

INTRODUCTION AND SUMMARY

Marc Pryor

PURPOSE OF THIS REPORT

This document contains California Energy Commission (Energy Commission) staff's Supplements to its Final Staff Assessment (FSA) for the Sunrise Power Project (Sunrise) Amended Application for Certification (AFC). Since not every technical area has conclusions, recommendations and proposed conditions that have been affected by the amendment, only those technical areas that have been affected are addressed in the supplements. The affected technical areas are: air quality, biological resources, cultural resources, facility design, geology and paleontology, hazardous materials handling, noise, power plant efficiency, power plant reliability, socioeconomics, visual resources, and worker safety and fire protection.

This FSA Supplement is a staff document. It is neither a Committee document, a draft decision, nor a proposed decision.

BACKGROUND

The original project, the Sunrise Cogeneration and Power Project (SCPP), was amended from a cogeneration facility to a simple cycle "peaking" facility by the applicant on September 12, 2000. Staff's FSA sections for the SCPP were filed in three parts on October 1, 1999, October 15, 1999, and December 17, 1999. The Energy Commission's SCPP Committee heard testimony and issued its Presiding Member's Proposed Decision (PMPD) on May 10, 2000.

On September 12, 2000, the applicant filed with the California Energy Commission (Energy Commission) its Sunrise Power Project Amended AFC (98-AFC-4) that amended the original Sunrise Cogeneration and Power Project (SCPP) from a cogeneration project into a simple cycle power generation facility. (See the **Project Description** of this document for a description of the amended project.)

Assembly Bill 970 (AB970), which provides for a four-month expedited siting process, does not apply to the Sunrise Power Project for at least two reasons. First, AB 970 provides for the conversion of combined cycle power plant project to a simple cycle. Combined cycle power plants typically utilize one or more combustion turbine(s) providing, indirectly, steam to one or more steam turbine(s). Because the SCPP, as a cogeneration plant did not have a steam turbine, it does not qualify for the AB 970 process. Second, AB 970 requires that the expedited project not be a major stationary source of air pollutants. Because the Sunrise Power Project would emit oxides of nitrogen in excess of 100 tons per year, it is a major stationary source and does not qualify under AB 970. The applicant has agreed with Energy Commission staff on these points.

Nonetheless, because of the advanced stage of the SCPP review, and in keeping with the spirit of AB 970 and the potential short-term three year generation benefits

to the people of the State of California, an expedited process of the Sunrise Power Project is in order.

PROJECT STATUS

PREVIOUS ACTIONS

On May 10, 2000, the Committee issued its Presiding Member's Proposed Decision (PMPD) on the Sunrise Cogeneration and Power Project. The PMPD recommended that the project not be certified by the Energy Commission because the U.S. Environmental Protection Agency (USEPA) testified during hearings that the San Joaquin Valley Unified Air Pollution Control District's (District) final Determination of Compliance (FDOC or DOC) is invalid.

USEPA considered the FDOC to be invalid because there are outstanding Notices of Violation (NOVs) associated with various entities in California that are controlled by the applicant's parent company, Texaco. USEPA cited a possible remedy to be a Consent Decree whereby a schedule is agreed to for bringing these facilities into compliance.

THE SUPPLEMENTS

Staff reviewed documents including, but not limited to: the Committee's May 10, 2000, Sunrise Cogeneration and Power Project PMPD; the AFC Amendment, the applicant's responses to staff's Data Requests that were issued on September 27, 2000, and; the District's October 2000, PDOC.

Energy Commission staff has prepared FSA Supplements in thirteen technical areas. Three areas contain major revisions and ten contain minor. Eight areas required no revisions. (See SUMMARY Table 1 below.)

In its AFC Amendment, the applicant provided proposed changes to the Conditions of Certifications presented in the May 10, 2000, PMPD. Staff has reviewed the proposed changes and has provided comments in the FSA Supplement countering some or all of the proposals in the following areas: air quality, biological resources¹, cultural resources, visual resources, noise, soil and water resources, and general conditions including compliance monitoring and facility closure. Staff concurs with all of the applicant's proposals in the traffic and transportation, waste management, facility design, geology and paleontology, and hazardous materials handling. Staff has not provided comments on **LAND USE-2** because this was a condition drafted by the committee.

¹ Staff has provided a full set of proposed Conditions of Certification in the Biological Resources FSA Supplement. Most of the proposed conditions contain revisions to staff's previously proposed conditions, but some are newly proposed conditions.

SUMMARY Table 1
Revisions to Previous Testimony

	Nature of Revisions		
	Major	Minor	No Change
Technical Area			
Air Quality	✓		
Alternatives			✓
Biological Resources	✓		
Cultural Resources	✓		
Facility Design		✓	
Gen. Conds. & Compliance			✓
Geology & Paleontology		✓	
Hazardous Materials Handling		✓	
Land Use			✓
Noise		✓	
Power Plant Efficiency		✓	
Power Plant Reliability		✓	
Public Health			✓
Socioeconomics		✓	
Soil & Water Resources		✓	
T-Line Safety & Nuisance			✓
Traffic & Transportation			✓
Transmission System Engr.			✓
Visual Resources		✓	
Waste Management			✓
Worker Safety & Fire Prot.		✓	

ACTIONS PERTAINING TO THE AMENDED PROJECT

SUPPLEMENTAL FSA

With the filing of the “amendment”, staff initiated a review that resulted in this Supplemental Final Staff Assessment (FSA). Staff issued one round of Data Requests/Responses on September 27, 2000, and the applicant provided data responses on October 6, 2000.

PRELIMINARY DETERMINATION OF COMPLIANCE

The San Joaquin Valley Unified Air Pollution Control District’s (District) Preliminary Determination of Compliance (PDOC) for the amended Sunrise Power Project was submitted to the Energy Commission on October 16, 2000. The PDOC did little more than acknowledge the existing NOV issue, and termed the PDOC to be “...in a “conditional” form, requiring submission of the demonstration of compliance prior to the Final DOC being issued.” (PDOC, Section 4.3.3, p. 29.)

REMAINING ISSUES

AIR QUALITY [AWAITING AQ SECTION]

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) FOR OXIDES OF NITROGEN (NOx)

Staff recognizes that the District has the authority to establish BACT levels for projects within its jurisdiction. However, in light of information about the possibility of lowering the NOx emission rates for the Sunrise turbines, as well as the guidance provided by CARB and by the legislature (which is specifically directed at these types of projects when they are permitted by air districts), we believe that a NOx emission rate of 5 ppm should be required, with an allowance for an emission rate of 9 ppm for the first year of operation. Should the applicant believe that 5 ppm is not a feasible emission rate for the second and third years of operation, it can petition the Energy Commission for an amendment allowing a higher emission rate. In the interim, staff will evaluate the new information and will be prepared to address the feasibility issue should it arise next year.

COMPLIANCE ISSUES (NOTICE OF VIOLATIONS - NOVs)

On October 25, 2000, a copy of a letter from Mr. Gerard P. Loughman, Vice President, Business Development of Edison Mission Energy to Mr. Sayed Sadredin of the District was docketed with the Energy Commission. The letter states that “[u]pon the execution of the definitive Stock Purchase Agreement, which is expected to occur no later than November 15, 2000, EME will own 100% of Sunrise, and hence will be the sole owner of the Sunrise Project.”² The letter states further that “EME will deliver the Certification of Compliance pursuant to APCD Rule 2201 4.3.3 under separate cover this week.” If the ownership change does occur, and if EME does not have compliance issues within the state, the outstanding NOV issue would disappear.

FINAL DETERMINATION OF COMPLIANCE

Because the District’s Final Determination of Compliance (FDOC) was not available within the timeframe required by the Committee for filing of this FSA Supplement, the Air Quality section may not contain the final Conditions of Certification that will be necessary. Staff expects the FDOC will be issued after November 10, 2000, which is the expected date of the Committee’s hearing on the Sunrise Power Project. Therefore, the Committee will have to take the FDOC into consideration when developing its PMPD, without benefit of staff’s integration of the FDOC into the Air Quality FSA Supplement.

ENERGY COMMISSION COMPLIANCE LEAD AND REVIEW TIMEFRAMES

Many of the applicant’s proposed changes to the May 10, 2000, PMPD’s Conditions of Compliance shortened lead times for the submittals of various information to the Energy Commission, as well as review time frames for these submittals. Staff has recommended against many of the proposed changes. If the Committee accepts

² Letter dated October 24, 2000, regarding “Notice of Change of Ownership”.

staff's recommendations, the applicant's desired start of construction ("site mobilization") date, presumably sometime in mid-December of this year, will be delayed because the necessary information will not have been submitted and approved by that date. However, the applicant has been informed that they would need to provide precertification compliance submittals to prepare for a rapid start of construction.

Furthermore, the applicant has not received a final U.S. Fish and Wildlife Biological Opinion or a California Department of Fish and Game Incidental Take Permit. Site mobilization activities cannot occur until these documents are provided and their terms and conditions included in the project's final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). Staff does not have sufficient information in order to estimate the delay that the project schedule would experience due to these and other submittal issues.

CONCLUSIONS AND RECOMMENDATION

CONCLUSIONS

Although not an AB 970 proposal, construction of the Sunrise Power Project would be in the "spirit" of the statute. If the project owner can expedite construction of the project, without shortening the timeframes related to required submittals to the Energy Commission, the project may still be able to be operational by the proposed operation date of August 1, 2001. Also, flexibility can be provided by allowing the project to operate at a 9 ppm NOx limit for the first year, then to operate at 5 ppm (if found feasible) for the remaining two years.

Staff has proposed conditions of certification to ensure that the facility is constructed and operated in a safe and reliable manner and potential impacts are mitigated to the greatest extent feasible. Each technical area in the original FSA, as amended by the Supplemental FSA, includes: (1) a discussion of the project and the existing environmental setting; (2) the project's conformance with laws, ordinances, regulations and standards (LORS) and whether the facility can be constructed and operated safely and reliably; (3) project specific and cumulative impacts; (4) the environmental consequences of the project using the proposed mitigation measures; (5) conclusions and recommendations; and (6) any proposed conditions of certification under which the project should be constructed and operated.

RECOMMENDATION

Energy Commission staff recommends approval of the project.

**SUNRISE POWER PROJECT (98-AFC-4)
SUPPLEMENTS TO FINAL STAFF ASSESSMENT**

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PROJECT DESCRIPTION

Supplemental Testimony of Marc Pryor

INTRODUCTION

On September 12, 2000, the Sunrise Power Company (SPC or applicant), filed with the California Energy Commission (Energy Commission) its Sunrise Power Project Amended AFC (98-AFC-4) that amended the original Sunrise Cogeneration and Power Project (SCPP) from a cogeneration project into a simple cycle power generation facility

DESCRIPTIONS

THE ORIGINAL COGENERATION PROJECT

The original project, the Sunrise Cogeneration and Power Project, was a cogeneration facility with a nominal capacity of 320 MW. The proposed power plant would have consisted of two General Electric Frame 7FA combustion turbine generators, (CTGs) and two heat recovery steam generators (HRSGs) equipped with anhydrous ammonia type selective catalytic reduction (SCR) emission control and associated support equipment. Steam generated was to be supplied to steam injection wells by the thermal host, Texaco North American Production.

THE AMENDED SUNRISE POWER PROJECT

The amended project, the Sunrise Power Project, will be a simple cycle power generation facility consisting of two natural gas-fired CTGs with a capacity output of 320 MW, and associated facilities. Both the HRSGs and SCR systems are no longer features of the proposed project. The facility will be constructed within the same footprint and will utilize the same transmission line and utility interconnections as the SCPP, except that:

- Approximately 2.5 miles of 20-inch natural gas pipeline connecting with the Kern-Mojave main supply pipeline, that was originally to be constructed by TCI, will be constructed by the applicant; and
- Portions of two proposed water supply pipelines, a total of 2,000 feet, will be relocated 300 feet south of the previously proposed routing.

The applicant has retained both transmission line options, Routes B and F for flexibility. The applicant's preferred route, Route B, would connect the Sunrise Power Project directly with Pacific Gas and Electric's (PG&E) Midway Substation. Route F would connect the Sunrise Power Project's substation to the La Paloma Generation Project's Midway Substation near Buttonwillow and from there a joint ownership line would connect to the Midway substation.

The Sunrise project, because it will be a simple cycle configuration, will not generate steam. Therefore, indirect impacts associated with the previous

cogeneration project will not occur. All major features remain unchanged from the previous project except for the following:

- There will be no heat recovery steam generators, water demand associated with steam generation or wastewater discharge from steam generation;
- Oxidation catalysts and selective catalytic reduction (SCR) systems will not be provided;
- Wastewater discharge will continue to use the proposed TCI utility corridor connection to Valley Waste. However, wastewater volume will be reduced and will not include any water associated with oilfield activities, such as produced water or regeneration brine; and
- Ammonia storage and handling associated with the previously proposed SCR system will be eliminated.

AIR QUALITY

Supplemental Testimony of Joseph M. Loyer

INTRODUCTION

This analysis evaluates the expected air quality impacts of from the emission of criteria air pollutants created during construction and operation of the proposed Sunrise Power Project (SPC). 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 (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), ozone (O₃), volatile organic compounds (VOC), and particulate matter less than 10 microns in diameter (PM₁₀).

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

- whether the Sunrise project is likely to conform with applicable Federal, State and San Joaquin Valley Unified Air Pollution Control District air quality laws, ordinances, regulations and standards, as required by Title 20, California Code of Regulations, section 1744 (b);
- whether the Sunrise project is likely to cause significant air quality impacts, including new violations of ambient air quality standards or contributions to existing violations of those standards, as required by Title 20, California Code of Regulations, section 1742 (b); and
- whether the mitigation proposed for the Sunrise project is adequate to lessen the potential impacts to a level of less than significant.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

FEDERAL

Under the Federal Clean Air Act (42 USCA § 7401 et seq.), there are two major components of air pollution control requirements for stationary sources, New Source Review (NSR) and Prevention of Significant Deterioration (PSD). NSR is a regulatory process for evaluation of those pollutants that violate federal ambient air quality standards. Conversely, PSD is a regulatory process for evaluation of those pollutants that do not violate federal ambient air quality standards. The NSR analysis has been delegated by the Environmental Protection Agency (EPA) to the San Joaquin Valley Unified Air Pollution Control District (District). The EPA determines the conformance with the PSD regulations. The PSD requirements apply only to those projects (known as major sources) that emit more than 100 tons per year for any pollutant.

STATE

The California State Health and Safety Code, section 41700, requires that “no person shall discharge from any source whatsoever such quantities of air contaminants or other material which 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.”

LOCAL

The proposed project is subject to the following San Joaquin Valley Unified Air Pollution Control District (District) rules and regulations:

RULE 2201 - NEW AND MODIFIED STATIONARY SOURCE REVIEW RULE

The main functions of the District’s New Source Review Rule are to allow for the issuance of Authorities to Construct, Permits to Operate, and to require the application of Best Available Control Technology (BACT) to new permit sources.

SECTION 4.1 - BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology is defined as: a) BACT levels that are contained in any State Implementation Plan and that have been approved by EPA; b) the most stringent emission limitation or control technique that has been achieved in practice for a class of source, or c) any other emission limitation or control technique which the District’s Air Pollution Control Officer (APCO) finds is technologically feasible and is cost effective. BACT will apply to any air pollutant that results in an emissions increase of 2 pounds per day. In the case of the Sunrise project, BACT will be required for NO_x, SO₂, PM₁₀, VOC and CO emissions from all point sources of the Sunrise project.

SECTION 4.2 - OFFSETS

Emissions offsets for new sources are required when those sources exceed the following emissions levels:

- Sulfur oxides - 150 lbs/day
- PM₁₀ - 80 lb./day
- Oxides of nitrogen - 10 tons/year
- Volatile organic compounds - 10 tons/year

The Sunrise project exceeds all of the above emission levels; therefore offsets are required for all four of these pollutants. The emission offsets provided shall be adjusted according to the distance of the offsets from the project proposed site. The ratios are:

- Within 15 miles of the same source - 1.2 to 1
- 15 miles or more from the source - 1.5 to 1

Section 4.2.5.3 allows for the use of interpollutant offsets (including PM10 precursors for PM10) on a case-by-case basis, provided that the Sunrise Power Company (SPC) demonstrates that the emissions increase will not cause a violation of any ambient air quality standard. The ratio for interpollutant trading shall be based on an air quality analysis and shall be equal to or greater than the minimum offsetting requirements (the distance ratios) of this rule.

SECTION 4.3 - ADDITIONAL SOURCE REQUIREMENTS

Rule 4.3.2.1 requires that a new source not cause, or make worse, the violation of an ambient air quality standard as demonstrated through analysis with air dispersion models.

Rule 4.3.3 requires that the applicant of a proposed new major source demonstrate to the satisfaction of the District that all major stationary sources owned or operated by the applicant or any entity controlling or under common control with the applicant in California which are subject to emission limitations are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

RULE 2520 – FEDERALLY MANDATED OPERATING PERMITS

Requires that a project owner file a Title V Operating Permit from EPA with the District within 12 months of commencing operation. A project is subject to this requirement if any of the following apply: the project is a major stationary source (under PSD definitions), it has the potential to emit greater than 100 tons per year of a criteria pollutant, any equipment permitted is subject to New Source Performance Standards, the project is subject to Title IV Acid Rain program, or the owner is required to obtain a PSD permit from EPA. The Title V permit application requires that the owner submit information on the operation of the air polluting equipment, the emission controls, the quantities of emissions, the monitoring of the equipment as well as other information requirements.

RULE 2540 – ACID RAIN PROGRAM

A project greater than 25 MW and installed after November 15, 1990, must submit an acid rain program permit application to the District. The acid rain requirements will become part of the Title V Operating Program (Rule 2520). The specific requirements for the Sunrise project will be discussed in the “Compliance with LORS – Local” later in this analysis.

RULE 4001 - NEW SOURCE PERFORMANCE STANDARDS

Specifies that a project must meet the requirements of the Federal New Source Performance Standards (NSPS) specified in Title 40, Code of Federal Regulations, Part 60, Chapter 1. Subpart GG, which pertains to Stationary Gas Turbines, requires that NO_x concentrations are a function of the heat rate of the combustion, which in this case would be approximately 116 ppmv at 15% O₂. In addition, the SO₂ concentration shall be less than 150 ppmv and the sulfur content of the fuel shall no greater than 0.8 percent by weight.

RULE 4101 - VISIBLE EMISSIONS

Prohibits air emissions, other than water vapor, of more than Ringelmann No. 1 (20 percent opacity) for more than 3 minutes in any one hour.

RULE 4201 - PARTICULATE MATTER CONCENTRATION

Limits particulate emissions from sources such as the gas turbines, cooling towers and emergency fire water pumps to less than 0.1 grain per cubic foot of exhaust gas at dry conditions.

RULE 4703 - STATIONARY GAS TURBINES

Limits NO_x concentrations to 12.2 ppm for the SCR controlled turbines. In addition there is a limit in CO concentrations of less than 200 ppm.

RULE 4801 - SO₂ CONCENTRATION

Limits the SO₂ concentration emitted into the atmosphere to no greater than 0.2 percent by volume.

RULE 8010 - FUGITIVE DUST ADMINISTRATIVE REQUIREMENTS FOR CONTROL OF FINE PARTICULATE MATTER (PM-10)

Specifies the types of chemical stabilizing agents and dust suppressant materials that can (and cannot) be used to minimize fugitive dust.

RULE 8020 - FUGITIVE DUST REQUIREMENTS FOR CONTROL OF FINE PARTICULATE MATTER (PM-10) FROM CONSTRUCTION, DEMOLITION, EXCAVATION, AND EXTRACTION ACTIVITIES

Requires that fugitive dust emissions during construction activities be limited to no greater than 40 percent opacity by means of water application or chemical dust suppressants. The rule also encourages the use of paved access aprons, gravel strips, wheel washers or other measures to limit mud or dirt carry-out onto paved public roads.

RULE 8030 - CONTROL OF PM10 FROM HANDLING AND STORAGE OF BULK MATERIALS

Limits the fugitive dust emissions from the handling and storage of materials. It specifies that bulk materials be transported using wetting agents, allow appropriate freeboard space in the vehicles, or be covered. It also requires that stored materials be covered or stabilized.

RULE 8060 - CONTROL OF PM10 FROM PAVED AND UNPAVED ROADS

Specifies the width of paved shoulders on paved roads or the use of chemical dust suppressants on unpaved roadways, shoulders and medians.

RULE 8070 - CONTROL OF PM10 FROM VEHICLE/EQUIPMENT PARKING, SHIPPING, RECEIVING, TRANSFER, FUELING AND SERVICE AREAS

This rule is intended to limit fugitive dust from unpaved parking areas by means of using water or chemical dust suppressants or the use of gravel. It also requires that the affected owners/operators shall remove tracked out mud and dirt onto public roadways once a day.

ENVIRONMENTAL SETTING

METEOROLOGICAL CONDITIONS

Hot dry summers and mild winters with relatively small amounts of precipitation typically dominate the climate of the southern San Joaquin Valley. The semi-permanent Pacific High over the eastern Pacific Ocean dominates the weather during the summer months, blocking low pressure systems from passing through the area. The Pacific High, along with the Temblor Range to the west that blocks the marine air influence from the Pacific Ocean, results in summers that are usually quite warm, with average daily maximum temperatures during July of over 98°F.

During the winter months, the Pacific High weakens and migrates to the south allowing Pacific storms into California. The annual rainfall in the Bakersfield area is only 5.7 inches. In between storms, high pressure from the Great Basin High can block storms and result in persistent tule fog caused by temperature inversions. Daily maximums during the December-January months are a relatively mild 57°F, with lows averaging 38°F. At the Maricopa weather station, a record high of 115°F and record low of 15°F was measured. These temperatures are used in determining the maximum possible emissions from the project and the maximum emission impacts in the air dispersion modeling analysis.

Winds in the area are strongly influenced by the Temblor Range to the west and the marine air that enters the Central Valley through the Carquinez Strait and Altamont Pass in the Bay Area to the north. During the summer, marine air entering the Central Valley results in northeasterly winds in the daytime hours. In the nighttime hours downslope drainage of air from the hills and mountains to the south and west results in winds from the southwest. This windflow pattern is fairly consistent throughout the year, although there is more variability to wind directions during the winter with the passage of storms through the area. Winds are usually of higher speeds during the summer because during the winter, calm and stagnant atmospheric conditions can occur between storms and the influence of the marine air from the coast is significantly diminished.

Along with the winds, another climatic factor affecting emission impacts is atmospheric stability and mixing height. Atmospheric stability is an indicator of the air turbulence and mixing. During the daylight hours of the summer when the earth is heated and air rises, there is more turbulence, more mixing and thus less stability. Under these conditions, there is more air pollutant dispersion, and therefore usually fewer air quality impacts from a single air pollution source such as the Sunrise

project. During the winter months between storms, very stable atmospheric conditions occur, resulting in very little mixing. Under these conditions, little air pollutant dispersion occurs, and consequently higher air quality impacts result from stationary source emissions. Mixing heights are generally lower during the winter, along with lower mean wind speeds and less vertical mixing.

EXISTING AIR QUALITY

The Federal Clean Air Act and the California Air Resources Board (CARB) both require the establishment of allowable maximum ambient concentrations of air pollutants, called ambient air quality standards (AAQS). The state AAQS, established by CARB, are typically lower (more protective) than the federal AAQS, which are established by the EPA. The state and federal air quality standards are listed in AIR QUALITY Table 1. As indicated in AIR QUALITY Table 1, the averaging times for the various air quality standards (the duration over which they are measured) range from one-hour to one year. The standards are read as a concentration, in parts per million (ppm), or as a weighted mass of material per a volume of air, in milligrams or micrograms of pollutant in a cubic meter of air (mg/m^3 and $\mu\text{g}/\text{m}^3$).

In July 1997, the EPA promulgated new ozone and PM_{2.5} (particulate matter less than 2.5 microns in diameter) ambient air quality standards, which are shown in AIR QUALITY Table 1. The new 8-hour ozone standard will replace the existing 1-hour standard. The PM_{2.5} standards will be in addition to the existing PM₁₀ standards. Although EPA adopted these standards, EPA has not yet designated areas which violate these new standards. Consequently, no air districts have been required to prepare implementation plans to reach attainment of those standards. Additionally, these standards have been successfully contested in court and are under review by the U.S Supreme Court.

In general, an area is designated as attainment for a specific pollutant if the concentrations of that air contaminant do not exceed the standard for that pollutant. Likewise, an area is designated as non-attainment for an air contaminant if that standard for that pollutant is violated. Where not enough ambient data are available to support designation as either attainment or non-attainment, the area can be designated as unclassified.

Unclassified areas are normally treated the same as attainment areas for regulatory purposes. An area can be attainment for one air contaminant while non-attainment for another, or attainment for the federal standard and non-attainment for the state standard for the same contaminant. The entire area within the boundaries of a district is usually evaluated to determine the district's attainment status.

AIR QUALITY Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O ₃)	1 Hour	0.12 ppm (235 µg/m ³)	0.09 ppm (180 µg/m ³)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)
	1 Hour	35 ppm (40 mg/m ³)	20 ppm (23 mg/m ³)
Nitrogen Dioxide (NO ₂)	Annual Average	0.053 ppm (100 µg/m ³)	---
	1 Hour	---	0.25 ppm (470 µg/m ³)
Sulfur Dioxide (SO ₂)	Annual Average	80 µg/m ³ (0.03 ppm)	---
	24 Hour	365 µg/m ³ (0.14 ppm)	0.04 ppm (105 µg/m ³)
	3 Hour	1300 µg/m ³ (0.5 ppm)	---
	1 Hour	---	0.25 ppm (655 µg/m ³)
Respirable Particulate Matter (PM ₁₀)	Annual Geometric Mean	---	30 µg/m ³
	24 Hour	150 µg/m ³	50 µg/m ³
	Annual Arithmetic Mean	50 µg/m ³	---
Fine Particulate Matter (PM _{2.5})	24 Hour	65 µg/m ³	---
	Annual Arithmetic Mean	15 µg/m ³	---
Sulfates (SO ₄)	24 Hour	---	25 µg/m ³
Lead	30 Day Average	---	1.5 µg/m ³
	Calendar Quarter	1.5 µg/m ³	---
Hydrogen Sulfide (H ₂ S)	1 Hour	---	0.03 ppm (42 µg/m ³)
Vinyl Chloride (chloroethene)	24 Hour	---	0.010 ppm (26 µg/m ³)
Visibility Reducing Particulates	1 Observation	---	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

The Sunrise project is located in the Kern County portion of the San Joaquin Valley Air Basin and, as stated above, is under the jurisdiction of the San Joaquin Valley Unified Air Pollution Control District. This area is designated as non-attainment for both the state and the federal ozone and PM₁₀ standards, attainment for the state's CO, NO₂, SO₂, SO₄ and Lead standards, attainment for the federal SO₂ standard, and unclassified/attainment for the federal CO and NO₂ standards (ARB 1998).

Ambient air quality data has been collected by a group of oil companies, known as the Westside Operators, in western Kern County for a number of years. Ambient air quality data collected between 1992 and 1995 at the Westside Operators Fellows site, located approximately 4 miles south-southeast of the project site is presented in AIR QUALITY Table 2. That data shows there have been no violations during that period of the NO₂, SO₂ or CO ambient air quality standards.

Additional ambient air quality data from the Air Resources Board's ozone monitor in Maricopa (18 miles south-southeast of the project site) and Taft College PM10 monitor (10 miles south-southeast of the project site) are shown in AIR QUALITY Table 3. This data shows that frequent violations of the state 1-hour ozone and 24-hour PM10 standard have occurred between 1992 and 1997. There appears to be no clear trend of significant improvement in the ambient concentrations of these two pollutants.

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 collected air quality data indicate that the ozone violations occurred primarily during the period of May through October.

In the most recent ARB report on the contribution of various districts to ozone violations in other districts (ARB 1996), ARB concluded that the San Joaquin Valley Air Basin contributes measurably to ambient ozone levels in other districts, and that other districts contribute measurably to the San Joaquin Valley's ozone problems. The report concludes that sources within the San Joaquin Valley Air Basin contribute to ozone levels in Mountain County districts to the northeast, the South Central Air Basin to the south, to the Mojave Desert to the east, the Sacramento area to the north, the Great Basin Valleys to the east, and to the North Central Coast Air Basin to the west. Conversely, emissions from districts such as the Bay Area Air Quality Management District and the Sacramento Air Quality Management District contribute to San Joaquin Valley's ozone problems. This widespread contribution from one geographic area to another demonstrates the regional nature of the ozone problem and ozone formation.

AIR QUALITY Table 2
PM10, NO₂, CO and SO₂ Ambient
Air Quality Data Collected at Fellows

Pollutant	Averaging Time	1995	1994	1993	1992	Most Restrictive Ambient Air Quality Standard
PM10	24 hours	80	85	109	104	50
	Annual	24.6	25.9	31.0	35.7	30
NO ₂	1 hour	62	94	92	84	470
	Annual	12.6	14.4	16.6	20.6	100
CO	1 hour	2440	2303	2941	2713	23,000
	8 hour	1869	1985	2222	1783	10,000
SO ₂	1 hour	65	94	36	78	655
	3 hours	36	57	27	52	1300
	24 hours	13	20	14	14	130
	Annual	1.5	1.8	1.8	1.7	80

AIR QUALITY Table 3
Ozone and PM10 Ambient Air Quality Data

Pollutant & Location		1997	1996	1995	1994	1993	1992
Ozone Maricopa	Max. conc.(ppm)	.12	.12	.13	.13	.12	0.11
	# days exceed standard	24	63	57	11	17	25
PM10 Taft College	Max. conc. ($\mu\text{g}/\text{m}^3$)	78	94	93	64	118	110
	# days exceed standard	6	12	15	6	13	15
	% of samples above 24-hour standard	10%	20%	25%	11%	23%	25%
California Ozone Ambient Air Quality Standard: 0.09 ppm (1-hour average) National Ozone Ambient Air Quality Standard: 0.12 ppm (1-hour average) California PM10 Ambient Air Quality Standard: 50 $\mu\text{g}/\text{m}^3$ (24-hour average)							

AMBIENT PM10

As Table 3 indicates, the project area also annually experiences a number of violations of the state 24-hour PM10 standard, although violations of the federal 24-hour standard are not occurring. The violations of the state 24-hour standard occur predominately between the months of August and February, with the highest number of violations occurring from September through November.

PM10 can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Gaseous emissions of pollutants such as NO_x, SO_x and VOC from turbines, and ammonia from NO_x control equipment can, given the right meteorological conditions, form particulate matter known as nitrates (NO₃), sulfates (SO₄), and organics. These pollutants are known as secondary particulates, because they are not directly emitted but are formed through complex chemical reactions in the atmosphere.

A number of studies have been undertaken to understand the particulate phenomenon, both PM10 and the smaller PM2.5, in the San Joaquin Valley. Major sources of information on the subject are available from the District and CARB. Based on these studies, Staff concludes the following about the NO_x/PM10 relationship:

- NO_x emissions contribute significantly to the formation of particulate nitrate in the region where the Sunrise project is located, and
- ammonium nitrate is the largest contributor to PM10 levels during the winter when ambient PM10 levels are at their highest.

Staff concludes that emissions of gaseous NO_x emissions can contribute a substantial portion of the ambient particulate nitrate in the southern San Joaquin Valley, especially during the winter season when the PM10 levels are the highest.

PROJECT DESCRIPTION AND EMISSIONS

CONSTRUCTION

The Sunrise project will include not only the power plant, but the following ancillary facilities as well:

- a 230 kilovolt (kV) substation on the east end of the Sunrise project site;
- a 22 mile-long, 230 kV transmission line (several routes are being considered at this time, however staff will analyze only the preferred route which is route B);
- a 2.5 mile-long, 20 inch diameter natural gas pipe line to the Kern River Gas Transmission Company/Mojave Pipeline Company (Kern-Mojave),
- and two (2) 300 foot-long water pipelines that will tie into the West Kern Water District lines, south of the site.

The construction of these facilities will generate air emissions, primarily fugitive dust created by earth moving activities and combustion emissions generated from the construction equipment and vehicles. The projected highest daily emissions, based on the highest monthly emissions over the 9 months of construction activity are shown in AIR QUALITY Table 4. It should be noted that the emissions shown in Table 4 would likely not occur on one single day, but are the daily average of the worst month. The construction emissions shown in AIR QUALITY Table 4 reflect the emissions from the Sunrise Cogeneration Project. However, as a result of the proposed amendment to the project, there are a number of pieces of equipment that the applicant will no longer be installing. The most significant equipment that has been eliminated is the heat recovery steam generators, feedwater storage tank and the ammonia storage tank. The applicant states that the elimination of these pieces of equipment more than offset the additional natural gas pipeline and water pipelines called for in this simple cycle project. Staff agrees and concludes that it is likely that the construction emissions associated with the Sunrise Cogeneration Project far outweigh the construction emissions from the Sunrise Project.

**AIR QUALITY Table 4
Maximum Daily Construction Emissions (lbs/day)**

	NOx	VOC	CO	PM10	SOx	Fugitive PM10
Project Site, 230kV substation, Natural Gas Pipeline, Water Pipelines	221	37	314	24	21	154 ^a
Transmission line	132	15	55	15	12	Negligible
a – Fugitive dust emission estimate assumes no controls.						

PROJECT SITE

The power plant itself will take approximately 9 months to construct. The power plant project construction consists of three major areas of activity: 1) the civil/structural construction 2) the mechanical construction, and 3) the electrical construction. The greatest level of air emissions are generated during the civil/structural activity, where work such as grading, site preparation, foundations, utility installation and building erection occur. These types of activities require the use of large earth moving equipment, which generates considerable combustion emissions, along with creating fugitive dust emissions. The mechanical construction includes the installation of the heavy equipment, such as the combustion turbines, the heat recovery steam generators, pumps, piping and valves. Although not a large fugitive dust source, the large cranes used to install such equipment generate significantly more emissions than other construction equipment onsite. Finally, the electrical equipment installation occurs involving such items as transformers, switching gear, instrumentation and wiring. This is a relatively small emission generating activity in comparison to the early construction activities.

TRANSMISSION LINE

The construction of the transmission line is planned to take approximately 8 months, between the 1st and 8th month of the project construction schedule. The significant emission sources are the trucks used to deliver the transmission tower structural materials, boom trucks and mobile cranes (Radian 1999c). Maximum emissions from the transmission line construction are shown in AIR QUALITY Table 4. SPC has discussed several different options for the transmission line route; however, all the options should result in very similar emissions and impacts. Therefore staff will analyze only the currently preferred route (route B in the AFC) and assume that all alternative routes have similar emissions or less. Route B (also routes D, E and F) is approximately 22 miles long and generally heads towards the north through the Midway-Sunset and La Paloma power plants ending in the Midway Substation. There might be some minor expansion construction performed at the Midway substation. It is staff's opinion that whichever route is chosen (B, D, E, F or G) the air emissions and impacts will be very similar.

OPERATIONAL PHASE

EQUIPMENT DESCRIPTION

The major components of the SPC project consist of the following: two combustion turbine generators (CTG), using the General Electric (GE) Frame 7 FA each with a generating capacity of 165 MW (gross). Each of the CTGs would be equipped with evaporative inlet air coolers.

EQUIPMENT OPERATION

The CTGs will burn only natural gas, and there are no provisions for an alternative back-up fuel.

SPC is requesting that the project be analyzed with the assumption of 110 startups (and 110 shutdowns) per turbine each year. The duration of a startup is relatively short, approximately 20 minutes. However, in order to allow for failed startup attempts staff recommends that the SPC be allowed 1 hour for each startup.

EMISSION CONTROLS

The exclusive use of an inherently clean fuel, natural gas, will limit the formation of SO₂ and PM₁₀ emissions. Natural gas contains very small amounts of a sulfur compound known as mercaptan, which when combusted, results in sulfur dioxide emissions in the flue gas. However, in comparison to other fuels used in power plants, such as fuel oil or coal, the sulfur dioxide emissions from the combustion of natural gas are very low.

Like SO₂, the emissions of PM₁₀ from natural gas combustion are very low compared to the combustion of fuel oil or coal. Natural gas contains very little noncombustible gas or solid residue; therefore, it is a relatively clean-burning fuel. A sulfur content of 0.75 grains of sulfur per 100 standard cubic feet of natural gas was assumed for the SO₂ emission calculations.

To minimize NO_x, CO and VOC emissions during the combustion process, the GE 7FA turbine is equipped with dry low-NO_x combustor design developed by General Electric (GE). A more detailed discussion of this combustion technology is presented in the Mitigation section of this analysis.

PROJECT OPERATING EMISSIONS

The proposed project’s criteria air pollutant emissions during startup, shutdown and full load conditions are shown in AIR QUALITY Table 5. This table identifies combustion turbine emissions only. As this table shows, the highest emissions will occur during startup and shutdown, and are significantly higher than those during steady state, full load operation. This is particularly true for NO_x, VOC and CO emissions. These higher emissions occur because the turbine combustor technology is designed for maximum efficiency during full load steady state operation.

**AIR QUALITY Table 5
Project (Per CTG) Hourly Emissions
(pounds per hour [lbs/hr] except where noted)**

Operational Profile	NO _x	SO ₂	PM10	VOC	CO
Startup or Shutdown Lbs/event (20 minute events)	32.00	1.28	7.00	17.00	163.00
Full Load at 15°F	60.93	3.85	9.00	2.81	29.14
Full Load at 65°F	57.06	3.60	9.00	2.62	26.87
2 CTG Full Load at 15°F	121.86	7.70	18.00	5.62	58.28
2 CTGs Full Load at 65° F	114.12	7.20	18.00	5.24	53.74
1 CTG startup (20 minutes) and Full Load at 15°F (40 minutes)	72.62	3.85	13.00	18.87	182.43
2 CTG startup (20 minutes) and Full Load at 15°F (40 minutes)	145.24	7.70	26.00	37.74	364.86

(SJVUAPCD 2000a)

During startup and shutdown, combustion temperatures and pressures are rapidly changing, which results in less efficient combustion and higher emissions. The startup emission estimates reflect information provided by GE to the SPC, which is included in the AFC. Each startup attempt should last approximately 20-minutes and is assumed to have equivalent emissions as if the turbine were operating at 60% load for an hour. That is, the mass of pollutants that would be emitted in one hour of operation at 60% load are the same as the mass of pollutants that would be emitted during one 20-minute startup. The SPC makes the conservative assumption that the shutdown emissions will be similar to the startup emissions, which will not be the case. Shutdown emissions, although higher than steady state emissions, are typically significantly less than the startup emissions because the system is operating at maximum efficiency.

Starting up a simple-cycle power plant is a short duration event (20 minutes in most cases). However, from time to time the turbine fails to startup and the operators must attempt another startup. Therefore, to be conservative, staff assumes that the operators will attempt no more than three consecutive startups. In reality, it is very unlikely that any operator would make three start-up attempts before determining and rectifying the cause of a failed startup attempt.

AIR QUALITY Table 6 shows the operational emission rate for PM10 to be 9 lbs/hr. This is half of what the vendor will guarantee (18 lbs/hr). Sunrise justifies the use of this emission level to determine project impacts by identifying similar measured PM10 emission in other similar power plants currently in operation.

There are two components in the source test measurement of PM10, the filterable (front half) and the condensable (back half). Staff reviewed the summary of PM10 source tests provided by California Unions for Reliable Energy (CURE). It demonstrated that the condensable fraction is in many cases as high as the filterable fraction, particularly for power plants in the southern San Joaquin Valley. However, the only combustion turbines (7F models) that are close in size and configuration to the Sunrise project is the Crockett Cogeneration Project, located in the Bay Area. In 1998, the Crockett Project recorded filterable PM10 at 2.82 lbs/hr. Previous source tests in 1996 and 1997 showed filterable PM10 at 2.3 lbs/hr or less. Based on these measurements and the indications that other smaller combustion turbines can produce similar results, staff is comfortable using the 9 lbs/hr estimate as a PM10 emission limit for the Sunrise project.

The daily emissions from the project are shown in AIR QUALITY Table 6 for turbine proposed daily operation. SPC proposes to operate the simple cycle facility no more than 16 hours in any one day. SPC assumes that the worst case will occur in winter (15 °F ambient air temperature) and will include starting both turbines up, operating them for 16 hours and then shutting them both down.

**AIR QUALITY Table 6
Project Daily Emissions
(pounds per day [lbs/day])**

Operational Profile	NO _x	SO ₂	PM10	VOC	CO
2 turbine startup, operate at Full Load for 16 hours and shut down.	2077.76	128.34	316.00	157.92	1584.48

(SJVUAPCD 2000a)

Annual emissions are summarized in AIR QUALITY Table 7. SPC has requested that the project be analyzed assuming 110 startups per turbine per year, and 110 shutdowns per turbine per year. The balance of operation (1,734 hours) between starting up and shutting down is assumed to be at full load operation of the CTGs. Since SPC proposes to operate the simple cycle facility as a peaker, they expect to operate only on those days when it is economically feasible. AIR QUALITY Table 8 represents SPC's best estimate of the number of hours of operation for each quarter of the year that it would be economically feasible to operate the power plant.

AIR QUALITY Table 7
Sunrise Simple Cycle Quarterly and Annual Emissions

Quarter	PM10	SO_x	NO_x	VOC	CO
1 ^A (lbs)	3,964.00	1,606.74	26,036.00	2,008.00	20,132.00
2 ^B (lbs)	7,584.00	2,880.00	46,894.08	3,644.16	36,284.16
3 ^C (lbs)	18,780.00	7,128.00	116,094.00	9,058.00	90,173.00
4 ^D (lbs)	3,964.00	1,606.74	26,036.00	2,008.00	20,132.00
Annual (lbs)	34,292.00	13,221.48	215,060.08	16,718.16	166,721.16
Annual (tons)	17.15	6.61	107.53	8.36	83.36
A 13 startups/13 shutdowns @ 20 min. each and 200 hrs of full load operation.					
B 24 startups/24 shutdowns @ 20 min each and 384 hrs of full load operation.					
C 60 startups/60 shutdowns @ 20 min each and 950 hours of full load operation.					
D 13 startups/13 shutdowns @ 20 min. each and 200 hrs of full load operation.					

INITIAL COMMISSIONING PHASE OPERATION AND EMISSIONS

The combustion turbines will undergo an initial firing and commissioning phase prior to commercial operation. During this period, emissions may exceed permitted levels, due to startups, shutdowns, extended periods of low load operation and periods of time when the low-NO_x burners will need to be fine tuned for optimum performance.

The District rules and regulation do not allow for excess emissions (emissions beyond the emission limits imposed) during the initial commissioning phase of the project. Rather, the District relies on its breakdown and variance regulations that currently exist in the District rules and regulations. Since there is no certainty that these excess emissions will occur during initial commissioning, staff concludes that there is no evidence that initial commissioning will create any potential emission impacts.

FACILITY CLOSURE

The Sunrise project will either close at the end of three years, or through an major amendment process be converted in to a combined cycle or cogeneration power project. Also, some unexpected situation such as a natural disaster or catastrophic facility breakdown may force the Sunrise project to close. When or if the facility closes, all sources of air emissions would cease and thus all impacts associated with those emissions would no longer occur.

A Permit to Operate, issued by the District under Rule 2010, is required for operation of the facility once it is constructed, and is usually renewed on a five year schedule. However, during those five years, the SPC must still pay permit fees annually. If the SPC chooses to close the facility and not pay the permit fees, then the Permit to Operate would be cancelled. In that event, the project could not restart and operate unless the fees are paid to renew the Permit to Operate. It is uncertain at this time what operating period the Final Determination of Compliance (FDOC) will cover. The FDOC is expected from the SJVAPCD November 22, 2000. If SPC were to decide to dismantle the project, there would likely be fugitive dust emissions associated with this dismantling effort. District Rule 8020 requires that

during demolition fugitive dust emissions be limited to no greater than 40% opacity by means of water application or chemical suppressants. The Facility Closure Plan, to be submitted to the Energy Commission Compliance Project Manager, should include the specific details regarding how SPC plans to demonstrate compliance with the District Rule 8020 in the event of a closure.

PROJECT INCREMENTAL IMPACTS

MODELING APPROACH

SPC performed an air dispersion modeling analysis to evaluate the Sunrise project's potential impacts on the existing ambient air pollutant levels, both during construction and operation. An air dispersion modeling analysis usually starts with a screening level analysis. Screening models use very conservative assumptions, including meteorological conditions that may or may not actually occur in the area. The impacts calculated by screening models, therefore, can be more than double the actual or expected impacts. If the screening level impacts are significant, refined modeling analysis is performed. A major difference in the refined modeling is that hour-by-hour meteorological data collected near the project site is used. The Industrial Source Complex Short-Term model, Version 3, known as the ISCST3 model, was used for the refined modeling.

PROJECT DIRECT IMPACTS

CONSTRUCTION IMPACTS

SCP performed air dispersion modeling analyses of the potential construction impacts at the project site. The analyses included fugitive dust generated from the construction activity (modeled as an area source) and combustion emissions from the equipment (modeled as point sources). The emissions used in the analysis were the highest emissions of a particular pollutant during a one month period, converted to a gram per second emission rate for the model. Most of the highest emissions occurred in the initial months of the 9-month construction period. The results of this modeling effort are shown in AIR QUALITY Table 8. They show that the construction activities would cause a violation of the state 24-hour and annual average PM10 standards. In reviewing the modeling output files, staff determined that the project's construction impacts are not occasional or isolated events, and occur over an area within a few hundred meters of the project site. These predicted impacts are of a high magnitude for a number of reasons.

AIR QUALITY Table 8
Maximum Construction Impacts

Pollutant	Averaging Time	Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	Limiting Standard ($\mu\text{g}/\text{m}^3$)	Percent of Standard
NO ₂	1-hour	298 ^a	97	395	470	84%
	Annual	9.6 ^b	20.6	30.2	100	30%
CO	1-hour	1,486	2,941	4,427	23,000	19%
	8-hour	680	2,222	2,902	10,000	29%
SO ₂	1-hour	99	104	203	655	31%
	3-hour	67.9	68	135.9	1300	10%
	24-hour	23.3	38	61.3	130	47%
	Annual	1.2	1.8	3	80	3.75%
PM10	24-hour	137	118	255	50	510%
	Annual	9.3	42.6	51.9	30	173%
a – Results obtained using the Ozone Limiting Method (OLM).						
b – Results obtained using the Ambient Ratio Method (ARM) default value 0.75.						

First, the model itself calculates impacts that are conservative, usually exceeding actual impact levels. Second, some of the sources of combustion emissions (the bulldozers and trucks) are mobile sources, not stationary sources, as assumed in the input to the model. As mobile sources, the air quality impacts would not always be at the same locations. Third, it was assumed that all the equipment identified for the modeling evaluation would be running simultaneously. However, it is doubtful that all the major equipment would all be operating at one time. Finally, the emissions inputs to the model were from the highest monthly emissions assumed during the 9-month construction period. The levels of emissions used reflect a period of activity of approximately 2 months, not the entire 9-month construction. During the other months of construction work, considerably fewer pieces of emission generating equipment will be used and thus the impacts will be lower.

Therefore, although the modeling results for the construction of the Sunrise project predict an impact on the PM10 ambient air quality standards, it is doubtful that the impacts predicted by the model would actually occur, or that if they did, that the general public would be exposed to these impacts. However, it is not possible to determine to what extent the modeling results are overestimating the Sunrise project construction emission impacts. Therefore, staff concludes that the emissions from the construction of the Sunrise project have the potential to cause unavoidable short-term significant impacts on the PM10 ambient air quality standards if left unmitigated.

PROJECT OPERATION IMPACTS

The potential air quality impacts of the Sunrise project operation are discussed in the following sections for fumigation meteorological conditions, combustion turbine startup and combustion turbine steady-state operations.

FUMIGATION

During the early morning hours before sunrise, the air is usually very stable. During such stable meteorological conditions, emissions from elevated stacks rise through this stable layer and are dispersed. When the sun first rises, the air at ground level is heated, resulting in a vertical (both rising and sinking air) mixing of air for a few hundred feet or so. Emissions from a stack that enter this vertically mixed layer of air will also be vertically mixed, bringing some of those emissions down to ground level. Later in the day, as the sun continues to heat the ground, this vertical mixing layer becomes higher and higher, and the emissions plume becomes better dispersed. The early morning air pollution event, called fumigation, usually lasts approximately 30 to 90 minutes. Since fumigation impacts will not typically occur much beyond a 1-hour period, only impacts on 1-hour standards are addressed. AIR QUALITY Table 9 shows the results of the fumigation modeling that the SPC performed. These results demonstrate that the 1-hour standards for NO₂, SO₂ and CO are not exceeded under fumigation conditions for the Sunrise project. Therefore, staff concludes that under fumigation conditions, the Sunrise project emissions have no potential to cause a significant impact on the ambient air quality standards.

**AIR QUALITY Table 9
1-hour Fumigation Modeling Results**

Pollutant	Averaging Time	Impact (µg/m ³)	Background (µg/m ³)	Total Impact (µg/m ³)	Limiting Standard (µg/m ³)	Percent of Standard
NO ₂	1-hour	6.1	97	103	470	22
CO	1-hour	15.3	2,941	2,956	23,000	13
SO ₂	1-hour	0.3	104	104	655	16
(SCPP 2000a)						

STARTUP, SHUTDOWN AND STEADY STATE OPERATIONS

SPC provided a refined modeling analysis, using the ISCST3 model to quantify the potential impacts of the Sunrise project both during normal steady state operation and during startup or shutdown conditions. The startup circumstances of the project are such that the combustion turbines will be started sequentially. That is, there will be no simultaneous startup of the two turbines. A startup sequence of a turbine will only occur when the other turbine is operating at steady state or is not operating at all. Startup conditions can cause short-term increases in local ambient air pollution levels for the following reasons. First, emissions (particularly of NO_x and CO) can be high. Second, low volumetric flow rates and exhaust gas temperatures can result in low exhaust plume rise and consequently higher ground level impacts.

The SPC modeling analysis assumes that both turbines would startup simultaneously and then operate at full (100%) capacity for 40 minutes. However, SPC decided to be as conservative as possible in their modeling efforts. They therefore used the ambient conditions and stack parameters that produced the maximum impact with the highest emission rates (which normally would correspond).

**AIR QUALITY Table 10
Combustion Turbine Refined Modeling Maximum Impacts**

Pollutant	Average Time	SPC's Modeled Impacts ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	Limiting Standard ($\mu\text{g}/\text{m}^3$)	Percent of Standard
NO ₂	1-hour	65.4	97	162.4	470	35
	Annual	0.05	20.6	20.7	100	21
CO	1-hour	164	2,941	3105	23,000	14
	8-hour	13.0	2,222	2235	10,000	22
SO ₂	1-hour	3.5	104	107.5	655	16
	3-hour	2.0	68	70	1300	5
	24-hour	0.3	38	38.3	130	29
	Annual	0.003	1.8	1.8	80	2
PM10	24-hour	0.67	118	118.7	50	237
	Annual	0.01	42.6	42.6	30	142
A Background data from Fellows monitoring station 1992-1995 B Impact assumes 100% conversion for NO _x to NO ₂						

(Sunrise 2000a)

AIR QUALITY Table 10 indicates that during a project startup scenario, the impacts from that startup, plus background NO₂ ambient levels would result in the highest contribution of the project to the 1-hour state NO₂ standard. The highest SO₂ contribution to the 1-hour standard occurs during the startup scenario, that is one turbine running at full load while the other attempts 3 consecutive 20-minute startups. The highest SO₂ contribution to the 3-hour, 24-hour and annual standards occur when both turbines are running at full load. The highest PM10 contribution to the annual standard also occur when both turbines are running at full load. Startup impacts on long term standards for SO₂ and PM10 are significantly less because these emission estimates are based on fuel consumption. Since there is significantly less fuel burned during startup than at full load, there are fewer impacts.

AIR QUALITY Table 10 shows that the air pollution impacts would not cause a violation of any NO₂, CO or SO₂ ambient air quality standards. The project's PM10

impacts could contribute to existing violations of the state 24-hour and annual average PM10 standards. However, because of the conservatism of the air dispersion model itself, staff believes that the actual impacts from the project would be significantly less than the projected modeled impacts shown in AIR QUALITY Table 10. However, it is not possible to determine to what extent, if at all, the model may be over-predicting the PM10 impacts. Therefore, staff concludes that the emissions from the expected operation of the Sunrise project have the potential to cause significant impacts on the PM10 ambient air quality standards if left unmitigated.

VISIBILITY IMPACTS

A visibility analysis of the Sunrise project's gaseous emissions is required under the Federal Prevention of Significant Deterioration (PSD) permitting program. The analysis addresses the contributions of gaseous emissions (primarily NO_x) and particulate (PM10) emissions to visibility impairment on the nearest Class 1 PSD areas, which are national parks and national wildlife refuges. The nearest Class 1 areas to the Sunrise project are the Domeland Wilderness Area 90 miles to the northeast and the San Rafael Wilderness Area 35 miles to the south. SPC used the EPA approved model VISCREEN to assess the project's visibility impacts. The results from the VISCREEN modeling analysis indicate that the project's visibility impacts would be below the significance criteria for contrast and perception. Therefore, the project's visibility impacts on these Class 1 areas are considered insignificant.

SECONDARY POLLUTANT IMPACTS

The project's gaseous emissions -- NO_x, SO₂, and VOC -- can contribute to the formation of ozone and secondary PM10.

Ozone

There are air dispersion models that can be used to quantify ozone impacts, but they are used for state implementation planning efforts (typically at the air district level) where hundreds or even thousands of sources are input into the model to determine ozone impacts. There are no regulatory models approved for assessing single source emissions for ozone impacts. However, because of the known relationship of NO_x and VOC emissions to ozone formation, it can be said that these emissions from the Sunrise project do have the potential to contribute to higher ozone levels in the region. While this potential can not be quantified, it can be conservatively characterized as significant if left unmitigated.

In addition, emissions from the San Joaquin Valley Air Basin are considered a significant contributor to the ozone exceedences in the South Central Coast Air Basin (SCCAB) (ARB 1996). That is, air pollution from the San Joaquin Valley in combination with emissions from within the SCCAB do cause violations of ozone ambient air quality standards within the SCCAB. However, ARB has found that San Joaquin Valley emissions alone do not cause violations of ozone standards within the SCCAB. To reduce ozone precursor (NO_x and VOC) emissions within their own District as well as reducing the impact to neighboring air basins, the San Joaquin Valley Unified Air Pollution Control District requires Best Available Retrofit Control

Technology (BARCT) (ARB 1996) to a number of categories of stationary sources. In addition, the Sunrise project's operational emissions of ozone precursors will be fully offset. The project's construction impacts are very short term and are not likely to contribute to significant ozone formation in the SCCAB. Therefore, it is staff's opinion that there will be no significant impacts from the project emissions on the formation of ozone in the South Central Coast Air Basin. Therefore, staff believes that there will be no significant ozone impact, either within or outside the San Joaquin Valley Air Basin.

Secondary PM10

Concerning secondary PM10 (primarily ammonium nitrate but also ammonium sulfate) formation, the applicant for the La Paloma Project (LPPP 1999a) submitted a conclusion from a study by Sonoma Technology, Inc. which states that the San Joaquin Valley is generally ammonia rich during the winter season when ambient PM10 levels are highest. Because there is more than sufficient ambient ammonia available for the NO_x or SO_x to react with and form PM10, the NO_x and SO_x emissions from the Sunrise project could add to ammonium nitrate and ammonium sulfate (PM10) formation. However, the process of gas-to-particulate conversion is complex and depends on many factors, including local humidity and the presence of other compounds. Currently, there is no agency (EPA or CARB) recommended models or procedures for estimating nitrate or sulfate formation from single source emissions. Nevertheless, studies during the past two decades have provided data on the oxidation rates of SO_2 and NO_x . The data from these studies can be used to approximate the conversion of SO_2 and NO_x to particulate. This can be done by using an aggregate conversion factor (typically about 0.01 to 1 percent per hour) with Gaussian dispersion models such as ISCST3. The model is run with and without chemical conversion (decay factor) and the difference corresponds to the amount of SO_2 and NO_2 that is converted to particulate. This approach is an oversimplification of a complex process; nevertheless, given the stringency of the PM10 and the new potential PM2.5 standards, staff believes this approach should be used to address the PM10 and PM2.5 issue.

Staff, as part of its cumulative modeling analysis, quantified the potential secondary PM10 impacts from the three power projects in the area currently before the Commission for licensing: La Paloma, Sunrise and Elk Hills. For NO_x to nitrate formation, staff assumed a conversion rate of 33% over a time span of 18 to 24 hours. For oxides of sulfur to sulfate formation, staff assumed a conversion rate of 50% over 8 hours. These conversion rates can be input into the ISCST3 model to predict possible nitrate and sulfate PM10 impacts. The combined three-project nitrate impact was predicted to be approximately $1\mu\text{g}/\text{m}^3$, located about 50 miles to the northeast of the projects' sites. The combined sulfate impacts would be approximately $0.1\mu\text{g}/\text{m}^3$, located about 30 miles to the northeast. Based on these results Staff concludes that the Sunrise project NO_x and SO_x emissions do have the potential to contribute to secondary PM10 levels in the region if left unmitigated.

CUMULATIVE IMPACTS

Staff's assessment of the cumulative impacts associated with the Sunrise project considers several elements in or near the proposed project site. Specifically, these elements will include three other power plant projects in the western Kern County area La Paloma Generating Project , Elk Hills Power Project and Western Midway-Sunset and the formation of secondary pollutants (ozone and PM10).

To evaluate reasonably foreseeable future projects as part of a cumulative impact analysis, staff needs specific information about the projects. This information is only available for those projects for which an application has been submitted to the District for a permit. Therefore, we evaluate those probable future projects in our cumulative impacts analysis that are currently under construction, or are currently under District review. Projects located up to six miles from the proposed facility site are usually included in the analysis. Staff requested the applicant to perform an air dispersion modeling analysis that includes four proposed projects in the vicinity: the Sunrise project, the La Paloma Generating Project, the Elk Hills Power Project and the Western Midway-Sunset Cogeneration Power Project. SPC used the ISCST3 air dispersion model in its cumulative impacts analysis, along with the 1993 meteorological file provided by the La Paloma Power Project applicant. The results of this modeling analysis are shown in AIR QUALITY Table 11.

AIR QUALITY Table 11
Maximum Cumulative Impacts

Pollutant	Averaging Time	Impacts ($\mu\text{g}/\text{m}^3$)				Background ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	Limiting Standard ($\mu\text{g}/\text{m}^3$)	Percent of Standard
		Sunrise	La Paloma	Elk Hills	Midway				
NO ₂	1-hour	0	0	0	280.7	97	377.7	470	80
	Annual	0.174	0.104	0.03	3.67	20.6	24.58	100	25
CO	1-hour	0	0	0	997.4	2941	3938.4	23,000	17
	8-hour	8.81	1.7	0.29	180.6	2222	2413.4	10,000	24
SO ₂	1-hour	0	17.84	0	0	104	121.84	65	18
	3-hour	0	10.67	0	0	68	78.67	1300	6
	24-hour	0	1.53	0.007	0	38	39.54	105	38
	Annual	0.0002	0.207	0.0025	0.0008	1.8	2.01	80	3
PM10	24-hour	0	6.76	0.06	0	118	124.82	50	250
	Annual	0.0004	0.915	0.0203	0.0018	42.6	43.54	30	145

(Sunrise 2000a)

As the data in AIR QUALITY Table 11 shows, the cumulative air quality effects of the three projects, La Paloma, Elk Hills and Sunrise, do not cause a new violation of any NO₂, CO or SO₂ ambient air quality standards. The three projects would contribute to already existing violations of the state PM10 ambient air quality standards. However, all three of these projects will be required to provide PM10 emission offsets to mitigate their PM10 impacts.

MITIGATION

SUNRISE POWER PROJECT'S PROPOSED MITIGATION

CONSTRUCTION MITIGATION

As discussed earlier in the applicable LORS section, there are a series of District rules under Regulation 8 that limit fugitive dust during the construction phase of a project. Those rules require the use of chemical stabilizing agents and dust suppressants or gravel areas on site, and the wetting or covering of stored earth materials on site. They also encourage, although do not require, the use of paved access aprons, gravel strips, wheel washing or other means to limit mud or dirt carryout onto paved public roads. Because they are required by District rules, SPC will employ appropriate fugitive dust mitigation measures to limit their construction related PM10 emissions.

OPERATIONS MITIGATION

The Sunrise project's air pollutant emissions impacts will be reduced by using emission control equipment on the project and by providing emission offsets. To reduce NO_x emissions, SPC proposes to use dry-low NO_x combustors in the CTGs.

To reduce CO and VOC emissions, SPC proposes to use good combustion and maintenance practices. PM10 emissions will be limited by the use of a clean burning fuel (natural gas) and the efficient combustion process of the CTGs. The use of natural gas as the only fuel will limit SO₂ emissions.

COMBUSTION TURBINE

Dry Low-NO_x Combustors

Over the last 20 years, combustion turbine manufacturers have focused their attention on limiting the NO_x formed during combustion. Because of the expense and efficiency losses due to steam or water injection in the combustor cans to reduce combustion temperatures and the formation of NO_x, CTG manufacturers are presently choosing to limit NO_x formation through the use of dry low-NO_x technologies. The GE version of the dry low-NO_x combustor is a four-stage ignition system. Initially the fuel/air mixture is ignited in two independent combustors (0% to 35% load). Then the startup sequence moves to a lean-lean operation (35% to 70% load) where the center burner is engaged as well. Then second stage burning

is begun and all the fuel is directed to the center burner. The second stage burning is a transient event while proceeding to the premixed phase. Premixed operation (70% and 100% load) has fuel being pumped to all burners, but ignition only in the center burner.

In this process, firing temperatures remain somewhat low, thus minimizing NO_x formation, while thermal efficiencies remain high. At steady state CTG loads greater than 40 percent, NO_x concentrations entering the HRSG are 25 ppm corrected to 15 percent O₂. CO concentrations are more variable, with concentrations greater than 100 ppm at 50 percent load, dropping to 5 ppm at 100 percent load.

EMISSION OFFSETS

District Rule 2201, Section 4.2, requires that SPC provide emission offsets, in the form of banked Emission Reduction Credits (ERC), for the project's emissions increases of NO_x, SO₂, VOC and PM10. Offsets for the project's CO emissions are not required since the project will not cause any violations of any CO standard and the area currently does not experience any violations of any CO standard.

SPC has submitted several ERC certificates to offset the project's emissions. These offsets are calculated on a quarterly basis pursuant to District Rule 2201. SPC has obtained sufficient offsets to comply with the District requirements and offset project emissions on a quarterly basis.

ADEQUACY OF PROPOSED MITIGATION

CONSTRUCTION MITIGATION

SPC is required to comply with District Regulation 8 for limiting fugitive dust emissions during project construction. Staff believes that additional measures are necessary to adequately mitigate potential construction impacts (refer to staff proposed mitigation below).

OPERATIONS MITIGATION

EMISSION CONTROLS

SPC has proposed, in their opinion, all practical and technically feasible mitigation measures to limit NO_x emissions from the GE combustion turbines to 9.0 ppm over a 1-hour average. This level of control is defined as Best Available Control Technology by the District. However, staff notes that the 9 ppm emissions rate is higher than that the 5 ppm emission rate recommended in the guidance published by the California Air Resources Board for powerplants (Guidance for Power Plant Siting and Best Available Control Technology, CARB, September, 1999). In addition, SPC has repeatedly stated that although they are not requesting expedited treatment pursuant to AB 970 (Stats. 2000, ch. 329, § 5), their request for an expedited decision is "in the spirit of AB 970". AB 970 also specifies a maximum NO_x emission level of 5 ppm for projects that are directly permitted by the air district. Thus, notwithstanding the District's BACT determination, we cannot

conclude that the Sunrise project should be licensed at 9 ppm when both ARB and the legislature have indicated that lower emission rates are appropriate, even when licensing facilities on an emergency basis to avoid critical energy shortages in the near term.

Staff is aware that the SPC believes that it is not possible to achieve lower emission rates with the turbines they have selected. However, staff has obtained information that preliminarily indicates that lower rates are possible for these turbines with a re-design of the flue gas ductwork. As a result, we believe that these lower rates are technically feasible, although we recognize that it will take time to investigate that possibility and that this issue cannot be resolved in time to allow operation during the summer of 2001. To address these conflicting concerns, we recommend that the Commission establish a condition of certification that allows operation at 9 ppm until November 1, 2001, and at 5 ppm thereafter. We believe that this strikes an appropriate balance between the need for power next summer and the environmental issues created by a NOx emission rate higher than that recommended by CARB and mandated by the legislature for similar types of projects.

OFFSETS

SPC has obtained sufficient offsets to comply with the District requirements and offset project emissions on a quarterly basis.

STAFF PROPOSED MITIGATION

CONSTRUCTION MITIGATION

As stated above, there are a number of rules in the District's Regulation 8 that will minimize fugitive dust emissions. Those rules allow for some latitude and flexibility as to how they will demonstrate compliance. In general, SPC will be required to control fugitive dust emissions to the extent feasible.

The modeling assessment discussed earlier shows that the combustion sources used for heavy construction have the potential for causing significant air quality impacts. SPC is not proposing to minimize combustion emissions such as NOx, CO, VOC and PM10. Control of combustion emissions associated with construction is not required by District rules. However, staff is aware of an exhaust catalyst device that is available and cost effective which controls combustion emissions from construction equipment. The catalyst is a post combustion soot filter and oxidation device that replaces the muffler of the construction equipment. It reduces CO and hydrocarbon (VOC) emissions by approximately 80-90% and PM10 emissions by approximately 90-99%. This technology has been in the market for approximately 10 years and is available from several companies. The Cinco Group offers the DPX Catalyst installed at approximately \$8,000 each. Under SPC's current construction plan of using approximately 25 different pieces of heavy duty construction equipment, the cost of these catalysts would be approximately \$200,000.

OPERATIONS MITIGATION

The SCP emissions (project emissions minus the emission offsets provided) are fully offset on a quarterly basis. Therefore, it is staff's opinion that the Sunrise project's potential impacts are mitigated (i.e. offset).

STAFF EVALUATION OF LOCAL AND FEDERAL PERMITS

Staff relies on the local air district to evaluate the proposed project for compliance with their rules and regulations, which is the Determination of Compliance (DOC). Also, the US EPA must issue a Prevention of Significant Deterioration (PSD) permit showing that the proposed project meets the PSD requirements. Both of these analyses (the DOC and the PSD) include permit conditions for the project. To date, staff has received only the PDOC from the District. We understand that a PSD permit may not be needed given that the project will be a stationary source with Nox emissions of less than 250 tons per year.

DETERMINATION OF COMPLIANCE

Staff has reviewed the preliminary determination of compliance (PDOC) issued by the District and has no comments on that document.

EPA PREVENTION OF SIGNIFICANT DETERIORATION

EPA has not yet re-issued the PSD for the new Sunrise simple cycle project.

COMPLIANCE WITH LORS

FEDERAL

The SPC is currently under review by EPA on the Prevention of Significant Deterioration (PSD) permit.

STATE

The project, with the anticipated full mitigation (offsets) that will be necessary for the project to secure a Determination of Compliance from the SJVUAPCD, should comply with Section 41700 of the California State Health and Safety Code.

LOCAL

Compliance with specific SJVUAPCD rules and regulations are discussed below. For a more detailed discussion of the compliance of the Sunrise project, please refer to the Determination of Compliance (SJVUAPCD 1999h).

RULE 2201 - NEW AND MODIFIED STATIONARY SOURCE REVIEW RULE

SECTION 4.1 - BEST AVAILABLE CONTROL TECHNOLOGY

The SJVUAPCD has determined the Best Available Control Technology for the emission generating equipment and is summarized in the following AIR QUALITY Table 12.

**AIR QUALITY Table 12
BACT Determinations**

Pollutant	Gas Turbine Engines
PM10	Air inlet filters, lube oil vent coalescer and opacity <5%, natural gas fuel
SO ₂	Utility quality natural gas
NO _x	2.5 ppm @ 15% O ₂ , 1-hr average
VOC	1.2 ppm @ 15% O ₂ 3-hr average
CO	6 ppm @ 15% O ₂ 3-hr average

Staff recognizes that the District has the authority to establish BACT levels for projects within its jurisdiction. However, in light of information about the possibility of lowering the NO_x emission rates for the Sunrise turbines, as well as the guidance provided by CARB and by the legislature (which is specifically directed at these types of projects when they are permitted by air districts), we believe that a NO_x emission rate of 5 ppm should be required, with an allowance for an emission rate of 9 ppm for the first year of operation. Should the applicant believe that 5 ppm is not a feasible emission rate for the second and third years of operation, it can petition the Energy Commission for an amendment allowing a higher emission rate. In the interim, staff will evaluate the new information and will be prepared to address the feasibility issue should it arise next year.

SECTION 4.2 - OFFSETS

SPC demonstrated through air dispersion modeling that their project would not cause a violation of any CO ambient air quality standard, therefore CO emission offsets are not required for the combustion turbine CO emissions. All other project emissions are subject to emissions offsets, which are discussed in the Mitigation section of this analysis, and in detail in the DOC.

SECTION 4.3 - ADDITIONAL NEW SOURCE REQUIREMENTS

Rule 4.3.2.1 requires that a new source not cause, or make worse, the violation of an ambient air quality standard as demonstrated through analysis with air dispersion models. Because the project demonstrates that it does not cause a violation of any CO ambient air quality standard, and that the project is fully offset for its other emissions, the District has determined that the Sunrise project will not make the ambient air quality worse

SECTION 4.3.3 AND SECTION 5.2.5 EXISTENCE OF OUTSTANDING NOTICES OF VIOLATIONS

Section 4.3.3 and section 5.2.5 pertain to the existence of outstanding Notice of Violations (NOVs) issued against an applicant (or parent company). NOVs were identified during the comment period of the Preliminary Determination of Compliance (PDOC) for the original Sunrise Cogeneration Power Project against Texaco (parent company to Sunrise). The Final Determination of Compliance (FDOC) was issued with the condition that Texaco resolve all outstanding NOVs. A letter was issued by the District on December 2, 1999 (after the FDOC was issued)

stating that these NOVs have been resolved to the satisfaction of the District Air Pollution Control Officer (APCO). However, the US EPA went on record as stating that the DOC issued by the District is invalid. More recent correspondence from US EPA indicates that it does not object to the Commission's issuance of a license; however, in telephone conversations, US EPA has indicated that it has not changed its conclusion that the project is still not in compliance with applicable requirements.

On October 25, 2000, SPC submitted to the Commission a copy of a letter to the District indicating that Edison Mission Energy will be purchasing the Sunrise Project. In the letter, Edison Mission Energy states that Texaco will no longer have any ownership interest in the project and that it will deliver a Certificate of Compliance to the District later this week. If that occurs, staff believes that the issue of NOVs issued against Texaco subsidiaries will be resolved, and staff will not oppose issuance of a license for the project on those grounds.

Rule 2520 – Federally Mandated Operating Permits

SPC is required to file a Title V Operating permit with the District within 12 months of commencing operation. Presently, no action is required.

Rule 2540 – Acid Rain Program

An acid rain application must be submitted at least 24 months prior to the project generating electricity and was submitted in July 1999. The requirements will include that NO_x and SO_x emissions will have to be monitored and a small quantity of SO_x allowance will have to be provided from a national SO_x allowance bank. Compliance will be determined at a later date.

Rule 4001 - New Source Performance Standards

Based on the heat rate of the GE Frame 7FA turbine, a NSPS NO_x limit is calculated at 109 ppmv at 15% O₂. The SCPP will be permitted at 9 ppmv at 15% O₂. The SO_x emission concentration will be 0.41 ppmv at 15% O₂ which is less than the NSPS requirement of 150 ppmv. The sulfur content of the natural gas fuel is equivalent to 0.003% which is less than the NSPS requirement of 0.8%. Compliance with Rule 4001 is therefore demonstrated.

Rule 4101 - Visible Emissions

All equipment will be limited to a 5 percent opacity limit by permit condition, which is less than the rule requirement of 20 percent opacity.

Rule 4201 - Particulate Matter Concentration

The District determined that the particulate emissions from the GE Turbines at 60% load, 115°F ambient air temperature are 0.0022 gr/dscf. This emission rate is below the rule limit of 0.1 gr/dscf, therefore compliance is demonstrated.

Rule 4703 - Stationary Gas Turbines

The permitted NO_x limit of 9 ppm is below the rule mandated limits of 15 ppm for non-SCR controlled turbines. The permitted CO limit of 6 ppm is well below the rule requirement of 25 ppm.

Rule 4801 - SO₂ Concentration

The fuel sulfur content of the natural gas to be used at the SPCPP will result in a SO₂ emission concentration of 0.41 ppm @ 15% O₂ and is not expected to exceed the 2,000 ppm limit imposed by this rule.

Rule 8010 - Fugitive Dust Administrative Requirements for Control of Fine Particulate Matter (PM-10)

SPC will provide a Construction Fugitive Dust Mitigation Plan that will discuss the types of chemical stabilizing agents and dust suppressant materials they intend to use.

Rule 8020 - Fugitive Dust Requirements for Control of Fine Particulate Matter (PM-10) from Construction, Demolition, Excavation, and Extraction Activities

The Construction Fugitive Dust Mitigation Plan will specify the specific measures that SPC will employ to limit fugitive dust and thus comply with this rule.

Rule 8030 - Control of PM₁₀ from Handling and Storage of Bulk Materials

The Construction Fugitive Dust Mitigation Plan will specify the specific measures that SPC will employ to limit fugitive dust during the handling and transport of any borrow soil if needed and thus comply with this rule.

Rule 8060 - Control of PM₁₀ from Paved and Unpaved Roads

The Construction Fugitive Dust Mitigation Plan will specify the use of chemical dust suppressant and/or the use of paved shoulders on paved roadways that will demonstrate compliance with this rule.

Rule 8070 - Control of PM₁₀ from Vehicle/Equipment Parking, Shipping, Receiving, Transfer, Fueling and Service Areas

The Construction Fugitive Dust Mitigation Plan will include measures to limit fugitive dust from unpaved parking areas and the tracking out of mud and dirt onto public roadways, and thus demonstrate compliance with this rule.

CONCLUSIONS AND RECOMMENDATIONS

The Sunrise project's potential air quality construction impacts are mitigated to a level of insignificance based on staff's proposed mitigation (see Conditions of Certification AQ-C1 through C3).

At present staff has determined that the Sunrise Simple Cycle Project is fully mitigated based on quarterly offsets will comply with applicable laws, regulations and standards. However, staff has information that the appropriate BACT emission level for NO_x is in question (see earlier discussed under "STAFF PROPOSED MITIGATION". It is possible that lower emission rates may be achievable for these turbines with a re-design of the flue gas ductwork. We recognize that it will take time to investigate that possibility and that this issue cannot be resolved in time to allow operation during the summer of 2001. To address this potential opportunity, we recommend that the Commission establish a condition of certification that allows operation at 9 ppm until November 1, 2001, and at 5 ppm thereafter. We believe that this strikes an appropriate balance between the need for power next summer and the environmental issues created by a NO_x emission rate higher than that recommended by CARB and mandated by the legislature for similar types of projects. .

The cumulative air quality effect of the project does not result in a new violation of any ozone, NO₂, CO or SO₂ ambient air quality standard. The project will provide emission reduction credits to offset the project's contribution to existing violations, thereby mitigating such impacts to insignificance evaluated in the would contribute to already existing violations of the state PM₁₀ ambient air quality standards. However, all three of these projects will be required to provide PM₁₀ emission offsets to mitigate their PM₁₀ impacts.

CONDITIONS OF CERTIFICATION

AQ-C1 Prior to the commencement of project construction, the project owner shall prepare a Construction Fugitive Dust Mitigation Plan that will specifically identify fugitive dust mitigation measures that will be employed for the construction of the Sunrise project.

- a) The Construction Fugitive Dust Mitigation Plan shall specifically identify measures to limit fugitive dust emissions from construction of the project site. Measures that should be addressed include the following:
- the identification of the employee parking area(s) and surface of the parking area(s);
 - the frequency of watering of unpaved roads and disturbed areas;
 - the application of chemical dust suppressants;
 - the stabilization of storage piles and disturbed areas;
 - the use of gravel in high traffic areas;
 - the use of paved access aprons;
 - the use of posted speed limit signs;
 - the use of wheel washing areas prior to large trucks leaving the project site; and,

- the methods that will be used to clean tracked-out mud and dirt from the project site onto public roads.

Verification: Sixty (60) days prior to the start of construction, the project owner shall provide the CPM with a copy of the Construction Fugitive Dust Mitigation Plan for approval.

AQ-C2 The project owner shall require as a condition of its construction contracts that all contractors/subcontractors ensure that all heavy earthmoving equipment, that includes, but is not limited to bulldozers, backhoes, compactors, loaders, motor graders and trenchers, and cranes, dump trucks and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer's specifications. The project owner shall further require as a condition of its construction contracts that this equipment shall employ high pressure fuel injection (common rail) system or engine timing retardation to control the emissions of oxides of nitrogen. The project owner shall further require as a condition of its construction contracts that all heavy construction equipment to the extent practical shall remain running at idle for no more than 5 minutes.

Verification: The project owner shall submit to the CPM, via the Monthly Compliance Report, documentation, which demonstrates that the contractor's/subcontractor's heavy earthmoving equipment is properly maintained and the engines are tuned to the manufacturer's specifications. The project owner shall maintain construction contracts on the site for six months following the start of commercial operation.

AQ-C3 The project owner shall install oxidizing soot filters on all suitable construction equipment used either on the power plant construction site or on associated linear construction sites. Where the oxidizing soot filter is determined to be unsuitable, the owner shall install and use an oxidation catalyst. Suitability is to be determined by an independent California Licensed Mechanical Engineer who will stamp and submit for approval an initial and all subsequent Suitability Reports as necessary containing at a minimum the following:

Initial Suitability Report:

- a list of all fuel burning, construction related equipment used,
- a determination of the suitability of each piece of equipment to firstly work appropriately with an oxidizing soot filter,
- a determination of the suitability of each piece of equipment to secondly work appropriately with an oxidation catalyst,

- if a piece of equipment is determined to be suitable for an oxidizing soot filter, a statement by the independent California Licensed Mechanical Engineer that the oxidizing soot filter has been installed and is functioning properly,
- if a piece of equipment is determined to be unsuitable for an oxidizing soot filter, an explanation by the independent California Licensed Mechanical Engineer as to the cause of this determination,
- if a piece of equipment is determined to be unsuitable for an oxidizing soot filter, but suitable for an oxidation catalyst, a statement by the independent California Licensed Mechanical Engineer that the oxidation filter has been installed and is functioning properly and
- if a piece of equipment is determined to be unsuitable for both an oxidizing soot filter and an oxidizing catalyst, an explanation by the independent California Licensed Mechanical Engineer as to the cause of this determination.

Subsequent Suitability Reports

- If a piece of construction equipment is subsequently determined to be unsuitable for an oxidizing soot filter or oxidizing catalyst after such installation has occurred, the filter or catalyst may be removed immediately. However, notification must be sent to the CPM for approval containing an explanation for the change in suitability within 10 days. Changes in suitability are restricted to three explanations that must be identified in any subsequent suitability report. Changes in suitability may not be based on the use of high-pressure fuel injectors, timing retardation and/or reduced idle time.
- The filter or catalyst is reducing normal availability of the construction equipment due to increased downtime, and/or power output due to increased backpressure by 20% or more.
- The filter or catalyst is causing or reasonably expected to cause significant damage to the construction equipment engine.
- The filter or catalyst is causing or reasonably expected to cause a significant risk to nearby workers or the public.

Verification: The project owner will submit to the CPM for approval, the initial suitability report stamped by an independent California Licensed Mechanical Engineer, 60 days prior to breaking ground on the project site. The project owner will submit to the CPM for approval, subsequent suitability reports as required, stamped by an independent California Licensed Mechanical Engineer no later than 10 working day following a change in the suitability status of any construction equipment.

SJVUAPCD Permit No. S-3492-1-0: 165 MW NOMINALLY RATED COGENERATION SYSTEM #1 INCLUDING GENERAL ELECTRIC FRAME 7FA, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR W/ DRY LOW-NO_xCOMBUSTORS, UNFIRED

SJVUAPCD Permit No. S-3492-2-0: 165 MW NOMINALLY RATED COGENERATION SYSTEM #2 INCLUDING GENERAL ELECTRIC FRAME 7FA, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR W/ DRY LOW-NO_xCOMBUSTORS, UNFIRED

AQ-1 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

Verification: The project owner shall make the site available for inspection by representatives of the District, California Air Resources Board (CARB) and the Commission.

AQ-5 Combustion turbine generator (CTG) and electric generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201]

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

AQ-6 The CTG shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201]

Verification: The information above shall be included in the quarterly reports of Condition **AQ-31**.

AQ-7 CTG exhaust shall be equipped with continuously recording emissions monitor(s) dedicated to this unit for NO_x, CO, and O₂. Continuous emissions monitor(s) shall meet the requirements of 40 CFR part 60, Appendices B and F, and 40 CFR part 75, and shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns, provided the CEM(s) pass the relative accuracy requirement specified in condition **AQ-23**. If relative accuracy of CEM(s) cannot be demonstrated during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits in conditions **AQ-14, -15, -16, and -17**. [District Rule 2201]

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

AQ-8 Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081]

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

AQ-9 CTG shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry standard cubic feet of natural gas. [District Rule 2201]

Verification: Please refer to Condition **AQ-30**.

AQ-10 Startup is defined as the period beginning with turbine initial firing until the unit meets the lbs/hr and ppmv emission limits in Condition **AQ-15**. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending with cessation of firing of the gas turbine engine. Startup and shutdown durations shall not exceed one hour per occurrence. [District Rule 2201 and 4001]

Verification: Please refer to Condition **AQ-31**.

AQ-14 During startup or shutdown of any combustion turbine generator(s), combined emissions from the two CTGs (S-3492-1 and '-2) shall not exceed the following: NO_x– 145.24 lbs and CO – 364.86 lbs in any one hour. [CEQA]

Verification: The project owner shall provide records of the emissions as part of the quarterly reports of Condition **AQ-31**.

AQ-15 Emission rates from each gas turbine engine heat recovery steam generator exhaust except during startup and/or shutdown, shall not exceed the following:

PM10: 9.0 lbs/hr

SO_x (as SO₂): 3.85 lbs/hr

NO_x (as NO₂): 60.93 lbs/hr and 9.0 ppmvd @ 15% O₂ averaged over 1-hour

VOC: 2.81 lbs/hr and 1.3 ppmvd @ 15% O₂ averaged over 3-hours

CO: 29.14 lbs/hr and 7.5 ppmvd @ 15% O₂ averaged over 3-hours

[District Rules 2201, 4001, and 4703]

Each one-hour period in a one-hour rolling average will commence on the hour.

Each one-hour period in a 3-hour rolling average will commence on the hour. The

3-hour average will be compiled from the three most recent 1-hour periods. [District Rule 2201]

Verification: The project owner shall provide records of the emissions as part of the quarterly reports of Condition **AQ-31**.

AQ-16 Emission rates from each CTG heat recovery steam generator exhaust, on days when a startup or shutdown occurs, shall not exceed the following:

PM10: 158.0 lbs/day
 So_x (as SO₂): 64.17 lbs/day
 NO_x (as NO₂): 1038.88 lbs/day
 VOC: 78.96 lbs/day
 CO: 792.24 lbs/day
 [District Rule 2201]

Daily emissions will be compiled for a 24-hour period starting and ending at twelve-midnight. [District Rule 2201]

Verification: The project owner shall provide records of the emissions as part of the quarterly reports of Condition **AQ-31**.

AQ-17 Annual emissions from the CTG calculated on a twelve consecutive month rolling basis shall not exceed the following:

PM10: 17,146 lbs/year
 SO_x (as SO₂): 6,611 lbs/year
 NO_x (as NO₂): 107,530 lbs/year
 VOC: 8,359 lbs/year
 CO: 83,361 lbs/year
 [District Rule 2201]

Each calendar month in a twelve consecutive month rolling emissions total will commence at the beginning of the first day of the month. The twelve consecutive month rolling emissions total to determine compliance with annual emission limits will be compiled from the twelve most recent calendar months. [District Rule 2201]

Verification: The project owner shall provide records of the emissions as part of the quarterly reports of Condition **AQ-31**.

AQ-18 Upon implementation of S-3492-1-0 and '2-0, emission offsets certificates shall be provided for all calendar quarters in the following amounts, at the offset ratio specified in Rule 2201 (6/15/95 version) in the following table at least 30 days prior to the commencement of construction.

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
PM10	1982	3792	9390	1982
SO _x (as SO ₂)	804	1440	3564	804

NO _x (as NO ₂)	13018	23447	58047	13018
VOC	1004	1822	4529	1004

[District Rule 2201]

Verification: The project owner shall provide copies of all the necessary ERC certificates to the CPM no later than 30 days prior to the commencement of construction.

AQ-19 At least 30 days prior to commencement of construction, the project owner shall provide the District, with written documentation that all necessary offsets have been acquired or that binding contracts to secure such offsets have been entered into. [District Rule 2201]

Verification: The project owner shall provide copies of all the necessary ERC certificates to the CPM no later than 30 days prior to the commencement of construction.

AQ-20 Source testing to demonstrate compliance with the NO_x, CO, and VOC short-term emission limits (lbs/hr and ppmv @ 15% O₂) shall be conducted within 60 days of initial operation of CTG and annually thereafter by District witnessed sampling of exhaust gas by qualified independent source testers. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081]

Verification: Please refer to the information requirements of Condition **AQ-25**.

AQ-22 Source testing to demonstrate compliance with PM10 short-term emission limit (lbs/hr) shall be conducted within 60 days of initial operation, again within 9 months of initial operation during the winter (December, January, or February), and annually thereafter by District witnessed sampling of exhaust gas by qualified independent source testers. [District Rule 1081]

Verification: Please refer to the information requirements of Condition **AQ-25**.

AQ-23 Source testing of startup NO_x, CO, VOC, and PM10 mass emission rates shall be conducted for one of the gas turbine engines (S-3492-1-0 or '-2-0) upon initial operation and at least once every seven years thereafter by District witnessed in-situ sampling of exhaust gases by a qualified independent source test firm. CEM relative accuracy shall be determined during startup source testing in accordance with 40 CFR 60, Appendix B. [District Rule 1081]

Verification: Please refer to the information requirements of Condition **AQ-25**.

AQ-24 Compliance with natural gas sulfur content limit shall be demonstrated within 60 days of operation of each gas turbine engine and periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 1081, 2540, and 4001]

Verification: Please refer to the information requirements of Condition **AQ-30**.

AQ-25 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. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081]

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

AQ-26 The source test plans for the initial and seven-year source test shall include a method for measuring the CO/VOC surrogate relationship that will be used to demonstrate compliance with VOC lbs/hr, lbs/day, and lbs/twelve month rolling average emission limits. [District Rule 2201]

Verification: 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-27 The following test methods shall be used:

PM10: EPA method 5 (front half and back half),
NO_x: EPA method 7E or 20
CO: EPA method 10 or 10B
O₂: EPA method 3, 3A, or 20
VOC: EPA method 18 or 25
Fuel gas sulfur content: ASTM D3246.

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, 4001, and 4703]

Verification: As part of the test plan to be submitted under Condition **AQ-25**, the project owner shall identify the test methods to be used in the annual compliance source testing.

AQ-28 The project owner shall notify the District of a), the date of initiation of construction no later than 30 days after such date, b) the date of anticipated startup not more than 60 days nor less than 30 days prior to such date, and c), the date of actual startup within 15 days after such date. [District Rule 4001]

Verification: The project owner shall notify the CPM and the District of the date of initiation of construction no later than 30 days after such date. The project owner shall notify the CPM and the District of the date of anticipated startup not more than 60 days nor less than 30 days prior to such date, and the date of actual startup within 15 days after such date.

AQ-29 The project owner shall maintain hourly records of NO_x, CO emission concentrations (ppmv @ 15% O₂), and hourly, daily, and annual records of NO_x and CO emissions. Compliance with the hourly, daily, and annual VOC emission limits shall be demonstrated by the CO CEM data and the CO/VOC relationship determined by annual CO and VOC source tests. [District Rule 2201]

Verification: The project owner shall provide records of the emissions as part of the quarterly reports of Condition **AQ-31**.

AQ-30 The project owner shall maintain records of SO_x lbs/hr, lbs/day, and lbs/twelve month rolling average emissions. SO_x emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201]

Verification: The project owner shall provide records of the information described above as part of the quarterly reports of Condition **AQ-31**.

AQ-31 The project owner shall maintain the following records for each CTG: occurrence, duration, and type of any startup, shutdown, or malfunction; emission measurements; total daily and annual hours of operation; and hourly quantity of fuel used. [District Rules 2201 and 4703]

Verification: The project owner shall compile required data and copies of the daily logs and submit the information to the CPM in quarterly reports submitted no later than 60 days after the end of each calendar quarter.

AQ-32 The project owner shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period of non-operation of any continuous emissions monitor. [District Rules 2201 and 4703]

Verification: The project owner shall compile the required data in the formats discussed above and submit the results to the CPM as part of the quarterly reports of Condition **AQ-31**.

AQ-33 All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201]

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

AQ-34 Results of continuous emissions monitoring shall be reduced according to the procedure 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 compile the required data in the formats discussed above and submit the results to the CPM as part of the quarterly reports of Condition **AQ-31**.

AQ-35 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]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM as part of the quarterly reports of Condition **AQ-31**.

AQ-36 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]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM as part of the quarterly reports of Condition **AQ-31**.

AQ-37 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]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM as part of the quarterly reports of Condition **AQ-31**.

AQ-38 Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is 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 the continuous emission monitor audit results with the quarterly reports required of Condition **AQ-40**.

AQ-39 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 the continuous emission monitor results with the quarterly reports of Condition **AQ-40**.

AQ-40 The project owners shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions; nature and cause of excess (averaging period used for data reporting shall correspond to the averaging period for each respective emission standard); corrective actions taken and preventive measures adopted; applicable time and date of each period during a CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]

Verification: The project owner shall compile the required data and submit the quarterly reports to the CPM and the APCO within 30 days of the end of the quarter.

AQ-41 This approval and permit shall expire 1,095 days from the date of initial operation. The equipment authorized by this approval and permit shall cease operation no later than 1,095 days after the date of initial operation. The equipment shall not be operated beyond 1,095 days after initial startup unless the permittee has filed an application for Authority to construct and has received prior authorization from the District and California Energy Commission.

Verification: The project owner shall submit an Applicant for Certification or an amendment to the existing Conditions of Certification within 1,095 days of initial operation or cease all operation at the Sunrise Simple Cycle Power Plant.

REFERENCES

- ARB 1998 - Air Resource Board. "Proposed Amendments to the Designation Criteria and Amendments to the Area Designations for State Ambient Air Quality Standards". August, 1998.
- ARB, 1992-1997. California Air Quality Data, Annual and Quarterly Summaries. Aerometric Division. Sacramento.
- ARB 1996 - Air Resources Board. "Second Triennial Review of the Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California". October, 1996.
- ARB 1992. California Air Resources Board, "Sources and Control of Nitrogen Emissions". Sacramento, August. p. 38
- CEC (California Energy Commission) 1998f. Confidential Designation, Dated December 21, 1998, for 5 Subject Areas for the Sunrise Cogeneration and Power Project. Submitted to Jeff Harris, Ellison & Schneider on December 30, 1998.
- Chow, et al 1993. Judith C. Chow, John G. Watson and Douglas H. Lowenthal. "PM10 and PM2.5 Compositions in California's San Joaquin Valley" Aerosol Science and Technology, the Journal of the American Association for Aerosol Research.
- CURE (California Unions for Reliable Energy) 1999g. Comments on the California Energy Commission Preliminary Staff Assessment. Submitted to the California Energy Commission on September 2, 1999.
- CURE (California Unions for Reliable Energy) 1999h. CURE's appeal of San Joaquin Valley Unified Air Pollution Control District's final Determination of Compliance. Submitted to the California Energy Commission on December 2, 1999.
- EPRI 1990. "Combustion Turbine NO_xControl News." Electric Power Research Institute. RP 2936, Summer 1990, Issue 3.
- SCPP (Sunrise Cogeneration and Power Project) 1999j. Transmission Alternatives, Supplement One. Submitted to California Energy Commission on May 5, 1999.
- SCPP(Sunrise Cogeneration and Power Project) 1998a. Application for Certification, Sunrise Cogeneration and Power Company (98-AFC-4). Submitted to the California Energy Commission, December 21, 1998.

SCPP (Sunrise Cogeneration and Power Project) 1999f. Data Responses, Set 1A. Submitted to the California Energy Commission on April 15, 1999.

SCPP (Sunrise Cogeneration & Power Project) 1999i. CURE Data Responses, 1A. Submitted to Adams, Broadwell & Joseph (CURE) on May 5, 1999.

Sunrise (Sunrise Power Project) 2000a. Amendments to AFC and PSD Permit Application. Submitted to the California Energy Commission on September 12, 2000.

SJVUAPCD 1999. San Joaquin Valley Unified Air Pollution Control District. Preliminary Determination of Compliance, Project # 980654. May 26, 1999.

SJVUAPCD (San Joaquin Valley Air Pollution Control District) 1999g. Preliminary Determination of Compliance for the Sunrise Cogeneration and Power Project (98-AFC-4). Submitted to the California Energy Commission on November 19, 1999.

SJVUAPCD (San Joaquin Valley Air Pollution Control District) 1999h. Final Determination of Compliance and response to comments on the preliminary Determination of Compliance for the Sunrise Cogeneration and Power Project (98-AFC-4). Submitted to the California Energy Commission on November 19, 1999.

USEPA (United States Environmental Protection Agency/G. Robin) 1999b. Ambient Air Quality Impact Report (NSR 4-4-4, SJ 99-01). Submitted to the California Energy Commission on November 4, 1999.

PUBLIC HEALTH

Supplemental Testimony of Obed Odoemelum, Ph.D.

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

There are no changes needed to the previous Public Health testimony, including conclusions, recommendation and proposed conditions of certification.

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

WORKER SAFETY AND FIRE PROTECTION

Supplemental Testimony of Chris Tooker, Ph.D.

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

Because the amended project does not require the use of Selective Catalytic Reduction to control NOx emissions, anhydrous ammonia will not be used or stored at the site. Therefore, potential risks to workers posed by the use of anhydrous ammonia have been eliminated. Also, since the cogeneration and related steam supply aspects of the project have been eliminated, discussion pertaining to worker safety in the oilfields in the previous Final Staff Assessment no longer applies. Notwithstanding these changes, the conclusions and recommended conditions of certification included in my original testimony on Worker Safety and Fire Protection still apply to the amended project.

REFERENCES

Sunrise (Sunrise Power Company). 2000 a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

TRANSMISSION LINE SAFETY AND NUISANCE

Supplemental Testimony of Obed Odoemelam, Ph.D.

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATIONS

Because the proposed transmission facilities of the amended project are the same as those of the original project, there are no changes needed to the previous Transmission Line Safety and Nuisance testimony, including conclusions, recommendation and proposed conditions of certification.

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

HAZARDOUS MATERIALS HANDLING

Supplemental Testimony of Rick Tyler

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

The change to a simple cycle peaking facility eliminates all potential for impacts posed by the handling of anhydrous ammonia at the facility. Therefore, Condition of Certification **HAZ-2** is no longer applicable. In addition, staff agrees with the applicant's proposed Findings and Conclusions section in Appendix J of its Amended Application for Certification for the Sunrise Power Project (98-AFC-4).

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

WASTE MANAGEMENT

Supplemental Testimony of Mike Ringer

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

No changes are needed to the previous Waste Management testimony's proposed conditions of certification. Staff agrees with the applicant's proposed modifications to the conditions of certification that are presented in its amended application. (Sunrise 2000a.)

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

LAND USE

Supplemental Testimony of Amanda Stennick

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

There are no changes needed to the previous Land Use testimony, including conclusions, recommendation and proposed conditions of certification. Staff has no comment on the applicant's proposed changes to Condition of Certification **LAND USE-2** (Sunrise 2000a, Appendix J) because the condition was provided by the Committee, not by staff.

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

TRAFFIC AND TRANSPORTATION

Supplemental Testimony of David Flores

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

Because the amended project does not feature Selective Catalytic Reduction, its use of anhydrous ammonia has been eliminated. Therefore, transportation risks posed by the use of anhydrous ammonia have been eliminated. Staff agrees with the applicant's proposed modifications to the conditions of certification that are in Appendix J of the amended application. (Sunrise 2000a.)

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

NOISE

Supplemental Testimony of Kisabuli

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

The nearest residences are located about 1.3 miles from the project site. Heavy construction (excavation, grading etc) is likely to cause a nuisance to these residences, if construction is not limited to the hours specified in the condition. Therefore, staff does not agree with the applicant's proposed modifications to **NOISE-6** Condition of Compliance as presented in Appendix J of its amended application (Sunrise 2000a).

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

VISUAL RESOURCES

Supplemental Testimony of Gary Walker

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

Because the amended project does not include Heat Recovery Steam Generators and no visible project features would be added, impacts to visual resources would be less than for the original project. No changes are needed to the previous Visual Resources testimony's proposed conditions of certification. Staff does not agree with the applicant's proposed modifications to the conditions of certification that are presented in its amended application because the timeframes proposed are insufficient for compliance reviews. (Sunrise 2000a.)

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

CULTURAL RESOURCES

Supplementary Testimony of Gary Reinoehl and Dorothy Torres

INTRODUCTION

On September 12, 2000, Sunrise Power Company filed an Amended Application for Certification. The name of the undertaking is now Sunrise Power Project and some changes to the project necessitate changes in cultural resources testimony.

PROJECT CHANGES

WATER LINES

Two water lines approximately 300 feet south of the original project boundary will be relocated. The routes of the proposed pipelines are within area that was previously surveyed for cultural resources. Information regarding previous surveys for cultural resources was included in the original Application For Certification (AFC) and addressed in the previous Final Staff Assessment (FSA)(Sunrise 2000a, p. 2-1).

NATURAL GAS LINE

The natural gas line will be approximately 2.5 miles long and twenty inches wide (Sunrise 2000a, p. 2-1).

CULTURAL RESOURCES INVENTORY

A records search was conducted on September 5, 2000, by the Southern San Joaquin Valley Information Center of the California Historical Resources Inventory System (CHRIS) at California State University, Bakersfield.

A pedestrian survey was conducted on September 5 and 6, 2000, and a fieldwork authorization was obtained from the Bakersfield Bureau of Land Management (BLM) Office for portions of the survey corridor crossing BLM land. The survey team walked ten to twenty meter transects in areas with good ground visibility. Transects up to twenty-five meters were used in heavily disturbed areas. The team expressly examined clear areas and areas exposed by animal burrows or grading. The survey route extended to 500 feet on each side of the proposed centerline of the natural gas route.

The survey confirmed the location of previously recorded old sites. A number of new sites and/or features were identified. Many of the new resources are abandoned oil wells or oil well pads. These historic features were recorded using DPR 523 A forms, as is consistent with current BLM direction. Features appearing more extensive were recorded with full DPR 523 forms (Sunrise 2000a, p. 8.3-5).

The location of four previously recorded old archaeological sites within the project area was confirmed. Neither the four previously recorded sites nor the twenty-six

newly recorded sites have been evaluated for significance. However, all cultural resources will be treated as potentially significant until formally evaluated.

The project archaeologist confirmed with a project engineer that the 75 foot ROW would be sufficient to avoid all the identified cultural resources, and the presence of a cultural resources monitor on the gas line should be sufficient to ensure avoidance of the resources.

A total of thirty sites or features were reconfirmed or newly identified within the survey corridor. "As an element of project design, all documented cultural resources within the study area will be avoided..." (Sunrise 2000a, p. 8.3-6). All these sites will be avoided during site preparation and construction.

INFORMATION ADDRESSED IN THE FINAL STAFF ASSESSMENT THAT IS NOT APPLICABLE TO THE AMENDMENT

Information and discussions regarding new steam lines, steam injection wells, new oil production wells, and new well field access roads should be disregarded and any references to cogeneration should be deleted.

Any references to a blueprint adopted by the Sunrise Project Committee or a gas pipeline in the TCI Main Utility Corridor or California Department of Conservation, Division of Oil and Gas should be disregarded.

CONDITIONS OF CERTIFICATION

In Appendix J of its amendment to the project, the applicant proposed changes to the Cultural Resources Conditions of Certification that were in the May 12, 2000, Presiding Member's Proposed Decision (PMPD) (Sunrise 2000a). Following is a general comment, and excerpts from Appendix J with the applicant's proposals and staff's responses. .

GENERAL COMMENT

The word "cogeneration" should be deleted wherever it appears in the text of the PMPD.

APPLICANT'S PROPOSALS AND STAFF'S RESPONSES

CUL-1

CUL 1 requires that the applicant obtain the services of a designated cultural resource specialist whose qualifications are approved by the Compliance Program Manager (CPM) before earth disturbing activities are initiated. The verification provides time frames that the applicant should meet to ensure that project activity proceeds in a timely manner.

APPLICANT'S SUGGESTED CHANGE:

Verification: ~~At least ninety (90)~~ Thirty (30) days prior to the start of project construction, or a lesser time as mutually agreed upon by the project owner and the CPM,

STAFF'S RESPONSE:

The applicant suggests that the language "At least ninety" should be deleted and "Thirty" should replace "ninety." After a designated cultural resource specialist (DCRS) is hired, even if the selection is approved by Energy Commission staff almost immediately, the specialist will need time to carry out a series of projected related tasks before ground disturbance is initiated.

The applicant is strongly urged to submit the name of a proposed cultural resource specialist for approval well before the permit is obtained.

The language "or a lesser time as mutually agreed upon by the project owner and the CPM," as requested by the applicant, is unnecessary because the time frames in the verification may be changed if mutually agreed upon by the project owner and the CPM, without the need for an amendment.

CUL-1 continued

The following change is suggested to the second paragraph of the verification. This portion of the verification addresses the confirmation in writing provided by project owner to the CPM stating that the cultural resource is available and prepared to implement the conditions of certification.

APPLICANTS SUGGESTED CHANGE:

~~At least Ten (10) days but no more than thirty (30) days~~ prior to the start of construction, or a lesser time as mutually agreed upon by the project owner and the CPM,

STAFF'S RESPONSE:

The applicant suggests that the paragraph that begins, "At least ten (10) days but no more than thirty" shall read "Ten days prior." The language "At least ten days prior should remain and the language "but no more than thirty (30)" should be deleted.

The applicant requests that the language "or a lesser time as mutually agreed upon by the project owner and the CPM," be added. This change is not necessary because the time frames in the verification may be changed if mutually agreed upon by the project owner and the CPM, without the need for an amendment.

CUL-2

This condition addresses the cultural resource specialist's need for maps and drawings of the current project footprint and features. The drawings and maps are used to identify areas where cultural resources may need to identify sensitive areas

or establish monitoring. The cultural resource specialist provides this information to the CPM in the CRMMP and Training Plan when the plans are submitted for review at a later date.

APPLICANTS SUGGESTED CHANGE:

~~Verification Protocol:~~ (This is a minor edit, not necessary after new condition is applied).

Verification: ~~At least seventy five (75)~~ thirty (30) days prior to the start of construction on the project, or a lesser time as mutually agreed upon by the project owner and the CPM.

STAFF'S RESPONSE:

The applicant proposes several changes to this condition. Staff proposes deleting the entire **CUL-2** and adding a new **CUL-2** instead. The **new** language is provided below.

The purpose of changing the entire condition is to change the type of drawing and maps required 75 days prior to ground disturbance. The previous condition specified that final drawings should be provided to the cultural resource specialist 75 days prior to the start of ground disturbance. The new **CUL-2** does not specify final drawings, but requires whatever maps and drawings are current at that time. The condition also requires that as the project changes and new maps and drawings become available, they shall be provided to the cultural resource specialist and the CPM.

CUL-2 Prior to the start of project-related ground disturbance, the project owner shall provide the Designated Cultural Resource Specialist (DCRS) and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps provided will include the USGS 7.5 minute topographic quadrangle map and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting individual artifacts. If the DCRS requests enlargements or strip maps for linear facility routes, the project owner shall provide them. In addition, the project owner shall provide a set of these maps to the CPM at the same time that they are provided to the specialist. If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the cultural resources specialist and the CPM. Maps shall show the location of all areas where surface disturbance may be associated with project-related access roads, and any other project components.

Verification: At least 75 days prior to the start of project-related ground disturbance on the project, the project owner shall provide the DCRS and the CPM with the maps and drawings. Copies of maps or drawings reflecting changes to the footprint of the power plant and/or linear facilities shall be submitted to the cultural resources specialist and the CPM within five days of the changes.

CUL-3

Condition **CUL-3** requires that the project owner submit a Cultural Resource Monitoring and Mitigation Plan (CRMMP) authored by the designated cultural resource specialist.

APPLICANTS SUGGESTED CHANGE:

Verification: ~~At least sixty (60)~~ Thirty (30) days prior to the start of construction on the project, or a lesser time as mutually agreed upon by the project owner and the CPM,

STAFF'S RESPONSE:

The applicant asks that the language "At least sixty (60)" be changed to "Thirty (30)." The language "At least sixty (60)" should remain.

Plans are typically at least 20 pages long and require a detailed review. If changes are necessary, the Cultural Resource Specialist will need time to make the changes and resubmit the plan for approval before the project breaks ground.

The language "or a lesser time as mutually agreed upon by the project owner and the CPM," as requested by the applicant, is unnecessary because the time frames in the verification may be changed if mutually agreed upon by the project owner and the CPM, without the need for an amendment.

After the Cultural Resource Specialist is approved, that person can prepare and submit a cultural resources monitoring and mitigation plan (CRMMP) to the CPM for approval. There is no need to wait until the project is approved to submit the CRMMP to CPM for approval.

CUL-4

APPLICANTS SUGGESTED CHANGE:

Verification: ~~At least sixty (60)~~ Thirty (30) days prior to the start of construction on the project, or a lesser time as mutually agreed upon by the project owner and the CPM,

STAFF'S RESPONSE:

The applicant asks that the language "At least sixty (60)" be replaced by "Thirty (30)." Staff does not support this change. This condition requires that a training plan be submitted to the CPM for review and approval. Thirty days is not long enough for the applicant to make any necessary changes to the training plan and to resubmit it for approval, before initiating ground disturbance on the project.

The applicant need not wait until the project is permitted before submitting a training plan that has been prepared by the designated cultural resource specialist.

The language “or a lesser time as mutually agreed upon by the project owner and the CPM” as requested by the applicant, is unnecessary because the time frames in the verification may be changed if mutually agreed upon by the project owner and the CPM, without the need for an amendment.

CUL-6

Condition **CUL-6** addresses the of subject cultural resource monitoring.

APPLICANTS SUGGESTED CHANGE:

Verification: Thirty (30) days prior to the start of construction, or a lesser time as mutually agreed upon by the project owner and the CPM,

STAFF’S RESPONSE:

The language “or a lesser time as mutually agreed upon by the project owner and the CPM,” as requested by the applicant, is unnecessary because the time frames in the verification may be changed if mutually agreed upon by the project owner and the CPM, without the need for an amendment.

CUL-18

APPLICANTS SUGGESTED CHANGE:

The applicant has suggested that condition **CUL-18** should be deleted because the project no longer provides steam the oilfields.

STAFF’S RESPONSE:

Staff agrees that condition **CUL-18** is no longer applicable to the amended project and should be deleted.

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

PMPD (Presiding Member’s Proposed Decision) 2000a. Sunrise Cogeneration and Power Project. Issued by the Committee on May 12, 2000.

SOCIOECONOMICS

Supplemental Testimony of Joseph Diamond, Ph.D.

INTRODUCTION

The economic logic that guides socioeconomic impact analysis for the Sunrise Power Plant (Sunrise) Amendment is that Kern County has a sufficient labor force with fairly high levels of unemployment to build and operate Sunrise and other approved or proposed power plants in the county. Non-local labor, which has the potential for socioeconomic impacts, remains at low levels and largely unchanged under the Sunrise Power Project (98-AFC-4) amendment. For the amendment, which shows small changes in non-local labor (and their families), there is sufficient community infrastructure capacity to accommodate the construction labor force changes. The finding of potential cumulative educational and fire impacts (see the **Worker Safety and Fire Protection** section in the Sunrise Cogeneration and Power Project Final Staff Assessment, Part II, issued October 14, 1999) remains unchanged.

ANALYSIS

From a socioeconomic perspective, an important change in Sunrise is that a 9-month versus a 15-month schedule would increase the peak construction labor force to 275 from 255 with local workers at 242 rather than 225. Non-local workers increase to only 33 from 30. The average construction labor force decreases to 150 from 160 with 22 non-local workers instead of 23 non-local workers from that estimated in the original Sunrise AFC. The Sunrise Amendment indicates a 12 percent non-local labor force for peak construction and 14 percent for the average number of construction workers. These percentages are more or less the same numbers reported in the original Sunrise AFC. While the potential for socioeconomic impacts goes up a very small amount at the peak, on average, the shorter period of construction time (saving 6 months) will result in marginally less impact.

Changes in the geographic distribution of non-local workers are minor and do not result in any new potential significant socioeconomic impacts and therefore require no new conditions of certification. For example, the number of non-local construction workers and school aged children, on average, falls from 23 to 22 resulting in one less non-local construction worker and one less school child in Bakersfield. Thus, the finding of a potential cumulative educational impact is unaffected by the Sunrise Amendment. However, no mitigation is proposed due to California Government Code, Section 65996-65997 that mandates public agencies may not impose fees, charges or other financial requirements to offset the cost for school facilities. Also, the original Sunrise AFC reported a school impact fee of \$1,040. The tax impact would be minimal for any change to the square footage of covered and enclosed power plant space.

Estimated average secondary employment and fiscal impacts are slightly lower with plant costs reduced from \$175-\$195 million to \$150-\$170 million. For example, the Applicant estimates first year property taxes on the power plant are expected to be between \$1.5-\$1.7 million as compared to \$1.75-\$1.95 million in the original Sunrise AFC.

SUMMARY

The socioeconomic impacts for the Sunrise Amendment, on average, appear to be slightly less than the impacts from the original cogeneration proposal due to the shorter construction period. Peak impacts are only marginally higher. Project gross economic benefits, secondary employment and fiscal impacts, are slightly less due to the lower project cost and a smaller average construction workforce.

REFERENCE

Sunrise (Sunrise Power Project) 2000a. Amendments to AFC and PSD Permit Application. Submitted to the California Energy Commission on September 12, 2000.

BIOLOGICAL RESOURCES

Supplemental Testimony by Rick York

INTRODUCTION

The proposed Sunrise Cogeneration and Power Project has been modified from a cogeneration power plant to a simple cycle peaking facility with an operating life of 3 years. See the Project Description for a more detailed discussion of revised project. The revised project is now called the Sunrise Power Project (URS 2000a).

The proposed modifications to the project description that could affect biological resources include a new 2.5-mile natural gas pipeline and relocation of two West Kern Water District main water lines. Both of these project modifications change the project's acreage impacts to sensitive species habitat. In addition, because the Sunrise Power Project, unlike the Sunrise Cogeneration and Power Project, will not generate and provide steam to the adjacent oilfield to enhance oil recovery, staff does not expect any indirect impacts to sensitive species or their habitat.

IMPACTS

PROJECT SPECIFIC DIRECT AND INDIRECT IMPACTS

DIRECT IMPACTS ACREAGES

Direct impacts to sensitive species habitat will increase with the Sunrise Power Project. The following table, provided by Sunrise Power Company on October 6, 2000, provides an updated accounting of the revised project direct impacts.

DIRECT IMPACTS ACREAGES

(Source: URS 2000b)

Facility	<u>Private lands (acres)</u>		<u>Conserved land (acres)</u>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Power plant/laydown area	12.4	13.8	—	—
Sunrise switchyard	3.2	—	—	—
Wastewater lines	1.4	—	—	—
Freshwater pipelines	—	3.8	—	—
Natural gas pipeline	—	22.7	—	—
Access road improvement	3.5	—	—	—
Worst case t-line Route B	7.0	14.2	1.3	3.5
IMPACT ACREAGE TOTALS	27.5	54.5	1.3	3.5

INDIRECT IMPACTS

The Sunrise Cogeneration and Power Project proposed to provide steam to the adjacent oilfield to enhance oil recovery, and staff and the applicant calculated that this part of the project would have resulted in the direct loss of approximately 176 acres of sensitive species habitat. The loss of 176 acres was identified as an indirect effect of the original Sunrise Cogeneration and Power Project since this development was related to the project, but would have occurred later in time. The revised project will not provide steam to the adjacent oilfield, so staff concludes that the Sunrise Power Project will not have any indirect effects on biological resources.

CALIFORNIA CONDOR

The California condor's historic range includes the project area, and condors have recently been seen in the region (Babcock 2000). Since the California condor, a state and federally listed Endangered species, is known to collide with transmission line ground wires (APLIC 1996), the U. S. Fish and Wildlife Service has recently indicated that they will require that bird flight diverters be installed on the new transmission line ground wires for the Pastoria Energy Facility project (99-AFC-7). Bird flight diverters make the ground wires more visible to California condor and other large birds of prey.

The Sunrise Power Project, like the Pastoria project, is located in Kern County within the historic condor range. To help lessen the likelihood of the California condor colliding with the Sunrise Power Project transmission line ground wire(s), staff recommends that bird flight diverters be installed to manufacturer's specifications the entire length of the new Sunrise Power Project transmission line. Bird flight diverters should also be installed on the recently completed La Paloma Power Plant transmission line ground wires if the Sunrise Power Project links its new transmission line with the recently completed La Paloma transmission line. For more information about California condor mitigation, see new Biological Resources Condition of Certification **BIO-12**.

MITIGATION

The revised project results in an overall decrease in sensitive species habitat acreage impacts, so mitigation changes are needed.

SUNRISE POWER PROJECT HABITAT COMPENSATION

Based upon the direct acreage impacts identified in the preceding table, the following table identifies the revised habitat compensation acreage amount required of the Sunrise Power Company. The compensation ratios are the same ratios utilized for the original Sunrise Cogeneration and Power Project.

**COMPENSATION
ACREAGES FOR DIRECT
IMPACTS**

<u>Impact Duration/Ownership</u>	<u>Impact Acreages</u>	<u>Compensation Ratios</u>	<u>Compensation Acreages</u>
Permanent/conserved	1.3	4:1	5.2
Permanent/non-conserved	27.5	3:1	82.5
Temporary/conserved	3.5	2.1:1	7.4
Temporary/non-conserved	54.5	1.1:1	60.0
TOTAL HABITAT COMPENSATION			155.1 acres

Staff continues to believe that the most appropriate location for the applicant to provide its habitat compensation is the Lokern Preserve that is managed by the Center for Natural Lands Management (CNLM), since the preserve is near the proposed project and contains habitat similar to that which will be impacted.

Staff recently contacted Brenda Pace, CNLM Administrative Director to determine the funding amounts (average acreage purchase cost, closing costs, endowment, etc.) CNLM currently requires per acre to assume responsibility for adding at least 155.1 acres of habitat to the CNLM Lokern Preserve. Ms. Pace indicated that CNLM would require Sunrise Power Company to provide no less than \$1,270 per acre to purchase at least 155.1 acres and add the acreage to the Lokern Preserve (Pace 2000). Therefore, to compensate for 155.1 acres, the project owner must provide no less than **\$196,977** (155.1 acres x \$1,270 per acres) to CNLM prior to any project-related ground disturbance activity to compensate for the project's anticipated habitat impacts. For more information about habitat compensation, refer to Biological Resources Condition of Certification **BIO-10**.

UNRESOLVED ISSUES, CONCLUSIONS, AND RECOMMENDATIONS

UNRESOLVED ISSUES

FEDERAL BIOLOGICAL OPINION

The proposed project has not received a federal Biological Opinion. The project can not begin construction until this document is received and its terms and conditions are included in the project's final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). Provisions of the BRMIMP will be implemented during both project construction and operation.

Susan Jones of the USFWS has indicated that her agency may provide the Biological Opinion by mid-November 2000 prior to the Energy Commission Decision scheduled for early December 2000 (Jones 2000).

STATE INCIDENTAL TAKE PERMIT

Per California Department of Fish and Game (CDFG) regulations, the CDFG Incidental Take Permit will not be provided to Sunrise Power Company until after the release of the Energy Commission Decision. The Energy Commission Decision represents the final California Environmental Quality Act (CEQA) document, and CDFG only provides the state Incidental Take Permit after reviewing the project's final CEQA document.

Donna Daniels of CDFG indicated that CDFG intends to provide written comments to the applicant regarding what CDFG expects the project's mitigation will include, and she expects these comments to be provided prior to the Energy Commission Decision (Daniels 2000). However, the final Incidental Take Permit approval process will not be started until CDFG receives a revised permit application that reflects the current project changes. As of this supplemental testimony, staff is uncertain whether the applicant has filed a revised Incidental Take Permit application.

Once CDFG receives an Incidental Take Permit application, the agency has 30 days to determine if the permit application, the applicant's environmental assessment, and the Commission Decision provides adequate information for CDFG to complete its analysis. When the information is deemed adequate, CDFG has up to 90 days to issue the permit. During that time, the draft permit language is reviewed and revised by CDFG Legal staff in Sacramento, and is then returned to the Regional Office for signature by the CDFG Regional Manager in Fresno. Once the applicant receives the signed permit the applicant must sign and return an accompanying document indicating that the applicant has received the permit and agrees to implement the required mitigation. Ultimately, the project applicant can not begin construction until all of these steps have been completed.

As with the federal Biological Opinion, the terms and conditions provided in the state Incidental Take Permit must be identified in the project's final BRMIMP and implemented during both project construction and operation.

CONCLUSIONS

Even though the federal Biological Opinion and state Incidental Take Permit have not been provided to the applicant, staff is confident that once these documents are provided that the applicant can construct and operate the Sunrise Power Project in accordance with all state and federal sensitive species protection laws, ordinances, regulations and standards.

RECOMMENDATIONS

To make certain that the Sunrise Power Project is in compliance with all state and federal sensitive species laws, regulations, ordinances, and standards during project construction and operation, staff recommends that the Energy Commission adopt the following Biological Resources Conditions of Certification.

CONDITIONS OF CERTIFICATION

All of staff's proposed Conditions of Certification are included since a new condition has been added, one condition has been deleted, and either minor or major changes have been made to nearly all of the other conditions.

For Conditions of Certification **BIO -1**, **BIO-2**, **BIO-6**, **BIO-8**, and **BIO-9** the applicant (URS 2000a) has suggested that the Verification language be changed to: "**Thirty (30) days** prior to start of any project related ground disturbance activities, **or a lesser time as mutually agreed upon by the project owner and the CPM**, the project owner", etc. (URS 2000a). In addition, the applicant has suggested that the Verification language for Condition of Certification **BIO-7** be changed to "**Five (5) days . . . or a lesser time as mutually agreed upon by the project owner and the CPM**, the project owner shall submit to the CPM a copy of the final CDFG Incidental Take Permit" (URS 2000a).

Staff does not support these suggested changes. The project owner has not received a final USFWS Biological Opinion (**BIO-8**) or a CDFG Incidental Take Permit (**BIO-7**), and site mobilization activities can not occur until these documents are provided and their terms and conditions included in the project's final mitigation implementation and monitoring plan (**BIO-9**). The project owner's most recent draft mitigation and monitoring plan, provided November 30, 1999, is not complete since it does not reflect the revised project description and does not include the terms and conditions to be provided in the federal Biological Opinion and state Incidental Take Permit. Staff has also not been provided with any Worker Environmental Awareness Program (**BIO-6**) materials for review, comment and approval. However, in January 2000, the project owner did submit, and staff approved, their Designated Biologist (**BIO 2, 3, & 4**).

Energy Commission staff, agency representatives, and the project owner need sufficient time to work together on the applicant's various Biological Resource submittals prior to their approval. If the power plant owner were allowed to submit their draft submittals 30 or fewer days of when they expect to begin site mobilization, then staff and agency staff may not have sufficient time to review and comment.

Therefore, staff recommends that: (1) the condition Verification timeframes remain unchanged; (2) the applicant work closely with staff and agencies to complete various tasks; and (3) the applicant immediately begins providing the required Biological Resource submittals for review and comment. If these steps are taken, agency review and approvals can be completed in a timely manner and project mobilization can begin as soon as possible.

Staff recommends that the Conditions of Certification contained in the May 10, 2000 Presiding Members Proposed Decision be modified as shown below.

The following condition had several minor changes made to it.

PROJECT OWNER MITIGATION

BIO-1 The project owner will implement the mitigation measures identified in Section 8.2, pages 8.2-20 to 8.2-22 of the applicant's Application for Certification (SCPP 1998a). The project owner's proposed mitigation measures will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), unless the mitigation measures conflict with mitigation required by the USFWS and CDFG in the federal Biological Opinion and state Incidental Take Permit, respectively. If there is a conflict between the draft BRMIMP and the federal Biological Opinion and/or the state Incidental Take Permit, then the federal and/or state conditions or mitigation measures will supercede those found in the draft BRMIMP.

1. Prior to the onset of ground-disturbance activities, project personnel shall be briefed on the occurrence and distribution of listed species in the project area, measures that are being implemented to protect these species during project actions, and the reporting requirements should incidental take occur.
2. Prior to commencement of construction activities, a qualified biologist(s) shall conduct pre-activity surveys of proposed work zones (for the power plant, natural gas pipelines, water pipeline, and transmission line) and the 500-foot buffer around each area. During pre-activity surveys, the status of previous surveys shall be reviewed. San Joaquin kit fox dens and kangaroo rat and blunt-nosed leopard lizard burrows shall be flagged for avoidance, as necessary, and additional habitat features, if any, shall be identified and flagged as necessary.
3. Biological monitors shall:
 - Accompany initial grading crews throughout the project area at all times that activities with the potential to affect listed species are being conducted;
 - Conduct pre-activity surveys as described above;
 - Aid project crews in satisfying avoidance criteria and implementing project mitigation as described in this assessment;
 - Aid in relocating access roads and laydown areas as necessary;
 - Inspect open trenches and footing holes for stranded wildlife and remove as necessary each morning;
 - Observe and note all pertinent information concerning project effects on listed species; and,
 - Assist project personnel in conducting the proposed project in such a manner as to minimize adverse impacts on listed species.

Pets will not be allowed on the project site during construction activities.

5. All food-related trash shall be disposed of in closed containers only and regularly removed from the project site.
6. All spills of hazardous materials within listed species habitat shall be cleaned up immediately.
7. No firearms will be allowed in the project area.
8. All construction activities conducted during the project shall be confined to daylight hours, unless within a site perimeter fence or unless circumstances warrant night work and approval is obtained from CDFG and USFWS.
9. All project-related vehicles shall observe a speed limit of 20 miles per hour or less on all routes that traverse listed species habitat, except on state and county highways and roads.
10. Project-related vehicles shall be confined to existing primary or secondary roads or to specifically delineated project areas (i.e., areas that have been surveyed and described in existing documentation). Otherwise, no off-road vehicle travel shall be permitted.
11. All open trenches and footing holes shall be covered each night or ramped in such a way as to allow wildlife that may enter to escape unharmed.
12. All known and potential San Joaquin kit fox dens, giant kangaroo rat burrows, San Joaquin antelope squirrel burrows, and burrows potentially inhabited by blunt-nosed leopard lizards shall be protected by implementing the following procedures. Such protection will help prevent incidental take of dens and burrows in excess of the take limits allowed by the resource agencies.
13. All avoidable San Joaquin kit fox dens, giant kangaroo rat, San Joaquin antelope squirrel and blunt-nosed leopard lizard burrows within the immediate vicinity of work areas shall be prominently staked and/or flagged as necessary to alert project personnel to their presence. All project-related flagging shall be collected and removed after completion of the project construction.
14. The project owner shall make every reasonable effort to prevent the collapse of dens and burrows by relocating temporary access roads and laydown areas to avoid dens and burrows or other means as determined to be appropriate for the sensitive wildlife and botanical resources.
15. Implement avoidance area criteria for sensitive wildlife and botanical resources provided by the USFWS and CDFG.
16. The project owner shall submit a post-activity compliance report that details the following information: dates that construction occurred; pertinent data concerning success in meeting project mitigation measures, if any; known project effects on sensitive species, if any (including specific number of dens and small mammal burrows damaged or destroyed); occurrences of incidental take of federally listed species, if

any; an assessment of the extent and severity of project impacts on all sensitive wildlife habitat; and other pertinent information.

17. The topsoil shall be stockpiled near all lands that will be temporarily disturbed by grading during construction activities. These sites shall be recontoured and preserved topsoil shall be spread to aid in the reclamation of these sites after construction is complete.
18. Project owner will provide funds to purchase agency-approved lands containing habitat similar to the habitat being disturbed during construction and operation of the proposed facilities.

Verification: At least 60 days prior to start of any project related site mobilization activities, the project owner shall provide the Energy Commission Compliance Project Manager (CPM) with the Biological Resources Mitigation Implementation and Monitoring Plan for the SCPP, and the CPM will determine the plans acceptability within 15 days of receipt of the plan. Implementation of the above measures will be included in the BRMIMP.

The following condition had only minor changes made to it.

DESIGNATED BIOLOGIST

BIO-2 Site mobilization activities shall not begin until an Energy Commission CPM approved Designated Biologist is available to be on site.

Protocol: The Designated Biologist must meet the following minimum qualifications:

1. A Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. One year of field experience with biological resources found in or near the project area; and
4. An ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resources tasks that must be addressed during project construction and operation.

If the CPM determines the proposed Designated Biologist to be unacceptable, the project owner shall submit another individual's name and qualifications for consideration. If the approved Designated Biologist needs to be replaced, the project owner shall obtain approval of a new Designated Biologist by submitting to the CPM the name, qualifications, address, and telephone number of the proposed replacement. No disturbance will be allowed in any designated sensitive areas until the CPM approves a new Designated Biologist and the new biologist is on site.

Verification: At least 90 days prior to the start of project-related site mobilization, the project owner shall submit to the CPM for approval, the name, qualifications, address and telephone number of the individual selected by the project owner as the Designated Biologist. If a Designated Biologist is replaced, the information on the proposed replacement, as specified in the condition, must be submitted in writing at least ten working days prior to the termination or release of the preceding Designated Biologist.

The following condition of certification remains unchanged.

BIO-3 The CPM approved Designated Biologist shall perform the following during project construction and operation:

1. Advise the project owner's Construction Manager on the implementation of the Biological Resource Conditions of Certification;
2. Supervise or conduct mitigation, monitoring and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as, wetlands and special status species; and
3. Notify the project owner and the CPM of any non-compliance with any Biological Resources Condition of Certification.

Verification: During project construction, the Designated Biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted along with the Monthly Compliance Reports to the CPM. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

The following condition of certification remains unchanged.

BIO-4 The project owner's Construction Manager shall act on the advice of the Designated Biologist to ensure conformance with the Biological Resources Conditions of Certification.

Protocol: The project owner's Construction Manager shall halt, if necessary, all construction activities in areas specifically identified by the Designated Biologist as sensitive to assure that potential significant biological resource impacts are avoided.

The Designated Biologist shall:

- Inform the project owner and the Construction Manager when to resume construction, and
- Advise the CPM if any corrective actions are needed or have been instituted.

Verification: Within two (2) working days of a Designated Biologist notification of non-compliance with a Biological Resources condition of certification or a halt of construction, the project owner shall notify the CPM by telephone of the circumstances and actions being taken to resolve the problem or the non-compliance with a condition. For any necessary corrective action taken by the project owner, a determination of success or failure will be made by the CPM within five (5) 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.

INDIRECT IMPACTS

BIO-5 *Since the project will not be providing steam to the adjacent oilfield, this condition of certification has been deleted.*

The following condition had only minor changes made to it.

WORKER ENVIRONMENTAL AWARENESS PROGRAM

BIO-6 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about sensitive biological resources associated with the project.

Protocol: The Worker Environmental Awareness Program must:

1. Be developed by the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures; and
5. Identify whom to contact if there are further comments and questions about the material discussed in the program.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist. Each participant in the on-site Worker Environmental Awareness Program shall sign a statement declaring that the individual understands and shall abide by the guidelines set forth in the program materials. The person administering the program shall also sign each statement.

Verification: At least 60 days prior to the start of any project-related site mobilization, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the

Designated Biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state 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. The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM for a period of at least six (6) months after the start of commercial operation. During project operation, signed statements for active project operational personnel shall be kept on file for the duration of their employment and for six (6) months after their termination.

The following condition had only minor changes made to it.

CALIFORNIA DEPARTMENT OF FISH & GAME INCIDENTAL TAKE PERMIT

BIO-7 Prior to start of any project-related site mobilization activities, the project owner shall acquire an Incidental Take Permit from CDFG in accordance with Section 2081(b) of the California Fish and Game Code and implement the permit terms and conditions.

Verification: No less than five (5) days prior to the start of project-related site mobilization activities, the project owner shall submit to the CPM a copy of the final CDFG Incidental Take Permit. Permit terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

The following condition had only minor changes made to it.

U.S. FISH & WILDLIFE SERVICE SECTION 7 BIOLOGICAL OPINION

BIO-8 Prior to the start of any project-related site mobilization activities, the project owner shall provide a final copy of the Biological Opinion in accordance with Section 7 of the federal Endangered Species Act obtained from the U. S. Fish and Wildlife Service and incorporate the terms of the opinion into the Biological Resources Mitigation Implementation and Monitoring Plan. The project owner will implement the terms and conditions contained in the federal Biological Opinion.

Verification: At least 60 days prior to the start of any project related site mobilization activities the project owner shall submit to the CPM a copy of the Biological Opinion. Permit terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

The following condition needed to be changed since the revised project will not be providing steam to the adjacent oilfield.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION & MONITORING PLAN

BIO-9 The project owner shall submit to the CPM for review and approval a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and shall implement the measures identified in the plan. Any changes made to the adopted BRMIMP must be made in consultation with the Energy Commission as well as with the Bureau of Land Management, California Department of Fish and Game, and the U. S. Fish and Wildlife Service.

Protocol: The final BRMIMP shall identify:

- All mitigation, monitoring, and compliance conditions included in the Commission's Final Decision;
- All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure;
- All mitigation measures provided in the USFWS Biological Opinion and the CDFG Incidental Take Permit;
- All required mitigation measures for each sensitive biological resource;
- Required habitat compensation, including provisions for acquisition, enhancement and management, for any temporary and permanent loss of sensitive biological resources;
- ~~• As an appendix, the Memorandum of Understanding or similar commitment document required by Condition of Certification BIO-5 detailing avoidance measures to be implemented during construction of the 700 new oil production wells, steam injection wells, and appurtenant facilities that will be implemented to avoid and/or minimize impacts to San Joaquin kit fox as well as other sensitive species from oil and steam field construction activities;~~
- All locations, on a map of suitable scale, of laydown areas and areas requiring temporary protection and avoidance during construction;
- Aerial photographs of all areas to be disturbed during project construction activities - one set prior to site disturbance and one set subsequent to completion of mitigation measures. Include planned timing of aerial photography and a description of why times were chosen;
- Duration for each type of monitoring and a description of monitoring methodologies and frequency;
- Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

- All performance standards and remedial measures to be implemented if performance standards are not met;
- A discussion of biological resource-related facility closure measures;
- A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
- Terms and conditions of a CDFG Streambed Alteration Agreement, if necessary.

Verification: At least 60 days prior to start of any project-related site mobilization activities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plans acceptability within 15 days of receipt of the final plan. All modifications to the approved BRMIMP must be made only after consultation with CEC, BLM and USFWS. The project owner shall notify the CPM five (5) working days before implementing any CPM approved modifications to the BRMIMP.

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which mitigation and monitoring plan items are still outstanding.

Due to changes in the amount of habitat that will be impacted by the proposed project, the following condition needed to amended.

HABITAT COMPENSATION

BIO-10 To compensate for temporary and permanent, direct and indirect, impacts to sensitive wildlife habitat, the project owner will provide a cashier's check for **\$196,977** to the Center for Natural Lands Management. Additional funds may be required if additional habitat is disturbed beyond that identified in this analysis.

Verification: Within one (1) week of project certification, the project owner must provide written verification to the CPM that the required compensation funds have been provided to CNLM.

Within 180 days after completion of project construction, the project owner shall provide the CPM aerial photographs taken after construction and an analysis of the amount of any additional habitat disturbance beyond that identified in the Energy Commission Final Staff Assessment. The CPM will notify the project owner of any additional funds required to compensate for any additional habitat disturbances at the adjusted market value at the time of construction to acquire and manage habitat.

Since the project may have a short life span, the following condition needed to be amended.

FACILITY CLOSURE

BIO-11 The project owner will incorporate into the Planned Permanent or Unexpected Permanent Closure Plan measures that address the local biological resources. The biological resource facility closure measures will also be incorporated into the Sunrise Power Project BRMIMP.

Protocol: The Planned Permanent or Unexpected Permanent Closure Plan must include a discussion of the following biological resource-related mitigation measures:

- Removal of transmission towers and conductors when they are no longer used and useful;
- Removal of all power plant site facilities; and
- Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species.

Verification: At least 12 months (or a mutually agreed upon time) prior to the commencement of closure activities, the project owner shall address all biological resource-related issues associated with facility closure in a Biological Resources Element. The Biological Resources Element will be incorporated into the Facility Closure Plan, and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

The following condition needs to be added because the U. S. Fish and Wildlife Service recently indicated that bird flight diverters would be required for new transmission line ground wires in the Kern County region to reduce the likelihood of the California condor (a state and federally listed species) collisions with new transmission lines. Staff recommends that the new Sunrise transmission line, and the existing La Paloma Generating Project transmission line if Sunrise utilizes that existing transmission line to connect to the Midway Substation, have bird flight diverters installed on the ground wires to address the California condor collision issue.

CALIFORNIA CONDOR

BIO-12 During construction of the new Sunrise Power Project transmission line, the power plant owner will install USFWS-approved bird flight diverters on the new transmission line ground wire(s), including the new La Paloma transmission line ground wires if Sunrise links directly to that line at the new La Paloma Generating Project power plant.

Protocol: Bird flight diverters must be:

Installed to manufacturer's specifications;

Replaced when damaged or deemed defective; and

3. Maintained for the full length of the transmission line for the life of the facility.

Verification: No later than 10 days prior to energizing the new Sunrise transmission line (including the La Paloma transmission line if Sunrise links to that new transmission line), the project owner will provide photographic verification to the Energy Commission CPM that all required bird flight diverters have been installed, according to manufacturer's specifications, for the full length of the new transmission line.

The project's final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) will provide complete guidance regarding bird flight diverter installation and maintenance.

REFERENCES

- APLIC 1996. Suggested practices for raptor protection on power lines: the state of the art in 1996. Avian Power Line Interaction Committee, Edison Electric Institute and Raptor Research Foundation.
- Babcock, Keith. 2000. Personal communication with Rick York regarding condor sightings. September 7, 2000.
- Daniels, Donna. 2000. Personal communication with Rick York regarding state Incidental Take Permit. October 17, 2000.
- Jones, Susan. 2000. Personal communication with Rick York regarding anticipated release of federal Biological Opinion. October 18, 2000.
- Pace, Brenda. 2000. Personal communication with Rick York regarding habitat compensation costs. September 29, 2000.
- URS. 2000a. Amendments to application for certification and prevention of significant deterioration permit application.
- URS. 2000b. Responses to Sunrise Power Project data requests dated September 27, 2000. October 2000.

SOIL AND WATER RESOURCES

Supplemental Testimony of Joseph O'Hagan

INTRODUCTION

On September 12, 2000, Sunrise Power Company (SPC) filed an amended Application for Certification (AFC). The proposed project, now called the Sunrise Power Project (Sunrise), is a 320 MW peaking facility that is anticipated to run approximately 128, 16-hour days throughout the year during periods of peak electricity demand. The facility is planned to operate for only three years. Other changes to the project include minor modifications to the natural gas and two water pipelines as well as the manner of wastewater disposal.

SOIL&WATER RESOURCES

SOILS

The amended project will be utilizing the same footprint as that identified for the original AFC. SPC (Sunrise 2000a) is proposing a new 2.5-mile long natural gas pipeline and two 340-foot long water lines. Proper implementation of the mitigation measures identified in the Final Staff Assessment should ensure construction and operation of these project changes will not adversely impact soil resources. The new natural gas pipeline does not appear to cross any water bodies that may trigger the need for a 404 or Nationwide Permit from the Army Corp of Engineers.

WATER

WATER SUPPLY

As with the original AFC, the amended project will use water from the West Kern Water District. The district, which serves municipal and industrial customers, receives most of its water from groundwater. Water demand for the revised project is 48.7 gallons per minute (gpm) or slightly more than 46,000 gallons per day [gpd] (Sunrise 2000a, Revised Figure 2-5). Assuming the facility operates 16 hours a day 128 days over the course of the year, total water demand is approximately 18.3 acre-feet per year (afy). This is a significant reduction in water demand from the original AFC.

The majority of this water (42 gpm) will serve as makeup water for the combustion turbine evaporative coolers. Depending upon ambient temperatures, the evaporative coolers may not be operated all the time when the facility is operating. Other water demands include service water needs and demineralized water for combustion turbine generator (CTG) washing. Staff analysis on the original AFC concluded that the West Kern Water District could meet the project's demand-over 78-acre feet per year without contributing to a project specific or cumulative impact to water supply. Staff concludes that the revised project will also not contribute to a project specific or cumulative impact to water supplies.

WASTEWATER

Wastewater flows from the amended project will be approximately 20 gpm (Sunrise 2000a). The majority of the wastewater (14 gpm) will be evaporative cooler blowdown. Other wastewater streams include flows from plant and equipment drains (5 gpm) and reject (1 gpm) from the reverse osmosis water treatment unit. Wastewater flows will be collected in the wastewater collection basin before being piped to the oilfield. The reverse osmosis and demineralizer treatment unit will be regenerated offsite (Sunrise 2000a, Revised Figure 2-5). The water treatment unit is to provide high quality water for the CTG wash. The stack will evaporate wash water from the CTG.

The wastewater from the amended project is of suitable quality to be re-used in the oilfield. The wastewater quality is shown in Table 2-2 (Sunrise 2000a). Although Sunrise is located in an oilfield, it is not considered an oilfield-related facility. Therefore, unlike the original AFC, wastewater from the amended project cannot be discharged to Valley Waste. SPC (Muraoka 2000) proposes to discharge the wastewater from the collection basin to an existing Texaco California Inc. (TCI) line. This line then ties into the TCI lease water system, which provides water for oil field operations. Specifically, water from the lease line, which carries approximately 333,000 gpd (8,000 barrels per day), is used for oil well workover rigs and in the oil field gauging facilities. The lease water utilized on workover rigs is run down the casing to control well vapors during rig workover maintenance activities while the lease water used at the gauging facilities is used for flushing.

The attached Soil & Water Figure 1 shows the layout of the lease water system. Wastewater from Sunrise will enter the lease water system upstream from the point where wastewater from Water Cleaning Plant 222 is discharged to Valley Waste. Staff concludes that the proposed recycling of project wastewater within the Texaco oil field will not adversely impact water resources. The project owner should be complemented for devising a water recycling program.

STORMWATER RUNOFF

SPC is not proposing any changes to the way stormwater runoff is handled from the original AFC.

INFORMATION ADDRESSED IN THE FINAL STAFF ASSESSMENT THAT IS NOT APPLICABLE TO THE AMENDMENT

Information and discussions regarding the use of produced water by the project, the discharge of wastewater to Valley Waste and oil field related development should be deleted.

CHANGES TO THE PROPOSED CONDITIONS OF CERTIFICATION

SPC (Sunrise, Appendix J) recommends that the verification for condition Soil & Water 2 be changed:

Verification: The final erosion control and revegetation plan shall be submitted to the Energy Commission CPM for approval 30 days prior to the initiation of any earth moving activities, or a lesser time as mutually agreed upon by the project owner and the CPM.

Staff does not support this proposed change simply because time lines contained in the verification already can be changed by staff as necessary. If a lesser time is needed, staff will certainly try to accommodate the project owner with a revised schedule.

REFERENCES

Sunrise (Sunrise Power Project) 2000a. Amendments to AFC and PSD Permit Application. Submitted to the California Energy Commission on September 12, 2000.

GEOLOGY AND PALEONTOLOGY

Supplemental Testimony of Robert Anderson

INTRODUCTION

The following testimony is presented as a supplement to my earlier testimony regarding geological resources and hazards, paleontological resources, and surface water hydrology. This supplemental testimony is in response to the applicant's amendment to the Application for Certification for the Sunrise Power Project (Sunrise) (Sunrise 2000a), which is for a simple cycle peaking facility. It is understood that the peaker project will operate for not longer than three years. At the end of the three-year period of operation, the peaker project will either close or be upgraded to a combined cycle natural gas-fired power plant. There have been only two substantive changes to the originally proposed 320 MW power plant with respect to geological resources, geological hazards, paleontological resources and surface water hydrology.

STAFF ANALYSIS

There are two changes of note with respect to geological hazards and resources, paleontological resources, and surface water hydrology for the Sunrise Power Project. These changes are:

- The inclusion of a 20-inch diameter natural gas pipeline originating from a natural gas metering station approximately 2.5 miles east of the project footprint, and running to the project site; and
- Two water pipelines relocated 300 feet south of the project.

The natural gas pipeline crosses relatively young quaternary alluvium and does not cross any known active faults from the gas metering station to the project footprint. The alluvium in the vicinity of the natural gas pipeline is not known to contain significant paleontological resources (Sunrise 2000a, page 8.16-1) (Sunrise 2000b pages 17 and 18). Two water pipelines are proposed to be located 300 feet to the south of the project footprint. Both water pipelines are also located on quaternary alluvium. Neither pipeline crosses known active faults. The alluvium in the vicinity of the alignment for the two water lines is not known to contain paleontological resources (Sunrise 2000a, page 8.16-1; Sunrise 2000b pages 17 and 18).

CONCLUSION AND RECOMMENDATIONS

The applicant will likely be able to comply with applicable LORS. The project should have no adverse impact with respect to geological and paleontological resources and surface water hydrology. Staff propose to ensure compliance with applicable LORS for geological hazards, geological and paleontological resources and surface water hydrology with the adoption of the proposed conditions of certification listed below.

CONDITIONS OF CERTIFICATION

Staff recommends the following changes to the Conditions of Certification as contained in the Presiding Member's Proposed Decision (PMPD).

PMPD, page 231, GEO-1, second paragraph is the verification and should appear:

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the Kern County Chief Building Official ((CBO)) prior to the start of construction, the project owner shall submit to the CPM the name(s) and license number(s) of the certified engineering geologist(s) assigned to the project. The submittal should include a statement that CPM approval is needed. The CPM will approve or disapprove of the engineering geologist(s) and will notify the project owner of its findings within 15 days of receipt of the submittal. If the engineering geologist(s) is subsequently replaced, the project owner shall submit for approval the name(s) and license number(s) of the newly assigned individual(s) to the CPM. The CPM will approve or disapprove of the engineering geologist(s) and will notify the project owner of the findings within 15 days of receipt of the notice of personnel change.

PMPD, page 232, GEO-3, replace in its entirety with:

GEO-3 Pipelines shall be located with a minimum setback from oil wells (producing wells, idle wells, or plugged and abandoned wells) of fifty feet. All above-ground pipelines shall be located with a minimum setback from oil wells of 125 feet in at least one direction, so that a portable derrick may be raised over the oil well.

Protocol: The project owner shall submit a linear facility (transmission lines and utility lines) development plan, addressing any actions to be undertaken by the project owner to ensure no hazard or problems will be created with the existing wells in the construction site and laydown areas, to the Department of Conservation, Division of Oil and Gas, and geothermal Resources (DOGGR) for review and comment. The linear facility development plan shall include a discussion of how a minimum setback from existing oil wells is to be maintained.

Verification: At least thirty (30) days prior to the start of construction, or a lesser time as mutually agreed upon by the project owner and the CPM, the project owner shall submit to the CPM a copy of DOGGR's letter commenting on the linear facility development plan. Within fifteen days (15) days of the receipt of the development plan and the DOGGR comment letter on the plan, the CPM will either approve or comment and deny the plan, and transmit the approval or denial letter to the project owner.

PMPD, page 231, PAL-1, change the timeframe in the first paragraph of the verification, as shown:

Verification: ~~Ninety (90)~~ Thirty (30) days prior to the start of construction, or a lesser period of time mutually agreed to by the project owner and the CPM, the project owner shall submit the name and resume and the availability for its designated paleontological resources specialist, to the CPM for review and approval. The CPM shall provide written approval or disapproval of the proposed paleontological resources specialist.

PMPD, page 233, PAL-2, change the timeframe in the verification, as shown:

Verification: ~~Sixty (60)~~ Thirty (30) days prior to the start of construction on the project, or a lesser period of time mutually agreed to by the project owner and CPM, the project owner shall provide the CPM with a copy of the Monitoring and Mitigation Plan prepared by the designated paleontological resources specialist for review and approval. If the plan is not approved, the project owner, the designated paleontological resources specialist, and the CPM shall meet to discuss comments and negotiate necessary changes.

REFERENCES

- Sunrise (Sunrise Power Project) 2000a. Amendments to AFC and PSD Permit Application. Submitted to the California Energy Commission on September 12, 2000.
- Sunrise (Sunrise Power Project) 2000b. Applicant's responses to Staff's Data Requests on the amended AFC. Submitted to the California Energy Commission on October 6, 2000.
- SVP (Society of Vertebrate Paleontologists). 1994. Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontological Resources: Standard Procedures. October.

FACILITY DESIGN

Supplemental Testimony of Steve Baker, Kisabuli and Al McCuen

INTRODUCTION

The following testimony is presented as a supplement to the earlier testimony regarding facility design. This supplemental testimony is in response to the applicant's amendment to the application for certification Sunrise Power Project (Sunrise 2000a), which is for a simple cycle peaking facility. It is understood that the peaker project will operate for not longer than three years. At the end of the three-year period of operation, the peaker project will close or be upgraded to a combined cycle natural gas-fired power plant. There have been some changes to the originally proposed 320 MW power plant project.

STAFF ANALYSIS

The analysis associated with the original application has not changed as a result of the proposed simple cycle project, except that portions of the original equipment and their associated foundations are now eliminated. Those project components should be ignored. The eliminated project components and their associated foundations are listed below:

- HRSG and ancillary components;
- SCR systems;
- Oxidation catalysts;
- Feedwater storage tanks; and
- Ammonia storage and handling systems.

As a result of the eliminated project components and their associated foundation, staff has provided a revised Condition of Certification (**GEN-2**). An additional change to the original project involves the inclusion of a 20-inch diameter natural gas pipeline originating from a natural gas metering station approximately 2.5 miles east of the project footprint, and running to the project site; and two water pipelines relocated 300 feet south of the project.

The above changes do not necessitate additional analysis or re-analysis of the project from an engineering perspective.

CONCLUSION AND RECOMMENDATIONS

The conclusions and recommendations have not changed as a result of the applicant changing the project from a cogeneration powerplant to a peaker project.

CONDITIONS OF CERTIFICATION

Staff recommends the following changes to the Conditions of Certification as contained in the Presiding Member's Proposed Decision (PMPD).

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

TABLE 1 - Major Equipment List

Quantity	Description	Size/Capacity*	Remarks
2	Combustion Turbine (CT).	164.2 MW.	Dry low No _x combustion control and starter package.
2	CT inlet filter.		Two-stage, media type.
2	Inlet air cooling system.		Evaporative type.
2	Fuel gas scrubbers.	43.80 MMSCFD.	340 psig minimum inlet pressure.
2	Fuel gas heat exchangers	12 MMBtu/h	
2	CTG stack		18' ID (19' OD) x 100' high
1	Demineralized water transfer pump	20 gpm	
2	Heat Recovery Steam Generator (HRSG).	900,000 lb./hr minimum.	
2	HRSG stack.		19' dia. X 100' high.
2	Selective catalytic reduction (SCR).		Sized to achieve BACT/LEAR.
2	Ammonia injection skid.		Two blowers per HRSG.
4	Anhydrous ammonia storage tank.	5,300 gal.	To injection skid.
3	HRSG feed pump.	2,050 gpm.	From tank to HRSGs.
4	Feedwater storage tank.	1.4 million gal.	To feed water pumps.
1	Demineralized water storage tank.	18,800 gal.	
1	Wastewater collection basin	40,000 gal.	
2	Wastewater transfer pump	75 gpm	To TCI
2	Generator transformers.	18/230 kV.	To Sunrise Substation.
2	Auxiliary transformer.	4.16/18 kV.	To plant loads.
2	CEMS Building		Continuous emission monitoring system

TABLE 2 - Major Structures, Equipment and Associated Foundations

Quantity	Description	Dimensions (ft)*		
		Length	Width	Height
2	Combustion gas turbine generator and starter package (CT).	64	30	30
2	CT air inlet filter with air cooling system.	40	30	57
2	Generator with enclosure.	36	25	30
2	Fuel gas scrubber.	--	2.5 dia.	7
2	Heat Recovery Steam Generator (HRSG).	400	70	30
2	CTG HRSG stack.		19 dia.	100
2	Selective catalytic reduction skid (SCR).	40	6	6
2	Generator breaker.	12	10	8
4	Auxiliary transformer.	14	10	14
2	Step-up transformer.	35	18	30
1	Demineralized water storage tank.	--	12 dia.	24
1	Common services building	150	30	16
4	Feedwater storage tank.	--	67 dia.	40
4	Anhydrous ammonia storage tank.	25	6 dia.	--
1	Switchyard, buses and towers.	--	22 (3 phases)	28 (high bus)
1	Electrical/equipment building.	35	20	12
1	Wastewater collection basin.	26.5	8	15
1	Switchyard control building (Sunrise).	40	20	14
1	Hydrogen storage tank	40	8	8
2	Secondary unit substation (SUS) transformer	9	9	9
2	Continuous emissions monitoring building	8	12	10

***All capacities and dimensions are approximate and may change during project final design.**

PMPD, page 49, GEN-2, change the timeframe in the verification, as shown:

Verification: At least ~~sixty (60)~~ thirty (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 the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The project owner shall provide schedule updates in the Monthly Compliance Report.

REFERENCES

Sunrise (Sunrise Power Project) 2000a. Amendments to AFC and PSD Permit Application. Submitted to the California Energy Commission on September 12, 2000.

Sunrise (Sunrise Power Project) 2000b. Applicant's responses to Staff's Data Requests on the amended AFC. Submitted to the California Energy Commission on October 6, 2000.

POWER PLANT RELIABILITY

Supplemental Testimony of Steve Baker

INTRODUCTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant, instead of the simple cycle cogeneration power plant envisioned in the original AFC. This supplemental testimony evaluates changes in the reliability of the newly proposed Sunrise Power Project (Sunrise 2000a) as compared to the SCPP.

ANALYSIS

The Sunrise project will be capable of generating 329 MW at an annual capacity factor up to 28 percent (Sunrise 2000a, Amendment §§ 1.6, 2.2.16; Figure 2-3). The expected annual availability of the plant will range from 95 to 98 percent, and could exceed 98 percent in any one year (Sunrise 2000a, Amendment § 2.4.1).

The Sunrise project can be expected to exhibit at least the same reliability as the SCPP. Reliability may be even higher, as the lack of heat recovery steam generators (HRSGs) and selective catalytic reduction (SCR) reduces the amount of equipment that might fail.

CONCLUSION

The Sunrise project would exhibit an annual availability of 95 percent or greater, which agrees with the industry norm for this type of power plant.

REFERENCES

Sunrise (Sunrise Power Company). 2000 a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

POWER PLANT EFFICIENCY

Supplemental Testimony of Steve Baker

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC. This supplemental testimony evaluates changes in the fuel efficiency aspects of the newly proposed Sunrise Power Project (Sunrise 2000a) as compared to the SCPP.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS

Since the Sunrise project will not be a cogeneration project as the SCPP was, it need not meet the legal definition of a cogeneration project (Pub. Resources Code, § 25134).

ANALYSIS

ADVERSE IMPACTS ON ENERGY RESOURCES

PROJECT ENERGY REQUIREMENTS AND ENERGY USE EFFICIENCY

The Sunrise project will operate up to 16 hours per day, six days per week during peak demand periods. The plant's annual capacity factor is expected to reach 28 percent (Sunrise 2000a, Amendment §§ 1.6, 2.2.16). Natural gas consumption will range between 77 and 88 billion Btu per day (Sunrise 2000a, Amendment § 7.0).

Electricity will be generated at the maximum rate of 329 MW, and at a peak load efficiency of approximately 36.2 percent LHV¹ (Sunrise 2000a, Figure 2-3; Appendix I-8). These figures are greater than those for the SCPP due largely to the reduction in exhaust backpressure caused by elimination of the heat recovery steam generators (HRSGs) and selective catalytic reduction (SCR) units.

COMPLIANCE WITH ENERGY STANDARDS

Since it will not be a cogeneration facility, the Sunrise project will not be required to meet the energy standards inherent in the definition of a cogeneration facility (Pub. Resources Code, § 25134).

¹ Lower heating value.

ALTERNATIVES TO REDUCE WASTEFUL, INEFFICIENT AND UNNECESSARY ENERGY CONSUMPTION

PROJECT CONFIGURATION

The Sunrise project will be configured as a simple cycle peaking power plant. This represents the best configuration for use as a peaker, providing fast startup and ramping to respond quickly to dispatch. The applicant proposes to operate the turbines between 60 and 100 percent of full load. The use of two gas turbine generators allows the plant to operate at half load as efficiently as at full load.

EQUIPMENT SELECTION

The General Electric Frame 7FA gas turbines selected represent the most efficient equipment available for this service. Operating them without HRSGs and SCR provides a slight increase in power output and fuel efficiency compared to the SCPP, due to reduced exhaust backpressure.

RESPONSE TO PUBLIC AND AGENCY COMMENTS

No comments have been received regarding Power Plant Efficiency.

CONCLUSIONS AND RECOMMENDATION

CONCLUSIONS

The Sunrise project would generate 329 MW at a fuel efficiency of 36.2 percent LHV while providing peaking power to the electric power grid. While it will consume substantial amounts of energy, it will do so in a reasonable efficient manner. It will not create significant adverse effects on energy supplies or resources, will not require additional sources of energy supply, and will not consume energy in a wasteful or inefficient manner. No energy standards apply to the project. Energy Commission staff therefore concludes that the Sunrise project would present no significant adverse impacts upon energy resources.

No Conditions of Certification are proposed.

RECOMMENDATION

PMPD, page 76, delete Condition of Certification EFF-1.

REFERENCES

Sunrise (Sunrise Power Company). 2000 a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

TRANSMISSION SYSTEM ENGINEERING

Supplemental Testimony of Mark Hesters

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

Because the proposed amended project is the same size, or slightly smaller than the original project, the impacts of the amended project are the same as in the existing System Impact Study (SIS). The SIS found no need for downstream facilities, and that the project would be required to participate in an existing remedial action scheme. Therefore, the existing testimony stands as is.

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

ALTERNATIVES

Supplemental Testimony of Eileen Allen

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

Although the proposed project has been amended from a cogeneration to a simple cycle power plant, staff believes that there are no changes needed to the previous Alternatives testimony's analysis of alternative sites.

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

GENERAL CONDITIONS
INCLUDING COMPLIANCE MONITORING AND FACILITY CLOSURE
Supplemental Testimony of Nancy Tronaas

INTRODUCTION

PROJECT DESCRIPTION

Sunrise Power Company has amended the earlier Application for Certification (AFC) for the Sunrise Cogeneration and Power Project (SCPP) (98-AFC-4). The amendment would provide for construction of the Sunrise Power Project (Sunrise), a temporary simple cycle peaking power plant instead of the simple cycle cogeneration power plant envisioned in the original AFC.

CONCLUSIONS AND RECOMMENDATION

No changes are needed to the previous General Conditions and Compliance testimony. Staff does not agree with the applicant's proposed modifications that are presented in its amended application because the proposed 10-day time limit for all compliance verification reviews may be insufficient to assure that the requirements of the condition have been satisfied. (Sunrise 2000a.)

REFERENCES

Sunrise (Sunrise Power Company). 2000a. Amended Application for Certification for the Sunrise Power Project (98-AFC-4). Submitted to the California Energy Commission, September 12, 2000.

PREPARATION TEAM

Introduction and Summary	Marc S. Pryor
Project Description	Marc S. Pryor
Air Quality	Joe Loyer
Public Health	Obed Odoemelum
Worker Safety and Fire Protection.....	Chris Tooker
Transmission Line Safety and Nuisance	Obed Odoemelum
Hazardous Materials Handling.....	Rick Tyler
Waste Management	Mike Ringer
Land Use	Amanda Stennick
Traffic and Transportation	David Flores
Noise	Kisabuli
Visual Resources.....	Gary Walker
Cultural Resources	Gary Reinoehl and Dorothy Torres
Socioeconomics	Joe Diamond
Biology.....	Rick York
Water and Soils	Joe O'Hagan
Paleontological Resources	Robert Anderson
Facility Design	Steve Baker, M. Kisabuli, and Al McCuen
Reliability	Steve Baker
Efficiency	Steve Baker
Transmission System Engineering	Mark Hesters
Alternatives.....	Eileen Allen
Compliance Monitoring Plan and General Conditions	Nancy Tronaas

Glossary of Terms and Acronyms Bert Fegg
Project Secretary.....Luz Manriquez

DECLARATIONS AND RESUMES