating technological advances made in the development of aircraft (jet) engines, combined with the cost advantages of assembly-line manufacturing, has made available machines that not only offer the lowest available fuel costs, but at the same time sell for the lowest per-kilowatt capital cost.

The project objective is to provide peaking power during periods of high demand (typically hot summer days) and quick start capability (ten minutes to full load) as dispatched by PG&E (AFC §§ 1.1, 1.2.2, 2.1, 2.3, 3.9.2.1, 3.11.4, 6). A simple-cycle configuration is consistent with this objective. The SPP will be configured as two simple cycle power plants operating in parallel, in each of which electricity is generated by an electrical generator driven by two natural gas-fired gas turbines (AFC §§ 1.1, 1.2.2, 2.3, 3.1, 3.4.1, 3.4.2, 3.4.5, 3.4.5.1, 4.3). This configuration, with its short start-up time and fast ramping capability, is well suited to providing peaking power. Further, when reduced output is required, one or more gas turbines can be shut down, allowing the remaining machine(s) to produce a percentage of the full power at optimum efficiency, rather than operating a single, larger machine at a less efficient part load output.

Modern gas turbines embody the most fuel-efficient electric generating technology available today. The SPP will employ Pratt & Whitney FT8-3 SWIFTPAC gas turbine generator units, one of the more efficient such machines available (AFC §§ 1.1, 1.2.2, 2.3, 3.1, 3.4.1, 3.4.2, 3.4.5.1; Figs. 3.4-3, 3.4-3A, 3.4-3B, 3.4-3C). This model of the FT8 is nominally rated at 61.2 MW at a fuel efficiency of 37% (P&W 2006). The SPP will actually produce 120 MW (60 MW per machine) at a site rated fuel efficiency of 36.6% LHV, based on ISO weather conditions (59°F); and 109.7 MW (54.9 MW per machine) at a site rated fuel efficiency of 35.7% LHV on a typical hot day (114°F) (AFC Figures 3.4-3, 3.4-3A). This site rating differs from nominal figures due to site specific ambient conditions (altitude and humidity), power losses from parasitic loads, and reduced system output due to flow losses caused by the inlet air cooling system and the SCR unit and combustion catalyst installed on the exhaust of each turbine.

Alternative machines that could meet the project's objectives are the LM6000 SPRINT and the SGT-800 from General Electric and Siemens Power Generation, respectively. Another possible alternative is General Electric's LMS100, a machine new on the market that blends technologies from aero-derivative and industrial gas turbines.

The General Electric (GE) LM6000PC SPRINT gas turbine generator is an aero-derivative engine. In a simple cycle configuration, it is nominally rated at 50.1 MW and 40.5% efficiency LHV at ISO conditions.

The Siemens SGT-800 gas turbine generator in a simple cycle configuration is nominally rated at 45 MW and 37% efficiency LHV at ISO conditions.

The GE LMS100 gas turbine generator is currently available only in simple cycle configuration, and is nominally rated at 98.8 MW and 45.1% efficiency LHV at ISO conditions.

Machine	Generating Capacity (MW)	ISO Efficiency (LHV)
GE LMS100	98.8	45.1 %
GE LM6000PC SPRINT	50.1	40.5 %
P & W FT8-3 SWIFTPAC	**60.2**	**36.9 %**
Siemens SGT-800	45	37.0 %

Source: GTW 2006; P&W 2006

The SPP will sell power to PG&E under the terms of a PG&E RFO (Request for Offers) contract approved by the California Public Utilities Commission. This contract specifically calls for the use of Pratt & Whitney FT8-3 gas turbine generators (AFC § 2.3). The GE LMS100 offers higher fuel efficiency than any of the alternative machines, but its generating capacity of 99 MW does not satisfy the requirement. Likewise, a pair of GE LM6000 machines would generate only 100 MW, less than the required 120 MW; two Siemens SGT-800 machines would produce only 90 MW. The rated fuel efficiency of the FT8-3 matches that of the Siemens unit. While it is less efficient than the two GE machines at full load, its ability to maintain high efficiency at part load redeems it. Thus, while SPP is required to employ the FT8-3 in the project, its selection is acceptable. (FSA 5.3-6)

Cumulative Impacts

Two nearby projects have been identified that could potentially combine with the SPP to create cumulative impacts on natural gas resources. One is a minor modification to the existing CalPeak Panoche power plant. The applicant considers it unlikely that this minor modification could affect natural gas consumption at the plant, and we agree. The other project is the Panoche Energy Center, a 400 MW peaking power plant to be built adjacent to the PG&E Panoche substation. Panoche is also the result of a PG&E RFO contract, and like Starwood, it will be supplied with natural gas from the PG&E system. The PG&E natural gas supply system is adequate to supply both the SPP project and the Panoche project. (FSA, 5.3-6, 7)

Finding

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

CONDITIONS OF CERTIFICATION

None.

EFFICIENCY

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

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FACILITY DESIGN – Summary of Findings and Conditions

Engineering - General	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** To protect public health and safety as well as the viability of the project, the applicable power plant equipment, pipelines, and other non-transmission line structures shall be designed and constructed in accordance with the 2001 California Building Standards Code, or its successor. The Chief Building Official shall review and approve the relevant design criteria and plans submitted by the Project Owner and conduct all necessary inspections. **CONDITION** ☑ The Project Owner shall construct the project using the most recent California Building Standards Code with the oversight and approval of the Chief Building Official; shall assign California registered engineers to the project; and shall pay necessary in-lieu permit fees. Conditions: **GEN-1** through **GEN-8**.
Engineering Geology	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The Starwood Power Project (SPP) will be built on a 5.6-acre parcel, located in an unincorporated area of western Fresno County, approximately 15 miles southwest of the city of Mendota. The site lies in seismic zone 4. In order to ensure that structures are analyzed using the appropriate lateral force procedure, we have included Conditions of Certification which among other things require review and approval by the CBO of the project owner's proposed lateral force procedures prior to the start of construction. **CONDITIONS** ☑ The Project Owner shall prepare an Engineering Geology Report pursuant to the California Building Standards Code to fully describe the geologic and seismic conditions of the power plant site and, if necessary, shall modify plans to address adverse soil, seismic or geologic conditions. Conditions: **GEN-1, CIVIL-1, CIVIL-2 and STRUC-1**.

Civil Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** To ensure erosion and sedimentation control, among other things, the Project Owner shall submit a site grading and drainage plan. To ensure proper conditions for foundations and other features, any adverse soil or geologic conditions shall be reported and corrected during site grading. **CONDITIONS** ☑ The Project Owner shall submit grading plans and erosion/sedimentation control plans, perform inspections and submit as-built plans for approval. Conditions: **CIVIL-1** & **CIVIL-4**. ☑ If appropriate, the resident engineer shall stop construction if unknown, adverse geologic conditions are encountered. Condition: **CIVIL-2.**
Structural Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Major structures and equipment are those necessary for power production, costly or time-consuming to repair, those used for the storage of hazardous materials, or those that may become potential health and safety hazards if not constructed to applicable engineering LORS. The AFC lists the design criteria essential to ensuring that the project is designed in a manner that protects the environment and public health and safety. **CONDITION:** ☑ For earthquake safety of major structures, foundations, supports, anchorages, and tanks, the Project Owner will submit appropriate lateral force calculations, designs and plans to the Chief Building Official for approval. In addition, to ensure the safety of storage tanks, some of which contain hazardous materials, the Project Owner will submit plans and specifications to the Chief Building Official for approval. Conditions: **STRUC-1** through **STRUC-4**.

Mechanical Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The mechanical systems include not only the power train with its major components but also water and wastewater treatment facilities, pressure vessels, piping systems and pumps, storage tanks, air compressors, fire protection systems, heating and ventilation, and water and sewage. The AFC lists and describes the mechanical codes and design criteria applicable to these systems. **CONDITION:** ☑ To ensure the safety of piping and pressure vessels, some of which transport or store hazardous materials, the Project Owner will submit plans and specifications to the Chief Building Official for approval. Heating and air conditioning equipment, as well as plumbing, will be reviewed and inspected by the Chief Building Official. Conditions: **MECH-1** through **MECH-4**.
Electrical Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Major electrical features of the project, other than transmission, include generators, power control wiring, protective relays, grounding systems, and site lighting. The AFC lists and describes the electrical codes and design criteria applicable to these systems. **CONDITION:** ☑ For electric systems or components of 480 volts or higher, the Applicant shall submit plans to the Chief Building Official for approval. Condition: **ELEC-1.**

FACILITY DESIGN – GENERAL

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

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

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

Facility Design encompasses the civil, structural, mechanical and electrical engineering aspects of the project. The Facility Design analysis verifies that the project has been described in sufficient detail to provide reasonable assurance that it can be designed and constructed in accordance with all applicable laws and regulations, and in a manner that protects environmental quality and assures public health and safety.

This analysis also examines whether special design features should be considered during final design to deal with conditions unique to the site that could influence public health and safety, environmental protection or the operational reliability of the project. This analysis further identifies the design review and construction inspection process and establishes conditions of certification that will be used to ensure compliance with applicable laws and regulations and any special design requirements.

Engineering - General

Under Section 104.2 of the California Building Standards Code (CBSC), the building official is authorized and directed to enforce all the provisions of the CBSC. For all energy facilities certified by the Energy Commission, the Energy Commission is the building official and has the responsibility to enforce the code. In addition, the Energy Commission has the power to render interpretations of the CBSC and to adopt and enforce rules and supplemental regulations to clarify the application of the CBSC's provisions.

The Energy Commission's design review and construction inspection process is developed to conform to CBSC requirements and ensure that all facility design Conditions of Certification are met. As provided by Section 104.2.2 of the CBSC, the Energy Commission appoints experts to carry out the design review and construction inspections and act as a delegated Chief Building Officer (CBO) on behalf of the Energy Commission. These delegates typically include the local building official and independent consultants hired to cover technical expertise not provided by the local official. The project owner, through permit fees as provided by CBSC Sections 107.2 and 107.3, pays the costs of the reviews and inspections. While building permits in addition to the Energy Commission certification are not required for this project, the project owner pays in-lieu permit fees, consistent with CBSC Section 107, to cover the costs of reviews and inspections. (FSA 5.1-4)

The Energy Commission has developed Conditions of Certification to ensure compliance with applicable laws and regulations and protection of the environment and public health and safety. Some of these Conditions address the roles, responsibilities and qualifications of the Project Owner's engineers responsible for the design and construction of the project. Engineers responsible for the design of the civil, structural, mechanical, and electrical portions of the project are required to be registered in California, and to sign and stamp each submittal of design plans, calculations, and specifications submitted to the CBO. These Conditions require that no element of construction proceed without prior approval from the CBO. They also require that qualified special inspectors be assigned to perform or oversee special inspections required by the applicable LORS.

While the Energy Commission and the delegated CBO have the authority to allow some flexibility with construction activities, these Conditions are written to require that no element of construction of permanent facilities, which is difficult to reverse, may proceed without prior approval of plans from the CBO. For those elements of construction that are not difficult to reverse and are allowed to proceed without approval of the plans, the

Applicant shall have the responsibility to fully modify those elements of construction to comply with all design changes that result from the CBO's plan review and approval process.

CONDITION

- ☑ The Project Owner shall construct the project using the most recent California Building Standards Code with the oversight and approval of the Chief Building Official; shall assign California registered engineers to the project; and shall pay necessary in-lieu permit fees. Conditions: **GEN-1** through **GEN-8**.

Engineering Geology

As described in **GEOLOGY**, seismic zone 4 conditions at the project site require the preparation of an Engineering Geology Report to characterize the geologic conditions.

CONDITIONS:

- ☑ The Project Owner shall prepare an Engineering Geology Report pursuant to the California Building Standards Code to fully describe the geologic conditions of the power plant site and, if necessary, shall modify plans to address adverse soil or geologic conditions. Conditions: **GEN-1, CIVIL-1** & **CIVIL-2**.

Civil Engineering

The power plant and related facilities shall be designed to meet the seismic requirements of the latest edition of the California Building Standards Code.

CONDITIONS:

- ☑ The project owner shall submit grading plans and erosion/sedimentation control plans, perform inspections and submit as-built plans for approval. Conditions: **CIVIL-1, CIVIL-3** & **CIVIL-4**.
- ☑ If appropriate, the resident engineer shall stop construction if unknown, adverse geologic conditions are encountered. Condition: **CIVIL-2**.

Structural Engineering

Major structures, systems and equipment are defined as those necessary for power production and are costly to repair or replace, or that require a long lead time to repair or replace, or those used for the storage, containment, handling of hazardous or toxic materials, or those that may become potential health and safety hazards if not constructed according to the applicable engineering LORS. The AFC lists the civil, structural, mechanical and electrical design criteria and demonstrates the likelihood of compliance with applicable LORS, all of which is essential to ensuring that the project is designed in a manner that protects the environment and public health and safety.

The project will be designed and constructed consistent with the 2001 edition of the CBSC, and other applicable codes and standards in effect at the time design and construction of the project actually commence. In the event the design of project is submitted to the Chief Building Official (CBO) for review and approval when the successor to the 2001 CBC is in effect, the 2001 CBC provisions, identified herein, shall be replaced with the applicable successor provisions.

The procedures and limitations for the seismic design of structures by the 2001 CBSC are determined considering seismic zoning, site characteristics, occupancy, structural configuration, structural system and height. Different design and analysis procedures are recognized in the 2001 CBC for determining seismic effects on structures. The dynamic lateral force procedure of Section 1631 is acceptable for design. The static lateral force procedure of Section 1630 is allowed under certain conditions of regularity, occupancy and height as determined under Section 1629.

CONDITIONS:

- ☑ For earthquake safety of major structures, foundations, supports, anchorages, and tanks, the Project Owner will submit appropriate lateral force calculations, designs and plans to the Chief Building Official for approval. In addition, to ensure the safety of storage tanks, some of which contain hazardous materials, the Project Owner will submit plans and specifications to the Chief Building Official for approval. Conditions: **STRUC-1** through **STRUC-4**.

Mechanical Engineering

The AFC lists and describes the mechanical codes, standards and design criteria that will be employed in project design documents, procurement specifications and contracts. Design work will be performed in accordance with the appropriate LORS. This approach will assure the project's mechanical systems are designed to the appropriate codes and standards. Condition: **MECH-1** through **MECH-3.**

CONDITIONS:

- ☑ To ensure the safety of piping and pressure vessels, some of which transport or store hazardous materials, the Project Owner will submit plans and specifications to the Chief Building Official for approval. Heating and air conditioning equipment, as well as plumbing, will be reviewed and inspected by the Chief Building Official. Conditions: **MECH-1** through **MECH-3**.

Electrical Engineering

Major electrical features of the project, other than transmission, include generators, power control wiring, protective relaying, grounding system, cathodic protection system and site lighting. The AFC lists and describes the electrical codes, standards and design criteria that will be employed in project design documents, procurement specifications and contracts.

CONDITIONS:

- ☑ For electric systems or components of 480 volts or higher, the Project Owner shall submit plans to the Chief Building Official for approval. Conditions: **ELEC-1**.

Finding

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

CONDITIONS OF CERTIFICATION

(All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this Decision.)

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

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

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

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

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

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

Verification: At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the Master Drawing List and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 2** below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Facility Design Table 2
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	5
CT Generator Foundation and Connections	5
Selective Catalytic Reduction (SCR) Stack Structure, Foundation and Connections	5
CT Main Transformer Foundation and Connections	5
CT Power Control Module Structure, Foundation and Connections	5
CT Inter Cooler Structure, Foundation and Connections	5
CT Cooling Pump Skid Foundation and Connections	5
CT Mechanical Auxiliary Skid Foundation and Connections	5
CT Inlet Air Filter House Structure, Foundation and Connections	5
CT CO/SCR Module Structure, Foundation and Connections	5
Continuous Emission Monitoring System (CEMS) Enclosure Structure, Foundation and Connections	5
Ammonia Dilution Air Skid Foundation and Connections	5
Ammonia Storage Tank Foundation and Connections	1
Ammonia Forwarding Pump Skid Foundation and Connections	1
Gas Filter/Separator Skid Foundation and Connections	5
Purge Air Fans Foundation and Connections	5
Closed Cooling Water Heat Exchanger Foundation and Connections	4
Fuel Gas Scrubber Foundation and Connections	2
Recycled Chlorination Tank Foundation and Connections	1
Auxiliary Transformer Foundation and Connections	9
Fire Wall Structure, Foundation and Connections	5
Cooling Tower Structure, Foundation and Connections	1
Cooling Tower Circulating Pump Foundation and Connections	3
Recycled Water Storage Tank Foundation and Connections	1
Warehouse Building Structure, Foundation and Connections	1
Water Treatment/ Mechanical Covered Structure, Foundation and Connections	1
Sulfuric Acid Storage Tank Foundation and Connections	1
Treated Water Storage Tank Foundation and Connections	1
Fire Water Tank Foundation and Connections	1
Demineralized Water Storage Tank Foundation and Connections	1
Gas Compressor/Air Compressor/Electrical Building Structure, Foundation and Connections	1
Cooling Tower Chemical Feed Building Structure, Foundation and Connections	1
High Side Breaker Foundation and Connections	3
Dead End Structure Foundation and Connections	1
Low Side Breaker Foundation and Connections	2

Equipment/System	Quantity (Plant)
Diesel Fire Pump Skid Foundation and Connections	1
Maintenance/Shop Building Structure, Foundation and Connections	1
Control/Administration/Switchgear Building Structure Foundation and Connections	1
Fuel Gas Filter/Separator Foundation and Connections	3
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping and Pipe Racks	1 Lot
Heating, Ventilation and Air Conditioning (HVAC) and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Switchyard, Buses and Towers	1 Lot
Electrical Duct Banks	1 Lot

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

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

GEN-4 Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities)]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this document.

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

The RE shall:

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

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

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

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

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

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

design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; D) a mechanical engineer; and E) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this document.

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

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

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

A. The civil engineer shall:

    1. Review the Foundation Investigations Report, Geotechnical Report or Soils Report prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

    2. Design, or be responsible for design, stamp, and sign all plans, calculations and specifications for proposed site work, civil works and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and

    3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes in the construction procedures.

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

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

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

C. The 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.

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

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

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible civil engineer and soils (geotechnical) engineer assigned to the project.

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

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

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

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

The special inspector shall:

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

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

Verification: At least 15 days (or project owner and CBO approved alternative timeframe) prior to the start of an activity requiring special inspection, the project owner

shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

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

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

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

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project [2001 CBC, Section 106.4.2, Retention of Plans]. Electronic copies of the approved plans, specifications, calculations and marked-up as-builts shall be provided to the CBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next Monthly Compliance Report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing final approved engineering plans, specifications and calculations as described above, the project owner shall submit to the CPM a letter stating that the above documents have been stored and indicate the storage location of such documents.

Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's

expense. These are to be provided in the form of “read only” adobe PDF 6.0 files, with restricted printing privileges (i.e. password protected), on archive quality compact discs.

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

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils Report, Geotechnical Report or Foundation Investigations Report required by the 2001 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations].

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

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

Verification: The project owner shall notify the CPM within 24 hours, when earthwork and construction 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 2001 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and Periodic Special Inspection; and Appendix Chapter 33, Section 3317, Grading Inspection. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer and the CBO [2001 CBC, Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The project owner or resident engineer 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 project owner or 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 [2001 CBC, Section 3318, Completion of Work].

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

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 2** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 2**, above):

1. Major project structures;
2. Major foundations, equipment supports and anchorage; and
3. Large field fabricated tanks.

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

The project owner shall:

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

stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations and specifications [2001 CBC, Section 108.4, Approval Required];

3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [2001 CBC, Section 106.4.2, Retention of plans; and Section 106.3.2, Submittal documents];

4. Ensure that the final plans, calculations and specifications clearly reflect the inclusion of approved criteria, assumptions and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer [2001 CBC, Section 106.3.4, Architect or Engineer of Record]; and

5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to the applicable LORS [2001 CBC, Section 106.3.4, Architect or Engineer of Record].

Verification: At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 2** of Condition of Certification **GEN-2** above, the project owner shall submit to the CBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

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

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

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);

2. Concrete pour sign-off sheets;

3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);

4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (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 2001 CBC, Chapter 17, Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection); Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

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

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

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

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

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

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

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

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **Facility Design Table 2**, Condition of Certification **GEN-2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of said construction [2001 CBC, Section 106.3.2, Submittal Documents; Section 108.3, Inspection Requests; Section 108.4, Approval Required; 2001 California Plumbing Code, Section 103.5.4, Inspection Request; Section 301.1.1, Approval].

The responsible mechanical engineer shall stamp and sign all plans, drawings and calculations for the major piping and plumbing systems subject to the CBO design review and approval, and submit a signed statement to the CBO when the said proposed piping and plumbing systems have been designed, fabricated and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [Section 106.3.4, Architect or Engineer of Record], which may include, but 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
Specific City/County code.
The CBO may deputize inspectors to carry out the functions of the code enforcement agency [2001 CBC, Section 104.2.2, Deputies].
Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 2**, Condition of Certification **GEN-2** above, the project owner shall submit to the CBO for design review and approval the final plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

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

appropriate CBO and/or Cal-OSHA inspection of said installation [2001 CBC, Section 108.3, Inspection Requests].

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated and installed in accordance with the appropriate section of the 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 timeframe) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval, the above listed documents, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

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

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

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

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans and specifications, including a copy of the signed and stamped statement from

the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

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

A. Final plant design plans to include:
   1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems; and
   2. system grounding drawings.

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

C. The following activities shall be reported to the CPM in the Monthly Compliance Report:
   1. Receipt or delay of major electrical equipment;
   2. Testing or energization of major electrical equipment; and
   3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of each increment of electrical construction, the project

owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

FACILITY DESIGN

APPLICABLE LAW	DESCRIPTION
Title 24, California Code of Regulations, which adopts the current edition of the California Building Standards Code (CBSC); the 2001 CBSC for design of structures; American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code; and National Electrical Manufacturers Association (NEMA) standards.	The applicable LORS for each engineering discipline, civil, structural, mechanical and electrical, are included in the Application as part of the engineering appendix, Appendix N.

RELIABILITY – Summary of Findings

Plant Availability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The Project Owner expects to operate at an overall availability of 95 to 99 percent.
Maintainability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The Project Owner will establish a plant maintenance program typical of the industry. Equipment manufacturers will provide maintenance recommendations with their products, and the Project Owner will base its maintenance program on these recommendations. The plant has significant redundancies that will allow maintenance to take place during operation.
Fuel Availability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The project will burn natural gas. There is an adequate supply of natural gas to meet the project's needs. There is no back-up fuel supply, nor is one needed.
Water Availability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The SPP will obtain service water from an existing well that currently serves the nearby CalPeak Panoche power plant. This water will be used for plant service water, and will be treated by reverse osmosis and demineralization and used for inlet air fogging and turbine combustor water injection. This source, combined with the onsite storage capacity, yields sufficient likelihood of a reliable supply of water.
Natural Disasters	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Although located within seismic zone 3, the plant will perform as well or better than others in the electric power system by complying with the latest seismic design criteria of the California Building Standards Code. See **FACILITY DESIGN.**

RELIABILITY - GENERAL

Presently, there are no laws, ordinances, regulations or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the Energy Commission must make findings as to the manner in which the project is to be designed, sited and operated to ensure safe and reliable operation. [Cal. Code Regs., tit. 20, § 1752(c).]

Plant Availability

The availability factor for a power plant is the percentage of the time that it is available to generate power; with both planned and unplanned outages subtracted from its availability. Measures of power plant reliability are based on its actual ability to generate power when it is considered available and are based on starting failures and unplanned, or forced, outages. For practical purposes, reliability can be considered a combination of these two industry measures, making a reliable power plant one that is available when called upon to operate. (FSA 5.4-3)

Throughout its intended 30-year life (AFC § 3.11.4), the SPP will be expected to perform reliably. Power plant systems must be able to operate for extended periods without shutting down for maintenance or repairs. Achieving this reliability is accomplished by ensuring adequate levels of equipment availability, plant maintainability with scheduled maintenance outages, fuel and water availability, and resistance to natural hazards. We have examined these factors for the project and compared them to industry norms. We conclude that the SPP will be as reliable as other power plants on the electric system, and will therefore not degrade system reliability. (FSA 5.4-6)

As part of its plan to provide needed reliability, the applicant proposes to operate the 120 MW (nominal output) SPP as a simple-cycle peaking power plant, providing peaking power and quick start capability to Pacific Gas and Electric Company (PG&E) as dispatched by PG&E (AFC §§ 1.1, 1.2.2, 2.3, 3.9.2.1, 3.11.4). The FT8-3 SWIFTPAC machines to be employed in this project can achieve full load from a cold start in ten minutes. The project is expected to achieve an equivalent availability factor (EAF) in the range of 95 to 99% (AFC § 3.11.4). The project will be permitted to operate at capacity factors up to 46% during each year of its operating life, being dispatched to serve peak loads at times of high demand (AFC §§ 1.2.2, 3.9.2.1, 3.11.4).

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 for adequate maintenance and repair of the equipment and systems. (FSA 5.4-3)

The gas turbine generators that will be employed in the project represent a mature, proven technology. While these Pratt & Whitney FT8-3 SWIFTPAC units have been available only since 2004, the FT8 series engines have been available since 1992. These, in turn, are an improved version of the FT4 engine, which has been on the market for over 30 years. All these engines are developed from Pratt & Whitney aircraft engines that date back to the 1950s. CalPeak Power has operated five FT8 units in California since 2002, with an average availability of 97% AFC §§ 1.1, 3.1, 3.9.2.1, 3.9.2.1.1, 3.11.4, 3.11.5, 3.11.5.1, 3.11.5.2).

The Applicant's prediction of an equivalent availability factor of 95 to 99% (AFC § 3.11.4) appears reasonable in light of the history of the machines selected. The plant will consist of two parallel gas turbine generating trains, allowing one unit to continue to operate if the other fails. Additionally, each unit can operate on only one engine if the other engine fails. Further reliability is provided by the plant's intended duty. While the

plant will be permitted to operate up to 4,000 hours annually (representing a 46% capacity factor), it will likely see much less service. Since the SPP's fuel efficiency will equal that of the nearby CalPeak Panoche plant, SPM expects it will be dispatched similarly by PG&E. The Panoche plant typically sees fewer than 400 hours of operation annually, or a capacity factor of 4.6%. With such infrequent operation, there will be ample opportunity to perform all scheduled maintenance during non-dispatched hours. SPM will also subscribe to Pratt & Whitney's lease engine program; if an engine fails, it can be replaced and the unit returned to service within 72 hours.

The Applicant's estimate of plant availability, therefore, appears realistic. 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.

Maintainability

The Applicant proposes to establish a preventive plant maintenance program typical of the industry. Equipment manufacturers provide maintenance recommendations with their products; the Applicant will base its maintenance program on these recommendations. The program will encompass preventive and predictive maintenance techniques. In light of these plans, the project will be adequately maintained to ensure acceptable reliability. (FSA 5.4-4)

Fuel Availability

The SPP will burn natural gas supplied by PG&E from the PG&E system. Natural gas fuel will be supplied to the project via a new 6-inch diameter, 650-foot long interconnection from the existing gas tapline that delivers natural gas to the CalPeak Panoche project from a PG&E main trunk line (AFC §§ 1.2, 1.2.3, 3.4.1, 3.4.4, 3.4.8, 3.7, 3.7.1.1, 3.11.7.1). The PG&E 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. Taking into account the two nearby existing and one proposed gas-fired power plants, we find that there will be adequate natural gas supply and pipeline capacity to meet the project's needs.

Water Availability

The SPP will obtain service water via a 3-inch diameter, 1,200 foot long pipeline from an existing well that currently serves the nearby CalPeak Panoche power plant. This water will be used for plant service water, and will be treated by reverse osmosis and demineralization and used for inlet air fogging and turbine combustor water injection. Safety and sanitary water (showers, safety showers and eyewash stations) will be provided by self-contained water processing units. Potable water for drinking will be provided by a bottled water supplier (AFC §§ 1.2, 1.2.4, 3.4.1, 3.4.4, 3.4.5.1.1, 3.4.9, 3.4.9.1.2, 3.11.7.2, 4.6.1). Two 75,000 gallon demineralized water storage tanks and a

75,000 gallon raw water/fire water storage tank will allow the plant to continue operating for several hours in case of an interruption in water supply (AFC §§ 3.4.1, 3.4.2, 3.4.9, 3.11.5.4). We find that this source, combined with the onsite storage capacity, yields sufficient likelihood of a reliable supply of water.

Natural Disasters

Natural forces can threaten the reliable operation of a power plant. High winds, flooding, and tsunamis (tidal waves) will not likely represent a hazard for this project, but seismic shaking (earthquake) presents a credible threat to reliable operation. (FSA 5.4-5)

The site lies within Seismic Zone 3 (AFC § 3.3.2.2). The project will be designed and constructed to the more stringent Seismic Zone 4 standards (AFC Apps. C, D, E, F, G, H and L). By virtue of being built to the latest seismic design LORS, this project will likely perform at least as well as, and perhaps better than, existing plants in the electric power system. We impose conditions of certification to ensure this. In light of the historical performance of California power plants and the electrical system in seismic events, we find there is no special concern with power plant functional reliability affecting the electric system's reliability due to seismic events.

The site lies within a 100-year floodplain. To mitigate this hazard, the site will be filled and raised one foot, as required by Fresno County Ordinance, Title 15, Flood Hazard Areas (AFC § 3.5.8). With this mitigation, we find there should be no significant concerns with power plant functional reliability due to flooding.

Findings and Conclusions

SPM predicts an equivalent availability factor of 95 to 99%, which we believe is achievable. On the basis of the evidence in the record, we find that the plant would be built and operated in a manner consistent with industry norms for reliable operation. This should provide an adequate level of reliability. No conditions of certification are proposed.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

RELIABILITY

APPLICABLE LAW	DESCRIPTION
None	

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TRANSMISSION LINE SAFETY & NUISANCE – Summary of Findings and Conditions

Electric & Magnetic Fields	**COMPLIES WITH APPLICABLE LAW & REGULATIONS**
	The site for the proposed project is a 5.6-acre portion of a 128-acre land parcel approximately 16 miles southwest of the City of Mendota and approximately 300 feet east of PG&E's Panoche Substation. The transmission line would be located in an agricultural area. There would be no residences in the immediate vicinity at the time of operations, thus eliminating health concerns from long-term human EMF exposures. The only project-related EMF exposures of potential significance are the short-term exposures of plant workers, regulatory inspectors, maintenance personnel, visitors, or individuals in the immediate vicinity of the line. These types of exposures are short term and well understood as not significantly related to the health concern. **CONDITIONS:** ☑ The project owner shall construct the proposed transmission lines according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2. High Voltage Electrical Safety Orders, Sections 2700 through 2974 of the California Code of Regulations, and Pacific Gas and Electric's EMF-reduction guidelines. Condition: **TLSN-1**. ☑ The project owner shall hire a qualified consultant to measure the strengths of the electric and magnetic fields from the line before and after it is energized. Condition: **TLSN-3**

Aviation Safety	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** The height of the proposed line support would, at 65 feet, be much less than the 200 feet regarded by the FAA as triggering the concern about aviation safety. Furthermore, the nearest public airport is in Fresno approximately 50 miles away and thus, farther than the 20,000 feet that triggers FAA notification. A small general aviation airport is located in Firebaugh approximately 24 miles away. Given these conditions the proposed line structures do not pose an obstruction-related aviation hazard to area aircraft as defined using current FAA criteria. Therefore, no FAA "Notice of Construction or Alteration" would be required for the line.
Radio & TV Interference	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** Federal and State regulations regulate transmission line-related radio and TV-frequency interference. Conditions are set forth herein to ensure that any interference is mitigated whenever interference occurs. **CONDITION:** ☑ The Project Owner shall investigate and, as feasible, remedy any project-related television or radio interference. Condition: **TSLN-2**.
Audible Noise	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** There are no design specific federal regulations to limit audible noise from transmission lines. As with radio noise, such noise is limited instead through design and maintenance standards established from industry research and experience.
Fire Hazard	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** State regulations set forth guidelines to minimize potential fire hazards from overhead lines. **CONDITION:** ☑ The Project Owner shall keep the transmission line right-of-way free of combustible materials. Condition: **TSLN-4**.
Shocks	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** State regulations and industrial standards set forth guidelines to prevent hazardous shocks from power lines. Grounding prevents nuisance shocks. **CONDITION:** ☑ The Project Owner shall ground metallic objects within the right-of-way. Condition: **TSLN-5**.

TRANSMISSION LINE SAFETY & NUISANCE – GENERAL

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

> (a) Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety, [and]
>
> (d)(1) Findings regarding the conformity of the proposed site and related facilities…with public safety standards…and with other relevant local, regional, state and federal standards, ordinances, or laws…". (Pub. Resources Code, § 25523.)

The proposed SP transmission line will be an overhead 115-kV line extending approximately 300 feet from the project's 115-kV switchyard to the point where it would connect to the existing line between the CalPeak Panoche plant and the PG&E Panoche Substation.

The proposed line's conductors would be standard low-corona aluminum cables or equivalent to be erected on wooden support poles. The line would be built to accommodate the added power and the presence of several area lines some of which would be raised or re-conductored according to PG&E requirements regarding clearance, field strength reduction, efficiency, reliability, safety, and maintainability (AFC pp. 3-32 through 3-35).

Electric & Magnetic Fields

The possibility of health effects from exposure to electric and magnetic fields has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of considering exposure to both as EMF exposure. The available evidence, as evaluated by California Public Utilities Commission (CPUC) and other regulatory agencies, has not established that such fields pose a significant health hazard to exposed humans.

However, both the Energy Commission and the CPUC consider it important to note that while such a hazard has not been established from the available evidence, the same evidence does not serve as proof of a definite lack of a hazard. Therefore, in light of present uncertainty, it is appropriate to reduce such fields where feasible without affecting safety, efficiency, reliability and maintainability.

Since each new line in California is currently required to be designed according to the safety and EMF-reducing guidelines of the utility in the service area involved, their fields are required under existing CPUC policies to be similar to fields from similar lines in that service area. Condition **TLSN-1** requires the Applicant to comply with PG&E's practices and to comply with the CPUC's policy on field strength management. (FSA 4.11-8)

The proposed SPP line would traverse an agricultural area with no nearby occupied residences, thereby eliminating the potential for residential electric and magnetic field exposures that in recent years have raised concern about human health effects. The proposed line's design, construction, operation, and maintenance plan would be according to standard PG&E practices, which conform with applicable LORS. The line's field and non-field impacts would be similar to PG&E lines of the same design and current-carrying capacity.

The only project-related EMF exposures of potential significance are the short-term exposures of plant workers, regulatory inspectors, maintenance personnel, visitors, or individuals in the immediate vicinity of the line. These types of exposures are short term and well understood as not significantly related to any health concern.

Since optimum field-reducing measures would be incorporated into the proposed line design, further mitigation is unnecessary. The Applicant will validate its assumed reduction efficiency from the field strength measurements recommended in Condition of Certification, **TLSN-3**. (FSA 4.11-9)

CONDITIONS:

- ☑ The project owner shall construct the proposed transmission lines according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2. High Voltage Electrical Safety Orders, Sections 2700 through 2974 of the California Code of Regulations, and Southern California Edison's EMF-reduction guidelines. Condition: **TLSN-1**.
- ☑ The project owner shall hire a qualified consultant to measure the strengths of the electric and magnetic fields from the line before and after it is energized. Condition: **TLSN-3**

Aviation Safety

The height of SPP's proposed transmission line support poles would, at 65 feet, be much less than the 200 feet regarded by the FAA as triggering concern about aviation safety. Furthermore, the line would be in an area with several other PG&E lines, some of which are of similar voltage and structural dimensions.

The nearest airport is the Firebaugh Airport more than 20 miles away, much farther than the 20,000 feet that triggers FAA notification. The Fresno Airport is the next closest, at 50 miles away. Given these conditions, the proposed transmission line structures do not pose an obstruction-related aviation hazard to area aircraft as defined using current FAA criteria. Therefore, no FAA "Notice of Construction or Alteration" would be required. However, as is common industry practice, the Applicant will inform the FAA about the proposed line, although no FAA notification would be required. (FSA 4.11-5)

Radio & TV Interference

Transmission line-related radio-frequency interference is one of the indirect effects of line operation produced by the physical interactions of line electric fields. The level of such interference usually depends on the magnitude of the electric fields involved. Thus, the potential for such impacts can be assessed from field strength estimates obtained for the line. Applicable regulations are intended to ensure that such lines are located away from areas of potential interference and that any interference is mitigated whenever it occurs.

The proposed line would be built and maintained according to standard SCE practices that minimize surface irregularities and discontinuities. Moreover, the potential for such corona-related interference is usually of concern for lines of 345-kV and above, and not the proposed 230-kV line. The proposed low-corona designs are used for all PG&E lines of similar voltage rating to reduce surface-field strengths and the related potential for corona effects. Since these existing lines do not currently cause the corona-related complaints along their existing routes, corona-related radio-frequency interference or related complaints are not expected in the general project area. However, Condition of Certification **TLSN-2** ensures mitigation as required by the FCC in the unlikely event of complaints. (FSA 4.11-5)

CONDITION

- ☑ The Project Owner shall investigate and, as feasible, remedy any project-related television or radio interference. Condition: **TSLN-2**.

Audible Noise

There are no design-specific federal regulations to limit the audible noise from transmission lines. As with radio noise, such noise is limited instead through design and maintenance standards established from industry research and experience. These standards have proven effective without significant impacts on line safety, efficiency, maintainability, and reliability. Any noise will usually result from the action of the electric field at the surface of the line conductor and could be perceived as a characteristic crackling, frying, hissing sound, or hum. Since (as with communications interference), the noise level depends on the strength of the line electric field, the potential for occurrence can be assessed from estimates of the field strengths expected during operation. Such noise is generated during wet weather and from lines of 345 kV or higher. It is, therefore, not generally expected at significant levels from lines of less than 345-kV as proposed for SPP. (FSA 4.11-6)

Research by the Electric Power Research Institute has validated this by showing the fair-weather audible noise from modern transmission lines to be generally indistinguishable from background noise at the edge of a right-of-way of 100 feet or more. Since the low-corona designs are also aimed at minimizing field strengths, the proposed line would not add significantly to current background noise levels in the project area. (FSA 4.11-6)

Fire Hazard

The transmission-related fire hazards are those that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and nearby trees and other combustible objects. (FSA 4.11-6)

Standard fire prevention and suppression measures for all PG&E lines would be implemented for the proposed project line. The Applicant's intention to ensure compliance with the clearance-related aspects of GO-95 would be an important part of this mitigation approach. Moreover, the line would be located in a mostly agricultural area without tall trees that could pose a fire hazard from line contact. **TLSN-4** is recommended to ensure compliance with important aspects of the fire prevention measures. (FSA 4.11-6)

CONDITION:

- ☑ The Project Owner shall keep the transmission line right-of-way free of combustible materials. Condition: **TSLN-4**.

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. (FSA 4.11-6)

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

The Applicant's stated intention to implement the GO-95-related measures against direct contact with the energized line would serve to minimize the risk of hazardous shocks. Condition of Certification **TLSN-1** would be adequate to ensure implementation of the necessary mitigation measures. (FSA 4.11-6)

Nuisance shocks are caused by current flow at levels generally incapable of significant physiological harm. They result mostly from direct contact with metal objects electrically charged by fields from the energized line. Such electric charges are induced in different ways by the line electric and magnetic fields. The potential for nuisance shocks around the proposed line would be minimized through standard grounding practices and Condition of Certification **TLSN-5**. (FSA 4.11-7)

CONDITIONS

- ☑ The project owner shall construct the proposed transmission lines according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2. High Voltage Electrical Safety Orders,

Sections 2700 through 2974 of the California Code of Regulations, and PG&E's EMF-reduction guidelines. Condition: **TLSN-1.**

☑ The Project Owner shall ground metallic objects within the right-of-way. Condition: **TSLN-5**.

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Cumulative Impacts

Since the proposed project transmission line and switchyard would be designed according to applicable field-reducing PG&E guidelines (as currently required by the CPUC for effective field management), the Commission expects the resulting fields to be of the same intensity as fields from PG&E lines of the same voltage and current-carrying capacity. Any cumulative exposures in the operational phase should be seen as reflecting the contribution of lines from the existing area power plants (CalPeak Panoche and Wellhead Peaker plant) and the proposed project line. The line's maximum contribution would be obtained through measurements at the locations of maximum impacts, away from the other lines as required by **TLSN-3.** This should be the point of connection with the CalPeak Panoche line that extends to the Panoche Substation.

Finding and Conclusion

With the implementation of the Conditions of Certification, below, we find that the project conforms to applicable laws related to transmission line safety.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission lines according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2. High Voltage Electrical Safety Orders, Sections 2700 through 2974 of the California Code of Regulations, and Southern California Edison's EMF-reduction guidelines.

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

TLSN-2 The project owner shall ensure that every reasonable effort will be made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the project-related lines and associated switchyards. The project owner shall maintain written records for a period of five years, of all complaints of radio or television interference attributable to plant operation together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution should be noted and explained.

The record shall be signed by the project owner and also the complainant, if possible, to indicate concurrence with the corrective action or agreement with the justification for a lack of action.

Verification: All reports of line-related complaints shall be summarized for the project-related lines and included during the first five years of plant operation in the Annual Compliance Report.

TLSN-3 The project owner shall hire a qualified consultant to measure the strengths of the electric and magnetic fields from the line before and after it is energized. The measurements shall be made according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures at the locations of maximum field strengths along the proposed route. 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 and measurements with the CPM within 60 days after completion of the measurements.

TLSN-4 The project owner shall ensure that the rights-of-way of the proposed transmission line are kept free of combustible material, as required under the provisions of Section 4292 of the Public Resources Code and Section 1250 of Title 14 of the California Code of Regulations.

Verification: During the first five years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report.

TLSN-5 The project owner shall ensure that all permanent metallic objects within the right-of-way of the project-related lines are grounded according to industry standards regardless of ownership. In the event of a refusal by any property owner to permit such grounding, the project owner shall so notify the CPM. Such notification shall include, when possible, the owner's written objection. Upon receipt of such notice, the CPM may waive the requirement for grounding the object involved.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this Condition.

TRANSMISSION LINE SAFETY AND NUISANCE

APPLICABLE LAW	DESCRIPTION
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.
14 CFR Part 77 – Objects Affecting the Navigation Space	Provides regulates that specify the criteria used by the FAA for determining whether a Notice of Proposed Construction or Alteration is required for potential obstruction hazards.
Title 47, CFR, Section 15.2524, Federal Communications Commission (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication.
Title 47 CFR §15.25	Prohibits operation of any devices producing force fields that interfere with radio communications, even if such devices are not intentionally designed to produce radio-frequency energy.
STATE	
CPUC General Order 52	Governs the construction and operation of power and communications lines
CPUC Decision 93-11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields.
CPUC General Order 128	Specifies criteria for underground transmission lines.
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.
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.
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.
Title 8 CCR, §2700 et seq.	Establishes requirements and standards for safely installing, operating and maintaining electrical installations and equipment.
CPUC GO-95, "Rules for Overhead Electric Line	Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and

Construction”	maintenance and inspection requirements.
LOCAL	
There are no applicable Local LORS for this area.	
National Electrical Safety Code	Specifies grounding procedures to limit nuisance shocks. Also specifies minimum conductor ground clearances.
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.
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.

TRANSMISSION SYSTEM ENGINEERING – Summary of Findings and Conditions

Grid Planning	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS**
	Dynamic Stability studies for SPP were conducted using projected 2009 summer peak full-loop base case to determine if the SPP would create any adverse impact on the stable operation of the transmission grid following selected N-1 and N-2 outages. The results indicate there are no adverse impacts on the stable operation of the transmission system following the selected disturbances, as outlined in the SIS for integration of the SPP.
System Reliability:	**MITIGATION**
	The SIS identified pre-existing overloads in the transmission system, and determined that the addition of the SPP will exacerbate the overloads. The SIS identified required mitigations for the connection of and power delivery from the SPP to PG&E's transmission system. The proposed mitigation measures for the post-project conditions involve installation of special protection systems and mitigations, for which the respective project owner/applicant is responsible if it is ahead of the SPP in the California ISO's generation interconnection queue and/or has an earlier on-line date. **MITIGATION:** ☑ The Project Owner shall install special protection systems and other mitigations for the connection of, and power delivery from, the SPP to PG&E's transmission system. Conditions: **TSE–1 through TSE-7.**

TRANSMISSION SYSTEM ENGINEERING – GENERAL

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

> (a) Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety, [and]
>
> (d)(1) Findings regarding the conformity of the proposed site and related facilities…with public safety standards…and with other relevant local, regional, state and federal standards, ordinances, or laws…". (Pub. Resources Code § 25523.)

Under California's 1996 Electricity Industry Deregulation legislation, Southern California Edison (SCE), Pacific Gas and Electric Company (PG&E), and San Diego Gas and Electric Company (SDG&E) divested most of their power plants but retained ownership of their electric transmission and distribution systems, under the operating control of the

California Independent System Operator (Cal-ISO). Cal-ISO is responsible for ensuring electric system reliability for all participating transmission owning utilities and determines both the standards necessary to achieve reliability and whether a proposed project conforms to those standards. The Energy Commission relies on the Cal-ISO's determinations to make its finding related to applicable reliability standards and the need for additional transmission facilities. The Energy Commission conducts an environmental review of the proposed project. The Energy Commission must also consider any additional transmission facilities recommended by Cal-ISO as part of the "whole of the action" even though the additional facilities are not licensed by the Energy Commission. (CCR, tit. 14, §15378.)

Grid Planning

For the interconnection of a proposed generating unit or transmission facility to the grid, the interconnecting utility (PG&E in this case) and the control area operator (CAL ISO) are responsible for ensuring grid reliability. These entities determine the transmission system impacts of the proposed project, and any mitigation measures needed to ensure system conformance with performance levels required by utility reliability criteria, NERC planning standards, WECC reliability criteria, and CAL ISO reliability criteria. A System Impact Study (SIS) and a Facilities Study (FS) are used to determine the impacts of the proposed project on the transmission grid. The Commission relies on the studies and any review conducted by the CAL ISO to determine the projects effect on the transmission grid and to identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards. (FSA 5.5-4)

If the studies show that the interconnection of the project causes the grid to be out of compliance with reliability standards, the study will identify mitigation alternatives or ways in which the grid could be brought into compliance with reliability standards. When a project connects to the CAL ISO-controlled grid, both the studies and mitigation alternatives must be reviewed and approved by the CAL ISO. If the mitigation identified by CAL ISO or interconnecting utility includes transmission modifications or additions that require CEQA review as the "whole of the action," the Energy Commission must analyze the environmental impacts of these modifications or additions. (FSA 5.5-5)

The System Impact Study was performed by California ISO at the request of Starwood Power-Midway, LLC, to identify the transmission system impacts caused by the SPP project on PG&E transmission system. The SIS included Power Flow analyses, Short Circuit Duty analyses, Dynamic Stability analyses, Reactive Power Deficiency analysis, an analysis of system protection requirements, and substation evaluations. The study modeled the SPP for a net output of 120 MW. The base cases included all planned generating facilities in PG&E's service territory, the Sacramento Municipal Utility District, the Turlock Irrigation District, and Silicon Valley Power whose on-line schedules are concurrent with or precede the SPP project. The detailed study assumptions have been described in the SIS. The Power Flow analyses were conducted with and without the SPP connected to the PG&E grid at the Panoche Substation using full loop-base cases modeling projected 2009 summer peak, summer off-peak, and spring peak conditions. The Power Flow analyses assessed the project's impact on thermal loading of the

transmission lines and equipment. Dynamic Stability analyses were conducted with the SPP using projected 2009 summer peak base cases to determine whether the SPP would create instability in the system following certain selected outages. Short Circuit Duty analyses were conducted with and without the SPP to determine if the SPP would result in overstressing existing substation facilities. A Reactive Power Deficiency analysis was conducted to study the transmission line voltage drops cause by selected outages. (FSA 5.5-5)

Operating Reliability & Safety

The SIS identified pre-existing overloads in the transmission system, and determined that the addition of the SPP will exacerbate the overloads. The overloading problems affect transmission line facilities under normal conditions, single-contingency (N-1) conditions, and double-contingency (N-2) conditions. The SIS identified required mitigations for the connection of, and power delivery from, the SPP to PG&E's transmission system. The mitigation measures for the post-project conditions involve installation of special protection systems and mitigations, for which the respective project owner/applicant is responsible if it is ahead of the SPP in the California ISO's generation interconnection queue and/or has an earlier on-line date. (FSA 5.5-5-7)

The following mitigation measures are the responsibility of projects that are ahead of SPP in the California ISO's generation interconnection queue. Should these projects not materialize, SPP may become responsible for the upgrades.

- Borden – Gregg 230 kV line: This line is overloaded under normal, N-1, and N-2 contingency conditions before the addition of the SPP. The SPP increases the forecasted overload by 1%.
    - Mitigation: The mitigation of these overloads is the responsibility of generation projects P0418, P0429, P0435, and P0507 because these projects are ahead of SPP in the California ISO's generation interconnection queue and/or have earlier on-line dates.
- Oro Loma – Canal #1 70 kV (Oro Loma – Dos Palos) line: This line is overloaded under N-1 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload by 2%.
    - Mitigation: The mitigation of this overload is the responsibility of generation projects P0418, P0429, P0435, and P0507 because these projects are ahead of SPP in the California ISO's generation interconnection queue and/or have earlier on-line dates.
- Wilson – Gregg 230 kV (Story 1 – Gregg) line: This line is overloaded under N-1 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload 1%.
    - Mitigation: The mitigation of this overload is the responsibility of generation projects P0418, P0429, P0435, and P0507 because these projects are ahead of SPP in the California ISO's generation interconnection queue and/or have earlier on-line dates.

- Helm – Kerman 70 kV (Agrico – Kerman) line: This line is overloaded under N-1 and N-2 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload 1 to 2%.
    - Mitigation: The mitigation of these overloads is the responsibility of generation projects P0418, P0429, P0435, and P0507 because these projects are ahead of SPP in the California ISO's generation interconnection queue and/or have earlier on-line dates.

The following N-2 overloads would be mitigated by operating procedures and/or installation of special protection systems.

- Panoche – Oro Loma 115 kV (Panoche JCT – Hammonds) line: The addition of the SPP causes this line to overload under N-2 contingency conditions.
    - Mitigation: The 6% N-2 line overload would be mitigated by installation of a special protection system.
- Coppermine – Tivy Valley 70 kV line: This line is overloaded under N-2 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload by 1%.
    - Mitigation: The overload would be mitigated by operating procedures and/or installation of a special protection system.
- Tivy Valley – Reedley 70 kV line: This line is overloaded under N-2 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload by 1%.
    - Mitigation: The overload would be mitigated by operating procedures and/or installation of a special protection system.
- Wilson – Le Grand 115 kV line: This line is overloaded under N-2 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload by 5%.
    - Mitigation: The overload would be mitigated by operating procedures and/or installation of a special protection system.
- Herndon – Ashlan 230 kV line: This line is overloaded under N-2 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload by 2%.
    - Mitigation: The overload would be mitigated by operating procedures and/or installation of a special protection system.
- Le Grand – Dairyland 115 kV line: This line is overloaded under N-2 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload by 8%.
    - Mitigation: The overload would be mitigated by operating procedures and/or installation of a special protection system.
- Wilson – Oro Loma 115 kV (Le Grand Jct - Wilson) line: This line is overloaded under N-2 contingency conditions before the addition of the SPP. The addition of the SPP increases the forecasted overload by 7%.

- Mitigation: The overload would be mitigated by operating procedures and/or installation of a special protection system.

Dynamic Stability studies for SPP were conducted using projected 2009 summer peak full-loop base case to determine if the SPP would create any adverse impact on the stable operation of the transmission grid following selected N-1 and N-2 outages (URS 2007h, section 9). The results indicate there are no adverse impacts on the stable operation of the transmission system following the selected disturbances, as outlined in the SIS for integration of the SPP (FSA 5.5-7).

Short Circuit studies were performed to determine the degree to which the addition of the SPP increases fault duties at PG&E's substations, adjacent utility substations, and the other 115 kV and 230 kV busses within 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 without and with the SPP, and information on the breaker duties at each location are summarized in the System Impact Study. The Short Circuit study indicates that the addition of the SPP would increase the fault currents of the three circuit breakers at the Panoche Substation. The mitigation would require a replacement of one 115 kV (circuit breaker 112) and two 230 kV circuit breakers (circuit breakers 222 and 322) within the fenced Panoche Substation. Generation project P0406, with a superior generation queue position and earlier on-line date, is responsible for upgrading these breakers. Should project P0406 not materialize, SPP would be responsible for replacing these breakers. The remaining breakers of the substations are adequate to withstand the post-project incremental fault currents identified in the Short Circuit study. (FSA 5.5-8)

MITIGATION:

☑ The Project Owner shall replace wave traps, disconnect switches, and circuit breakers with equipment of higher amperage ratings. Conditions: **TSE–1** through **TSE-7.**

Findings

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to transmission system engineering.

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

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

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

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

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

CBO's approval of the new engineer. This engineer shall be authorized to halt earthwork and to require changes; if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations.

The electrical engineer shall:

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

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

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

TSE-3 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. (2001 California Building Code, 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 the requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report:

a) receipt or delay of major electrical equipment;

b) testing or energization of major electrical equipment; and

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

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, outlet line and termination, including a copy of the signed and stamped statement from the responsible electrical engineer attesting to compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

1. The existing Panoche Substation will require upgrades and rearrangement to accommodate the addition of the SPP.
    a. Install a tap interconnection at the CalPeak Panoche generator tie-line.
    b. Reconductor the CalPeak Panoche generator tie-line between CB 142 at CalPeak Panoche and CB 162 at Panoche Substation with 954 kcmil aluminum conductor or conductor with a higher rating.
    c. Rearrange or rebuild the Panoche-Shindler 115 kV Number 1 and Number 2 lines to accommodate crossing of the new tap line.
    d. Protection requirements will consist of a fully redundant, three-terminal, double-pilot current differential scheme.
2. The SPP will be interconnected to the Panoche Substation via a single 115 kV transmission line approximately 1000 feet long with 954 kcmil aluminum conductor or conductor with a higher rating.
3. The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of California Public Utilities Commission General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code of Regulations; articles 35, 36 and 37 of the High-Voltage Electric Safety Orders; California ISO Standards; National Electric Code (NEC); and related industry standards.
4. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
5. 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.
6. The project conductors shall be sized to accommodate the full output from the project.

7. Termination facilities shall comply with applicable PG&E interconnection standards.
8. The project owner shall provide to the CPM:
    a. The final Detailed Facility Study including a description of facility upgrades, operational mitigation measures, and/or special protection system sequencing and timing, if applicable.
    b. Executed project owner and California ISO facility interconnection agreement.
9. A request for minor changes to the facilities described in this condition may be allowed if the project owner informs the CBO and CPM and receives approval for the proposed change. 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: At least 60 days 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 the following to the CBO for approval.

1. The project owner shall submit design drawings, specifications and calculations conforming with California Public Utilities Commission General Order 95 or National Electric Safety Code; Title 8 of the California Code of Regulations; articles 35, 36, and 37 of the High Voltage Electric Safety Orders; California ISO standards; National Electric Code; and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.
2. 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 charge, or other acceptable alternative verification, that the transmission element(s) will conform with California Public Utilities Commission General Order 95 or National Electric Safety Code; Title 8 of the California Code of Regulations, articles 35, 36, and 37 of the High-Voltage Electric Safety Orders; California ISO standards; National Electric Code and related industry standards.
3. The project owner shall submit electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, an engineering description of equipment, and the configurations covered by requirements 1 through 9 in Condition Of Certification **TSE-5** above.
4. The final Detailed Facility Study, including a description of facility upgrades, operational mitigation measures, and/or special protective system sequencing and timing, if applicable, shall be provided concurrently to the CPM.

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

5. At least 60 days prior to the construction of transmission facilities, the project owner shall inform the CBO and the CPM of any impending changes that may not conform to the facilities described in this condition, and shall request approval to implement such changes.

TSE-6 The project owner shall provide the following Notice to the California Independent System Operator prior to synchronizing the facility with the California transmission system:

1. At least one week prior to synchronizing the facility with the grid for testing, provide the CAL ISO with 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 ISO Outage Coordination Department.

Verification: The project owner shall provide copies of the CAL ISO letter to the CPM when it is sent to the CAL ISO one week prior to initial synchronization with the grid. The project owner shall contact the CAL 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 CAL ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-7 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC General Order 95 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", CAL ISO standards, National Electric Code (NEC) and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

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

a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC General Order 95 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", CAL ISO standards, National Electric Code (NEC) and related industry standards.

b) An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made

available, if requested, for CPM audit as set forth in the “Compliance Monitoring Plan”.

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

TRANSMISSION SYSTEM ENGINEERING

APPLICABLE LAW	DESCRIPTION
FEDERAL	
There are no applicable Federal LORS	
STATE	
CPUC General Order 95, Rules for Overhead Electric Line Construction.	Formulates uniform requirements for construction of overhead lines
California Public Utilities Commission (CPUC) General Order 128 (GO-128), "Rules for Underground Electric Line Construction,"	Formulates uniform requirements for construction of underground lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance, operation, or use of overhead electric lines and to the public in general.
CPUC Rule 21	Provides standards for the reliable connection of parallel generating stations connected to participating transmission owners.
Western Systems Coordinating Council (WSCC)	Provides the performance standards used in assessing reliability of the interconnected system.
North American Electric Reliability Council (NERC)	Provides policies, standards, principles and guides to assure the adequacy and security of the electric transmission system.
CAL ISO Planning Standards	Provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the CAL ISO transmission grid facilities. The CAL ISO Planning Standards incorporate the merged NERC and WECC Planning Standards. With regard to power flow and stability simulations, the CAL ISO Planning Standards are similar to NERC/WECC and the NERC Planning Standards for Transmission System Contingency Performance. However, the CAL ISO Standards also provide some additional requirements that are not found in the NERC/WECC or NERC Planning Standards. The CAL ISO Standards apply to all participating transmission owners interconnecting to the CAL ISO controlled grid. It also applies when there are any impacts to the CAL ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the CAL ISO

CAL ISO/FERC Electric Tariff	Provides guidelines for construction of all transmission additions/upgrades (projects) within the CAL ISO controlled grid. The CAL ISO determines the "Need" for the proposed project where it will promote economic efficiency or maintain System Reliability. The CAL 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 CAL ISO grid.
LOCAL	
There are no applicable Local LORS for this area.	

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WORKER SAFETY – Summary of Findings and Conditions

OSHA Safety Standards & Programs	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The State of California Department of Industrial Relations is charged with the responsibility for administering the Cal/OSHA plan. Effective implementation of worker safety programs at a facility is essential for the protection of workers from workplace hazards. If all regulations are followed, workers will be adequately protected. **CONDITION:** ☑ The Project Owner shall prepare a Construction Safety and Health Program, with review and comments from the Fresno County Fire Protection District (FCFPD). Condition: **WORKER SAFETY-1**. ☑ The Project Owner shall prepare an Operations and Maintenance Safety and Health Program for the review and approval of Cal/OSHA and comments from the FCFPD. Condition: **WORKER SAFETY-2**.
Fire Protection	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The project will rely on both onsite fire protection systems and local fire protection services. The onsite fire protection system provides the first line of defense for small fires. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, would be provided by the FCFPD. The Applicant has outlined an adequate, standard Fire Protection and Prevention Program. The Program should also describe the steps site workers shall take in the event of a fire at the adjacent diesel tank farm owned by Baker Farming. The project owner should also provide for protection of the SPP from any fuel spill from the tank farm, through the use of a berm or other device. **CONDITIONS**: ☑ The Project Owner shall submit Fire Protection and Prevention Program plans for the construction and operation of the project. Conditions**: WORKER SAFETY-1, WORKER SAFETY-2 and WORKER SAFETY-6**.

Injury & Accident Prevention	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Safety problems have been documented by Energy Commission staff in safety audits conducted in 2005 at several power plants under construction. In order to reduce and, preferably, eliminate these hazards, it is necessary for the Energy Commission to have a safety professional monitor on-site compliance with Cal-OSHA regulations and periodically audit safety compliance during construction, commissioning, and the hand-over to operational status. **CONDITIONS:** ☑ 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 LORS, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards. Condition: **WORKER SAFETY-3.** ☑ 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. Condition: **WORKER SAFETY-4.**
Emergency Medical Response	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Research on the frequency of EMS response to gas-fired power plants shows that many of the responses for cardiac emergencies involved non-work related incidences, including visitors. The need for prompt response within a few minutes is well documented in the medical literature. The quickest medical intervention can be achieved with the use of an on-site defibrillator combined with trained, on-site personnel. **CONDITION:** ☑ The Project Owner shall provide a portable, automatic cardiac defibrillator located on site and sufficient workers be trained to use it. Condition: **WORKER SAFETY-5.**

WORKER SAFETY - GENERAL

The requirements for worker safety and fire protection are enforced through Federal, State, and local regulations. The State of California Department of Industrial Relations is charged with the responsibility for administering the Cal/OSHA plan. Effective implementation of worker safety programs at a facility is essential to the protection of workers from workplace hazards. If all regulations are followed, workers will be adequately protected. Thus, the standard for determination of significant impacts on workers is whether the Applicant has demonstrated adequate knowledge about and dedication to implementing all pertinent and relevant Cal-OSHA standards.

Adherence to Cal-OSHA standards is documented through project-specific worker safety plans. Industrial workers at the proposed facility will operate equipment, handle hazardous materials, and face other workplace hazards that may result in accidents or serious injury. The worker safety and fire protection measures proposed for this project are designed to either eliminate or minimize such hazards through special training, use of protective equipment or implementation of procedural controls. (FSA 4.14-1, 4)

OSHA Safety Standards & Plans

The SPP encompasses construction and operation of a natural gas fired-facility. Workers will be exposed to hazards typical of construction and operation of a gas-fired simple-cycle facility. (FSA 4.14-5)

Construction Safety Orders are published at 8 California Code of Regulations, section 1502, et seq. These requirements are promulgated by Cal/OSHA and are applicable to the construction phase of the project. There are additional programs under General Industry Safety Orders (8 CCR §§ 3200 to 6184), Electrical Safety Orders (8 CCR §§ 2299 to 2974) and Unfired Pressure Vessel Safety Orders (8 CCR §§ 450 to 544). The AFC includes adequate outlines of each of the above programs. Prior to the start of construction of the SPP, detailed programs and plans will be provided pursuant to the Condition of Certification **WORKER SAFETY-1**. (FSA 4.14-5)

Prior to the start of operation at the SPP, the Operations and Maintenance Safety and Health Program will be prepared. In addition, the requirements under General Industry Safety Orders (8 CCR §§ 3200 to 6184), Electrical Safety Orders (8 CCR §§ 2299 to 2974) and Unfired Pressure Vessel Safety Orders (8 CCR §§ 450 to 544) will be applicable to the project. Written safety programs for the SPP, which the Applicant will develop, will ensure compliance with the above-mentioned requirements.

The AFC includes adequate outlines of the Injury and Illness Prevention Program, Emergency Action Plan, Fire Prevention Program, and Personal Protective Equipment Program. (AFC, Section 5.17.2.1.2.) Prior to operation of the SPP, all detailed programs and plans will be provided pursuant to condition of certification **WORKER SAFETY-2**. (FSA 4.14-7)

CONDITION:

- ☑ The Project Owner shall prepare a Construction Safety and Health Program, with review and comments from the FCFPD. Condition: **WORKER SAFETY-1**.
- ☑ The Project Owner shall prepare an Operations and Maintenance Safety and Health Program for the review and approval of Cal/OSHA and comments from the FCFPD. Condition: **WORKER SAFETY-2**.

Fire Protection

Fire support services to the site will be under the jurisdiction of the Fresno County Fire Protection District (FCFPD). During construction and operation of the proposed SPP, there is the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid at the power plant switchyard or flammable liquids, explosions, and over-heated equipment may cause small fires. Major structural fires in areas without automatic fire detection and suppression systems are unlikely to develop at power plants. Fires and explosions of natural gas or other flammable gasses or liquids are rare. Compliance with all LORS will be adequate to assure protection from all fire hazards. (FSA 4.14-12)

The AFC outlines an adequate Fire Protection and Prevention Program, which the Applicant will submit to the FCFPD prior to construction and operation of the project, to confirm the adequacy of the proposed fire protection measures. (FSA 4.14-13)

CONDITION:

- ☑ The Project Owner shall submit Fire Protection and Prevention Program plans for the construction and operation of the project. Conditions**: WORKER SAFETY-1 & WORKER SAFETY-2**.

Safety & Injury Prevention

Accidents, fires, and a worker death have occurred at Energy Commission-certified power plants in the recent past due to the failure to recognize and control safety hazards and the inability to adequately supervise compliance with occupational safety and health regulations. Safety problems have been documented by Energy Commission staff in safety audits conducted in 2005 at several power plants under construction. The findings of staff's audit include, but are not limited to, such safety oversights as:

- Lack of posted confined space warning placards/signs;
- Confusing and/or inadequate electrical and machinery lockout/tagout permitting and procedures;
- Confusing and/or inappropriate procedures for handing over lockout/tagout and confined space permits from the construction team to commissioning team and then to operations;
- Dangerous placement of hydraulic elevated platforms under each other;
- Inappropriate placement of fire extinguishers near hot work;
- Dangerous placement of numerous power cords in standing water on the site thus increasing the risk of electrocution;
- Inappropriate and unsecure placement of above-ground natural gas pipelines inside the facility but too close to the perimeter fence; and
- Lack of adequate employee or contractor written training programs addressing proper procedures to follow in the event of finding suspicious packages or objects either on- or off-site.

In order to reduce and, preferably, eliminate these hazards, it is necessary for the Energy Commission to have a safety professional monitor on-site compliance with Cal-OSHA regulations and periodically audit safety compliance during construction, commissioning, and the hand-over to operational status. These requirements are outlined in Condition of Certification **WORKER SAFETY-3**. A monitor, hired by the project owner yet reporting to the CBO and CPM, will serve as an "extra set of eyes" to ensure that safety procedures and practices are fully implemented at all power plants certified by the Energy Commission. (FSA 4.14-12)

CONDITIONS:

- ☑ 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 LORS, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards. Condition: **WORKER SAFETY-3.**
- ☑ 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. Condition: **WORKER SAFETY-4.**

Emergency Medical Response

Energy Commission staff conducted a state-wide survey to determine the frequency of emergency medical response (EMS) and off-site fire-fighter response for natural gas-fired power plants in California. The purpose of the analysis was to determine what impact, if any, power plants may have on local emergency services. Staff has concluded that incidents at power plants that require fire or EMS response are infrequent and represent an insignificant impact on the local fire departments, except for rare instances where a rural fire department has mostly volunteer fire-fighting staff.

However, Staff determined that the potential for both work-related and non-work related heart attacks exists at power plants. In fact, research on the frequency of EMS response to gas-fired power plants shows that many of the responses for cardiac emergencies involved non-work related incidences, including visitors. The need for prompt response within a few minutes is well documented in the medical literature.

The quickest medical intervention can be achieved with the use of an on-site defibrillator; the response time from an off-site provider would take longer regardless of the provider's location. This fact serves as the basis for many private and public locations (e.g., airports, factories, government buildings) maintaining on-site cardiac defibrillation devices. Therefore, with the advent of modern cost-effective cardiac defibrillation devices, a power plant environment should have such a device on-site in order to convert cardiac arrythmias resulting from industrial accidents or other non-work related causes. Therefore, Condition of Certification **WORKER SAFETY-5** requires that a portable, automatic cardiac defibrillator be located on site and sufficient workers be trained to use it. (FSA 4.14-13)

CONDITION:

☑ The Project Owner shall provide a portable, automatic cardiac defibrillator on site and train a sufficient number of workers to use it. Condition: **WORKER SAFETY-5.**

Findings and Conclusions

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to worker safety.

CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:

- A Construction Personal Protective Equipment Program;
- A Construction Exposure Monitoring Program;
- A Construction Injury and Illness Prevention Program;
- A Construction Emergency Action Plan; and
- A Construction Fire Prevention Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, and the Injury and Illness Prevention Program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the FCFPD 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 the CPM with a copy of a letter from the FCFPD containing the FCFPD's comments on the Construction Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- An Operation Injury and Illness Prevention Plan,
- An Emergency Action Plan,
- Hazardous Materials Management Program,
- Fire Prevention Program (8 CCR §3221), and

- Personal Protective Equipment Program (8 CCR §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the program with all applicable Safety Orders. The Operation Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the FCFPD for review and comment.

Verification: At least 30 days prior to the start of 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 to the CPM of a letter from the FCFPD containing the FCFPD'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 LORS, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

- Have over-all authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- Assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- Assure that all construction and commissioning workers and supervisors receive adequate safety training;
- Complete accident and safety-related incident investigations, emergency response reports for injuries, and inform the CPM of safety-related incidents; and
- Assure that all the plans identified in conditions of certification **WORKER SAFETY 1** and **2** are implemented.

Verification: At least 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 of starting in the position.

The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

- Record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- Summary report of safety management actions and safety-related incidents that occurred during the month;
- Report of any continuing or unresolved situations and incidents that may pose danger to life or health; and

Report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO, and will be responsible for verifying that the Construction Safety Supervisor, as required in 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: Prior to the start of construction, the project owner shall provide to the CPM for review and approval, proof of its agreement to fund the Safety Monitor services.

WORKER SAFETY-5 The project owner shall ensure that a portable automatic cardiac defibrillator is located on site during construction and operations and shall implement a program to ensure that the equipment is properly maintained and functioning at all times and that for each shift on-site personnel shall be trained in the American Heart Association's Heartsaver Automatic External Defibrillator (AED) Course, or equivalent, as follows:

Construction: minimum 4 personnel per shift, including one security guard,
Operation: minimum 2 personnel per shift, including one security guard.

Verification: At least 30 days prior to the start of site mobilization the project owner shall submit to the CPM proof that a portable automatic cardiac defibrillator exists on site and a copy of the training and maintenance program for review and approval.

WORKER SAFETY AND FIRE PROTECTION

APPLICABLE LAW	DESCRIPTION
FEDERAL	
29 U.S. Code sections 651 et seq. (Occupational Safety and Health Act of 1970)	This Act mandates safety requirements in the workplace with the purpose of "[assuring] so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651).
29 Code of Federal Regulations (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 California Code of Regulations (CCR) all applicable sections California Occupational Safety and Health Administration (Cal/OSHA) regulations	Require that all employers follow these regulations as they pertain to the work involved. This includes regulations pertaining to safety matters during construction, commissioning, and operations of power plants, as well as safety around electrical components, fire safety, and hazardous materials use, storage, and handling.
24 CCR section 3, et seq.	Incorporates the current edition of the Uniform Building Code.
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
1998 Edition of California Fire Code and all applicable National Fire Protection Association (NFPA) standards (24 CCR Part 9)	NFPA standards are incorporated into the California Uniform Fire Code. The fire code contains general provisions for fire safety, including: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code incorporates current editions of the Uniform Fire Code (UFC) standards.
California Building Code Title 24, California Code of Regulations (24 CCR § 3, et seq.)	Comprised of eleven parts containing the building design and construction requirements relating to fire and life safety and structural safety. The California Building Standards Code incorporates current editions of the Uniform Building Code and includes the electrical, mechanical, energy, and fire codes applicable to the project.
INDUSTRY	

STANDARDS	
Uniform Fire Code Standards	Contains provisions necessary for fire prevention and information about fire safety, special occupancy uses, special processes, and explosive, flammable, combustible and hazardous materials.

GENERAL CONDITIONS
INCLUDING
COMPLIANCE MONITORING AND CLOSURE PLAN
Ver. 1.0

Introduction

The project's General Compliance Conditions of Certification, including Compliance Monitoring and Closure Plan (Compliance Plan) have been established as required by Public Resources Code section 25532. The plan provides a means for assuring that the facility is constructed, operated and closed in compliance with public health and safety, environmental and other applicable regulations, guidelines, and conditions adopted or established by the California Energy Commission and specified in the written decision on the Application for Certification or otherwise required by law.

The Compliance Plan is composed of elements that:

- set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- state procedures for settling disputes and making post-certification changes;
- state the requirements for periodic compliance reports and other administrative procedures that are necessary to verify the compliance status for all Energy Commission approved conditions of certification;
- establish requirements for facility closure plans; and
- specify conditions of certification for each technical area containing the measures required to mitigate any and all potential adverse project impacts associated with construction, operation and closure to a less than significant level. Each specific condition of certification also includes a verification provision that describes the method of assuring that the condition has been satisfied.

DEFINITIONS

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

PRE-CONSTRUCTION SITE MOBILIZATION

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

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

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

CONSTRUCTION
[From section 25105 of the Warren-Alquist Act.] Onsite work to install permanent equipment or structures for any facility. Construction does **not** include the following:
1. the installation of environmental monitoring equipment;
2. a soil or geological investigation;
3. a topographical survey;
4. any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility; 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, where the power plant has reached reliable steady-state production of electricity at the rated capacity. For example, at the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES
The CPM will oversee the compliance monitoring and shall be responsible for:
1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Energy Commission Decision;
2. resolving complaints;
3. processing post-certification changes to the conditions of certification, project description, and ownership or operational control;
4. documenting and tracking compliance filings; and
5. ensuring that the compliance files are maintained and accessible.

The CPM is the contact person for the Energy Commission and will consult with appropriate responsible agencies and the Energy Commission when handling disputes, complaints and amendments.
All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, the approval will involve all appropriate Energy Commission staff and management.

PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING
The CPM usually schedules pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The purpose

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

Energy Commission Record

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

all documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;

all monthly and annual compliance reports filed by the project owner;

all complaints of noncompliance filed with the Energy Commission; and

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 of the 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.

COMPLIANCE CONDITIONS OF CERTIFICATION

COM-1 UNRESTRICTED ACCESS

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

COM-2 COMPLIANCE RECORD

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

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

COM-3 COMPLIANCE VERIFICATION SUBMITTALS

Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by the CPM, and in most cases without full Energy Commission approval.

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

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

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

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

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

All submittals shall be addressed as follows:

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

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

COM-4 PRE-CONSTRUCTION MATRIX AND TASKS PRIOR TO START OF CONSTRUCTION ()

Prior to commencing construction, a compliance matrix addressing only those conditions that must be fulfilled before the start of construction shall be submitted by the project owner to the CPM. This matrix will be included with the project owner's **first** compliance submittal or prior to the first pre-construction meeting, whichever comes first. It will be in the same format as the compliance matrix 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 (e.g., 30, 60, 90 days) for submittal of compliance verification documents to the CPM for conditions of certification are established to allow sufficient staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

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

If the project owner anticipates starting project construction as soon as the project is certified, it may be necessary for the project owner to file compliance submittals prior to project certification. This is important if the required lead-time for a required compliance event extends beyond the date anticipated for start of construction. It is also important that the project owner understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change based upon the 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 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.

COM-5 COMPLIANCE MATRIX

A compliance matrix shall be submitted by the project owner to the CPM along with each monthly and annual compliance report. The compliance matrix is intended to provide the CPM with the current status of all 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; and
7. the compliance status of each condition, e.g., “not started,” “in progress” or “completed” (include the date).

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

COM-6 MONTHLY COMPLIANCE REPORT

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

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

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter 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);
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.

COM-7 ANNUAL COMPLIANCE REPORT

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

1. an updated compliance matrix showing the status of all conditions of certification (fully satisfied 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, 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.

COM-8 CONFIDENTIAL INFORMATION

Any information that the project owner deems confidential shall be submitted to the Energy Commission's Dockets Unit 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.

COM-9 ANNUAL ENERGY FACILITY COMPLIANCE FEE

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual fee, currently sixteen thousand eight hundred fifty dollars ($16,850), which will be adjusted annually on July 1. The initial payment is due on the date the Energy Commission adopts the final decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to: Accounting Office MS-02, California Energy Commission, 1516 9th St., Sacramento, CA 95814.

COM-10 REPORTING OF COMPLAINTS, NOTICES, AND CITATIONS
Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering with date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at:

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

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

In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies to the CPM of all complaint forms, notices of violation, notices of fines, official warnings, and citations, within 10 days of receipt. Complaints shall be logged and numbered. Complaints shall be recorded on the complaint form (Attachment A) or equivalent submittal.

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 remains accountable for implementing the on-site contingency plan. It can also include unplanned closure where the project owner is unable to implement the contingency plan, and the project is essentially abandoned.

COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

COM-11 PLANNED CLOSURE

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least 12 months (or other period of time agreed to by the CPM) prior to 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 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.

COM-12 UNPLANNED TEMPORARY CLOSURE/ON-SITE CONTINGENCY PLAN

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

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

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

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

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

COM-13 UNPLANNED PERMANENT CLOSURE/ON-SITE CONTINGENCY PLAN
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.

COM-14 POST CERTIFICATION CHANGES TO THE ENERGY COMMISSION DECISION: AMENDMENTS, OWNERSHIP CHANGES, INSIGNIFICANT PROJECT CHANGES AND VERIFICATION CHANGES
The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. ***It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769.*** Implementation of a project modification without first securing Energy Commission, or Energy Commission staff approval, may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.

A petition is required for **amendments** and for **insignificant project changes** as specified below. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the CPM, who will file it with the Energy Commission's 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, when proposing modifications to the project (including linear facilities) design, operation, or performance requirements.

If a proposed project modification alters the intent or purpose of a condition of certification, has potential for significant adverse environmental impact, or may violate

applicable laws, ordinances, regulations or standards, the petition will be processed as a formal amendment to the Final Decision, which requires public notice and review of the Energy Commission staff analysis, and approval by the full Commission. This process takes approximately two to three months to complete, and possibly longer for complex project modifications.

CHANGE OF OWNERSHIP

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

INSIGNIFICANT PROJECT CHANGE

A proposed modification that does not alter the intent or purpose of a condition of certification, does not have potential for significant adverse environmental impact, does not violate applicable laws, ordinances, regulations, or standards, or does not result in an ownership change, may be authorized by the CPM as an insignificant project change pursuant to section 1769(a)(2). This process usually takes less than one month to complete, and it requires a 14-day public review of the Notice of Insignificant Project Change that includes staff's intention to approve the modification unless substantive objections are filed.

VERIFICATION CHANGE

A verification may be modified by the CPM without requesting an amendment to the decision if the change does not conflict with the conditions of certification and provides an effective alternate means of verification. This process usually takes less than five working days to complete.

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.

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

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 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.

The Energy Commission has established a toll free compliance telephone number of **1-800-858-0784** for the public to contact the Energy Commission about power plant construction or operation-related questions, complaints or concerns.

INFORMAL DISPUTE RESOLUTION PROCEDURE

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

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 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 procedure encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be brought before the full Energy Commission for consideration via the complaint and investigation process. The procedure for informal dispute resolution is as follows:

Request for Informal Investigation

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

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to

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

Request for Informal Meeting

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

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;
3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and
4. after the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum that fairly and accurately identifies the positions of all parties and any conclusions reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230 et seq.
5.

Formal Dispute Resolution Procedure-Complaints and Investigations

If either the project owner, Energy Commission staff, or the party requesting an investigation is not satisfied with the results of the informal dispute resolution process, such party may file a complaint with the Energy Commission's Dockets Unit. 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: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

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

ATTACHMENT A

COMPLAINT REPORT/RESOLUTION FORM

PROJECT NAME: AFC Number:
COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number:
Date and time complaint received: Indicate if by telephone or in writing (attach copy if written): Date of first occurrence:
Description of complaint (including dates, frequency, and duration):
Findings of investigation by plant personnel: Indicate if complaint relates to violation of a CEC requirement: Date complainant contacted to discuss findings:
Description of corrective measures taken or other complaint resolution: Indicate if complainant agrees with proposed resolution: If not, explain: Other relevant information:
If corrective action necessary, date completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct. Plant Manager's Signature: _____ Date:

(Attach additional pages and supporting documentation, as required.)

CALIFORNIA
ENERGY
COMMISSION

1516 Ninth Street
Sacramento, CA 95814
800-822-6228
www.energy.ca.gov

ADOPTION ORDER

STARWOOD POWER PLANT
APPLICATION FOR CERTIFICATION
DOCKET NO. 06-AFC-10

This Order adopts the Commission Decision on the Starwood Power Plant. It incorporates the Presiding Member's Proposed Decision. The Commission Decision is based upon the evidentiary record of this proceeding and considers comments received at the Commission Business Meeting. The text of the attached Commission Decision contains a summary of the evidence and the rationale for the Findings and Conditions

This Order adopts by reference the text, Conditions of Certification, and Compliance Verifications contained in the Commission Decision. It also adopts specific requirements contained in the Commission Decision which ensure the proposed facility will be designed, constructed, and operated in a manner to protect environmental quality, to assure public health and safety, and to operate in a safe and reliable manner.

Findings

The Commission hereby adopts the following findings in addition to those contained in the accompanying text:

1. The project will provide a degree of economic benefits and electricity reliability to the local area.

2. The Conditions of Certification contained in this Decision, if implemented by the project owner, ensure that the whole of the project will be designed, constructed, and operated in conformity with applicable local, regional, state, and federal laws, ordinances, regulations, and standards, including applicable public health and safety standards, and air and water quality standards.

3. Implementation of the Conditions of Certification contained in the accompanying text will ensure protection of environmental quality and assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative adverse environmental impacts.

4. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the facility and may be reasonably expected to ensure public health and safety.

5. Construction and operation of the project, as mitigated, will not create any adverse environmental impacts. Therefore, the evidence of record also establishes that no

feasible alternatives to the project, as described during this proceeding, exist which would reduce or eliminate any significant environmental impacts of the mitigated project.

6. The evidence of record does not establish the existence of any environmentally superior alternative site.

7. The evidence of record establishes that an environmental justice screening analysis was conducted and that the project, as mitigated, will not have a disproportionate impact on low-income or minority populations.

8. The Decision contains a discussion of the public benefits of the project as required by Public Resources Code section 25523(h).

9. This Decision contains measures to ensure that the planned, temporary, or unexpected closure of the project will occur in conformance with applicable laws, ordinances, regulations, and standards.

10. The proceedings leading to this Decision have been conducted in conformity with the applicable provisions of Commission regulations governing the consideration of an Application for Certification and thereby meet the requirements of Public Resources Code, sections 21000 et seq., and 25500 et seq.

Therefore, the Commission **ORDERS** the following:

1. The Application for Certification of the Starwood Power Plant in Fresno County, California, as described in this Decision, is hereby approved, and a certificate to construct and operate the project is hereby granted.

2. The approval of the Application for Certification is subject to the timely performance of the Conditions of Certification and Compliance Verifications enumerated in the accompanying text. The Conditions and Compliance Verifications are integrated with this Decision and are not severable therefrom. While the project owner may delegate the performance of a Condition or Verification, the duty to ensure adequate performance of a Condition or Verification may not be delegated.

3. The decision is adopted, issued, effective and final on January 16, 2008.

4. Reconsideration of this Decision is governed by Public Resources Code, section 25530.

5. Judicial review of this Decision is governed by Public Resources Code, section 25531.

6. The Commission hereby adopts the Conditions of Certification, Compliance Verifications, and associated dispute resolution procedures as part of this Decision in order to implement the compliance monitoring program required by Public Resources Code section 25532. All Conditions in this Decision take effect immediately upon

adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, and permanent structure construction.

7. The Executive Director of the Commission or delegatee shall transmit a copy of this Decision and appropriate accompanying documents as provided by Public Resources Code section 25537 and California Code of Regulations, title 20, section 1768.

Dated _____, at Sacramento, California.

JACKALYNE PFANNENSTIEL
Chairman

JAMES D. BOYD
Vice Chair

JOHN L. GEESMAN
Commissioner

ARTHUR H. ROSENFELD
Commissioner

JEFFREY D. BYRON
Commissioner