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BLYTHE SOLAR POWER PROJECT

Presiding Member's Proposed Decision

CALIFORNIA
ENERGY COMMISSION
Arnold Schwarzenegger, Governor

AUGUST 2010
CEC-800-2010-009 PMPD

DOCKET NUMBER 09-AFC-6

CALIFORNIA
ENERGY COMMISSION

1516 Ninth Street
Sacramento, CA 95814

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

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Presiding Committee Member

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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
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The Committee hereby submits its Presiding Member's Proposed Decision for the ***Blythe Solar Power Project*** (Docket Number 09-AFC-6). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code Regs., §§ 1749-1752.5.)

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

Dated: August 11, 2010, at Sacramento, California.

KAREN DOUGLAS
Chairman and Presiding Member
Blythe Solar AFC Committee

ROBERT B. WEISENMILLER
Commissioner and Associate Member
Blythe Solar AFC Committee

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INTRODUCTION

A. SUMMARY OF THE DECISION

This Decision contains the Commission's rationale in determining that the proposed Blythe Solar Power Plant Project (BSPP) will, as mitigated, either have no significant impacts on the environment and comply with all applicable laws, ordinances, regulations, and standards (LORS), or is required for public convenience and necessity and there is no more prudent and feasible means of achieving such public convenience and necessity. The project may therefore be licensed. Our Decision is based exclusively upon the record established during this certification proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the record[1] supporting our findings and conclusions, and specified the measures required to ensure that the BSPP is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

On August 24, 2009, the California Energy Commission received an Application for Certification (AFC) from the Applicant to construct and operate the BSPP in Riverside County. A Supplement to the AFC was received on October 26, 2009, and deemed adequate at the Energy Commission's November 18, 2009 Business Meeting beginning staff's analysis of the proposed project. The Energy Commission has exclusive jurisdiction to license this project and is considering the proposal under a review process established by Public Resources Code section 25540.6.

The project is proposed to be located in the California inland desert, approximately eight miles west of the city of Blythe and two miles north of the Interstate-10 freeway in Riverside County, California. The Applicants are seeking a right-of-way grant for approximately 9,400 acres of land administered by the BLM. Construction and operation of the project would disturb a total of about 7,030 acres.

The Blythe project would utilize solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy

[1] The Reporter's Transcript of the evidentiary hearings is cited as "date of hearing RT page __." For example: 7/16/10 RT 77. The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in **Appendix B** of this Decision.

from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is heated to high temperature (750°F) as it circulates through the receiver tubes. The heated HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced.

Each of the four solar field systems operates under the control of its Field Supervisor Controller (FSC), which is a computer located in the central control room. The FSC collects information from each Solar Collector Assembly (SCA) and issues instructions to the SCA's. Some of its functions include deploying the solar field during the day when weather and facility availability permit, and stowing it at night and during high winds (in high wind conditions, the solar field must be stowed). A weather station located in the power block areas provides real-time measurements of weather conditions that affect the solar field operation. Radiation data is used to determine the performance of the solar field.

The auxiliary boiler and HTF heaters for each unit would be fueled by natural gas. The gas for the entire project would be supplied from a new 10-mile (two miles offsite) four-inch diameter pipeline connected to an existing SCG main pipeline south of I-10.

The project would be dry cooled. The project's water uses include solar mirror washing, feedwater makeup, fire water supply, on-site domestic use, cooling water for auxiliary equipment, heat rejection, and dust control. The project water needs would be met by use of groundwater pumped from one of two wells on the plant site.

At each solar field, to facilitate dust and contaminant removal, water from the primary desalination process, reverse osmosis (RO) water, would be used to spray clean the solar collectors. The collectors would be cleaned once or twice per week, determined by the reflectivity monitoring program.

Project construction is expected to occur over a total of 69 months. Project construction would require an average of 604 employees over the entire 69-month construction period, with manpower requirements peaking at approximately 1,004 workers in Month 16 of construction. The construction workforce would consist of a range of laborers, craftsmen, supervisory personnel, support personnel, and management personnel. BSPP would be staffed 24 hours

a day, seven days per week. A total estimated workforce of 221 full time employees would be needed with all four units operating

B. SITE CERTIFICATION PROCESS

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

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

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

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

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed Project and obtaining necessary technical information. During this time, the Commission staff sponsors public workshops at which intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff publishes its initial technical evaluation of the Project in its Preliminary Staff Assessment (PSA), which is made available for a 30-day public comment period. Staff's responses to public comment on the PSA and its complete analyses and recommendations are published in the Final Staff Assessment (FSA, also Exhibit 500).

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

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

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

C. PROCEDURAL HISTORY

Public Resources Code, sections 25500 et seq. and Energy Commission regulations (Cal. Code Regs., tit. 20, § 1701, et seq.) mandate a public review process and specify the occurrence of certain procedural events in which the public may participate. The key procedural events that occurred in the present case are summarized below.

On August 24, 2009, the California Energy Commission received an Application for Certification (AFC) from the Applicant to construct and operate the BSPP in Riverside County. A Supplement to the AFC was received on October 26, 2009, and deemed adequate at the Energy Commission's November 18, 2009 Business Meeting beginning staff's analysis of the proposed project. The Energy Commission assigned a Committee of two Commissioners to conduct proceedings.

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

On January 11, 2010, the Committee issued a Notice of "Informational Hearing and Site Visit". The Notice was mailed to local agencies and members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the BSPP. The Public Adviser's Office also advertised the public hearing and site visit and distributed information to local officials and sensitive receptors surrounding the project site.[2]

On January 25, 2010, the Committee conducted a Site Visit to tour the proposed BSPP site and then convened a public Informational Hearing at the Blythe City Hall Council Chambers in Blythe, CA. At that event, the Committee, the parties, interested governmental agencies, and other public participants discussed issues related to development of the project, described the Commission's review process, and explained opportunities for public participation.

On February 9, 2010, the Committee issued an initial Scheduling Order. The Committee Schedule was based on both Applicant and Staff's proposed schedules and related discussion at the Informational Hearing.

[2] Sensitive receptors are people or institutions with people that are particularly susceptible to illness, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics), and persons engaged in strenuous exercise.

The schedule contained a list of events that must occur in order to complete the certification process within twelve months. The initial schedule covered the period up to the Prehearing Conference. The balance of the schedule will be determined at the Prehearing Conference.

In the course of the review process, Staff conducted public workshops on December 9, 2001, January 7, 2010, April 28 and 29, 2010 which was a publicly noticed Data Response and Issue Resolution workshop held at the Bureau of Land Management (BLM) Palm Springs, California. The purposes of the workshops were to provide members of the community and governmental agencies opportunity to obtain project information, and to offer comments they may have had regarding any aspect of the proposed project.

The Staff Assessment and Draft Environmental Impact Statement was issued on March 11, 2010. The revised Staff Assessment was issued on June 4, 2010. Workshops were held on July 14 and 19, 2010 to accept comments.

The Committee conducted the Prehearing Conference on June 17, 2010 and held Evidentiary Hearings on July 15 and 16, 2010.

The Committee published this PMPD on August 11, 2010, and scheduled a Committee Conference in Sacramento at Commission Headquarters for August 31, 2010. At the hearing, the parties may comment on the PMPD. The 30-day comment period on the PMPD will expire on September 10, 2010.

D. COMMISSION OUTREACH

Several entities within the Energy Commission provide various notices concerning power plant siting cases. Staff provides notices of staff workshops and the release of the Preliminary and Final Staff Assessments. The Hearing Office notices Committee-led events such as the informational hearing and site visit, status conferences, the prehearing conference, and evidentiary hearings. The Public Adviser's Office provides additional outreach for critical events as well as provides information to interested persons that would like to become more actively involved in a power plant siting proceeding. Further, the Media Office provides notice of events to local and regional press through press releases. The public may also subscribe to the proceeding's e-mail List Server offered on the web page for each project which gives an immediate notification of documents posted to the project web page. Through the activities of these entities, the Energy Commission has made every effort to ensure that interested persons are notified of activities in this proceeding.

E. PUBLIC COMMENT

The record contains public comments from concerned individuals and organizations. Throughout these proceedings, as reflected in the transcribed record, the Committee provided an opportunity for public comment at each Committee-sponsored conference and hearing.

I. PROJECT DESCRIPTION AND PURPOSE

On March 16, 2007, the Bureau of Land Management (BLM) received an Application for Transportation and Utility Systems and Facilities on Federal Lands to construct, operate, and maintain the Blythe Solar Power Plant Project (BSPP). On August 24, 2009, the California Energy Commission received an Application For Certification (AFC) from the applicant to construct and operate the BSPP in Riverside County. On October 26, 2009, a Supplement to the AFC was received and evaluated by staff. Subsequently, at the Energy Commission's November 18, 2009 Business Meeting, the AFC was deemed complete, beginning staff's analysis of the proposed project.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project is proposed to be located in the California inland desert, approximately eight miles west of the city of Blythe and two miles north of the Interstate-10 freeway in Riverside County, California. The applicants are seeking a right-of-way grant for approximately 9,400 acres of land administered by the BLM.

Construction and operation of the project would disturb a total of about 7,043 acres, which includes the final transmission line route, temporary construction power line and telecommunication line (see figure 1).

1. Description

BSPP would consist of four adjacent, independent, and identical units of 250 megawatt (MW) nominal capacity each for a total nominal capacity of 1,000 MW. The Blythe project would utilize solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is brought to high temperature (750°F) as it circulates through the receiver tubes. The HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced.

2. Individual Components of the Proposed Project

Solar Collector Assemblies - The project's SCAs are oriented north-south to rotate east-west to track the sun as it moves across the sky throughout the day. The SCAs collect heat by means of linear troughs of parabolic reflectors, which focus sunlight onto a straight line of heat collection elements (HCEs) welded along the focus of the parabolic "trough".

Parabolic Trough Collector Loop - Each of the collector loops consist of two adjacent rows of SCAs; each row is about 1,300 feet long. The two rows are connected by a crossover pipe. HTF is heated in the loop and enters the header, which returns hot HTF from all loops to the power block where the power generating equipment is located.

Mirrors - The parabolic mirrors to be used in the Project are low-iron glass mirrors. Typical life spans of the reflective mirrors are expected to be 30 years or more.

Heat Collection Elements - The HCEs of the four solar plants are comprised of a steel tube surrounded by an evacuated glass tube insulator. The steel tube has a coated surface, which enhances its heat transfer properties with a high absorptivity for direct solar radiation, accompanied by low emissivity.

Glass-to-metal seals and metal bellows are incorporated into the HCE to ensure a vacuum-tight enclosure. The enclosure protects the coated surface and reduces heat losses by acting as an insulator.

HTF System - In addition to the HTF piping in the solar field, each of the four HTF systems includes three elements: 1) the HTF heat exchanger, 2) the HTF expansion vessel and overflow vessel, and 3) the HTF ullage system. A heat exchanger would be used to help ensure system temperature stays above 54°F (12°C). The HTF expansion vessel and overflow vessel are required to accommodate the volumetric change that occurs when heating the HTF to the operating temperature. During plant operation, HTF would degrade into components of high and low boilers (substances with high and low boiling points). The low boilers are removed from the process through the ullage system.

Solar Steam Generator System - The steam generated in the SSG is piped to a Rankine-cycle reheat steam turbine. Heat exchangers are included as part of the

SSG system to preheat and boil the condensate, superheat the steam, and reheat the steam.

Steam Turbine Generator - The STG receives steam from the SSG. The steam expands through the STG turbine blades to drive the steam turbine, which then drives the generator, converting mechanical energy to electrical energy.

3. Operation of the Solar Fields

a. Warm up

Usually in the morning, the warm up mode brings the HTF flow rate and temperatures up to their steady state operating conditions. It does this by positioning all required valves, starting the required number of HTF main pumps for establishing a minimum flow within the solar field and tracking the solar field collectors into the sun.

b. Solar Field Control Mode

Solar field control mode begins automatically after warm-up mode. HTF main pump speeds are regulated to maintain the design solar field outlet temperature. If the thermal output of the solar field is higher than the design capacity of the steam generation system, collectors within the solar field are de-focused to maintain design operating temperatures.

c. Shutdown

If the minimal thermal input to the turbine required by the project's operating strategy cannot be met under the prevalent weather conditions, then shutdown is indicated. Operators would track all solar collectors into the stow position, reduce the number of HTF main pumps to a minimum, and stop the HTF flow to the power block heat exchangers.

d. HTF Freeze Protection System

At each unit, a freeze prevention and protection system would be used for the HTF piping systems when the solar power plant is shut down. Since the HTF freezes at a relatively high temperature (54°F or 12°C), HTF would be routinely circulated at low flow rates throughout the solar field using hot HTF from the storage vessel as a source. This circulation of the warm HTF overnight typically provides adequate freeze protection. At times where circulation alone is

insufficient to provide adequate freeze protection (such as winter nights) the auxiliary boiler, which will typically run at 25 percent capacity overnight to provide steam for the STG steam seals, will be utilized at 100 percent capacity to provide steam to an HTF heat exchanger to further heat the HTF.

4. Major Project Components

The major components and features of the proposed Blythe project include:

- Power Block Unit #1 (northeast);
- Power Block Unit #2 (northwest);
- Power Block Unit #3 (southwest);
- Power Block Unit #4 (southeast);
- Access road from Black Rock Road to onsite office;
- Office and parking;
- Land Treatment Unit (LTU) for bioremediation/land farming of HTF-contaminated soil;
- Warehouse/maintenance building and laydown area;
- Concrete Batch plant;
- Fuel depot;
- Onsite transmission facilities, including central internal switchyard;
- Dry wash rerouting; and
- Groundwater wells used for water supply.

The four power blocks are identical in design. The descriptions below apply to all four power blocks in all four units. Major components of each power block include:

- Steam generation heat exchangers;
- HTF overflow and expansion vessels;
- One HTF freeze protection heat exchanger;
- One auxiliary boiler;
- One steam turbine-generator (STG);
- One generator step up transformer (GSU);
- Air Cooled Condenser (ACC);
- One small wet cooling tower for ancillary equipment;
- Water filter system and Clarifier system
- Combination firewater/clarified water tank;
- Reverse osmosis (RO) reject water tank;
- Water surge tank;
- Potable Water System
- Demineralized Water System
- Demineralized Water Tank

- High pH Reverse Osmosis (HERO) waste water recovery system;
- Recovered water surge tank
- Evaporation waste stream pond(s)
- Water, natural gas, and HTF pipelines exiting the power block;
- Operations and maintenance buildings; and
- Transmission and telecommunications lines exiting the power block.

5. Fuel Supply and Use

The auxiliary boiler for each unit would be fueled by natural gas. The gas for the entire project would be supplied from a new 10-mile (two miles offsite) four-inch diameter pipeline connected to an existing Southern California Gas (SCG) main pipeline south of I-10. The estimated maximum natural gas usage rate per unit is 35 MMBtu/hr.

6. Water Supply and Use

The project would be dry cooled. The project's primary water uses include solar mirror washing, feed water makeup, fire water supply, onsite domestic use, and cooling water for auxiliary equipment and heat rejection.

The average total annual water usage for all four units combined is estimated to be about 600 acre-feet per year (afy), which corresponds to an average flow rate of about 388 gallons per minute (gpm), based on pumping 24 hours per day, 350 days per year. Usage rates during operation would vary during the year and would be higher in the summer months when the peak maximum flow rate could be as much as about 50 percent higher (about 568 gpm).

The project water needs would be met by use of groundwater pumped from wells on the plant site. Water for domestic uses by project employees would also be provided by onsite groundwater treated to potable water standards.

It is expected that two new water supply wells in each of the power blocks and two additional wells adjacent to the central warehouse would adequately serve the entire project. A second well would provide redundancy and backup water supply in the event of outages or maintenance of the first well.

At each solar field, to facilitate dust and contaminant removal, water from the demineralization process would be sprayed on the solar collectors for cleaning. The collectors would be cleaned once or twice per week, determined by the

reflectivity monitoring program. This mirror washing operation would be done at night and involves a water truck spraying treated water on the mirrors in a drive-by fashion. Because the mirrors are angled down for washing, water does not accumulate on the mirrors; instead, it would fall from the mirrors to the ground and, due to the small volume, is expected to soak in with no appreciable runoff. Any remaining rinse water from the washing operation would be expected to evaporate on the mirror surface.

7. Cooling Systems

Each of the four power plant units includes two cooling systems: 1) the air-cooled steam cycle heat rejection system and, 2) the closed cooling water system for ancillary equipment cooling.

The cooling system for heat rejection from the steam cycle consists of a forced draft air-cooled condenser, or dry cooling system. At each power block, the dry cooling system receives exhaust steam from the LP section of the STG and condenses it to liquid for return to the SSG.

The auxiliary cooling water systems use a wet cooling tower for cooling plant equipment, including the STG lubrication oil cooler, the STG generator cooler, steam cycle sample coolers, large pumps, etc. An average of 146,000 gallons of water per day (160 afy) would be consumed by the auxiliary cooling water system; the maximum rate of consumption is 223,000 gallons per day in summer.

8. Waste Generation and Management

Project wastes would be comprised of non-hazardous wastes including solids and liquids and lesser amounts of hazardous wastes and universal wastes. The non-hazardous solid waste primarily would consist of construction and office wastes, as well as liquid and solid wastes from the water treatment system. The non-hazardous solid wastes would be trucked to the nearest Class II or III landfill. Non-hazardous liquid wastes would consist primarily of domestic sewage and waste water streams such as: RO system reject water boiler blow down, and auxiliary cooling tower blow down. A septic tank and leach field system would be installed to manage domestic sewage. All other waste streams will be either recycled or sent to the evaporation pond.

a. Wastewater

The Blythe project would produce four primary wastewater streams:

- Non-reusable sanitary wastewater produced from administrative centers and operator stations.
- Non-reusable cooling tower blow down.
- Partially recyclable boiler blow down (to be used as cooling tower makeup).
- Reusable RO and demineralized reject water that would be sent to a High pH Reverse Osmosis(HERO) type system, or concentrated to minimize waste streams to the evaporation ponds.

Sanitary wastewater production is based on domestic water use. Maximum domestic water use is expected to be less than 332,000 gallons per month (11,000 gallons per day). It is anticipated that the wastewater would be consistent with domestic sanitary wastewater and would have biochemical oxygen demand and total suspended solids in the range of 150 to 250 mg/L.

b. Wastewater Treatment

Sanitary wastes would be collected for treatment in septic tanks and disposed via leach fields located at the four power blocks as well as at the administration area. Smaller septic systems would be provided for the control room buildings to receive sanitary wastes at those locations. Based on the current estimate of 11,000 gallons of sanitary wastewater production per day for the entire site, a total leach field area of approximately 22,000 square feet would be required spread out among several locations.

The three plant waste water streams, auxiliary wet cooling tower blow down, boiler blow down, and RO/ Demineralizer water rejects will be recycled as much as possible to the HERO system for recovery. The HERO system will recover 70% or more (depending on water quality) of this waste stream and will significantly limit the size of the required evaporation pond(s). Some waste water sources such as cooling tower blow down or boiler blow down in certain cases may not be recoverable in the HERO system and would be sent directly to the evaporation pond(s).

The waste water treatment system will require two 4-acre evaporation ponds per power block. Two ponds were selected for reliability. The plant will operate on one pond for approximately 24 months, and then switch to the second pond.

Approximately 18 months is required for one pond to evaporate and be ready for use again. If a pond requires maintenance or solids removal, the plant can still operate with the other pond. The evaporation ponds will be double-lined and covered with narrow-mesh netting to prevent access by ravens and migratory birds in accordance with applicable regulations.

c. Construction Wastewater

Sanitary wastes produced during construction would be held in chemical toilets and transported offsite for disposal by a commercial chemical toilet service. Any other hazardous wastewater produced during construction such as equipment rinse water would be collected by the construction contractor in Baker tanks and transported off site for disposal in a manner consistent with applicable regulatory requirements.

d. On-Site Land Treatment Unit

The four solar fields to be installed at the project would require LTUs to bioremediate or land farm soil contaminated from releases of HTF. Each LTU would be designed in accordance with Colorado River Basin Regional Water Quality Control Board (RWQCB) requirements and is expected to comprise an area of about four acres per solar plant or 16 acres total. The bioremediation facility would utilize indigenous bacteria to metabolize hydrocarbons contained in non-hazardous HTF contaminated soil. A combination of nutrients, water, and aeration facilitates the bacterial activity where microbes restore contaminated soil within two to four months. The California Department of Toxic Substances Control (DTSC) has determined for a similar thermal solar power plant that soil contaminated with up to 10,000 mg/kg of HTF is classified as a non-hazardous waste. However, the DTSC has further indicated that site-specific data would be required to provide a classification of the waste. Soil contaminated with HTF levels of between 100 and 1,000 mg/kg would be land farmed at the LTU, meaning that the soil would be aerated but no nutrients would be added.

9. Other Hazardous and Non-Hazardous Solid and Liquid Waste

Non-hazardous solid wastes may be generated by construction, operation, and maintenance of the project which are typical of power generation facilities. These wastes may include scrap metal, plastic, insulation material, glass, paper, empty containers, and other solid wastes. Disposal of these wastes would be accomplished by contracted solid refuse collection and recycling services.

Limited hazardous wastes would be generated during construction and operation. During construction, these wastes may include substances such as paint and paint-related wastes (e.g., primer, paint thinner, and other solvents), equipment cleaning wastes and spent batteries. During project operation, these wastes may include used oils, hydraulic fluids, greases, filters, spent cleaning solutions, spent batteries, and spent activated carbon. Both construction and operation-phase hazardous waste would be recycled and reused to the maximum extent possible. All wastes that cannot be recycled and any waste remaining after recycling would be disposed of in accordance with all applicable laws, ordinances, regulations and standards (LORS).

10. Hazardous Materials Management

There would be a variety of hazardous materials used and stored during construction and operation of the project. Hazardous materials that would be used during construction include gasoline, diesel fuel, oil, lubricants, and small quantities of solvents and paints. All hazardous materials used during construction and operation would be stored onsite in storage tanks/vessels/containers that are specifically designed for the characteristics of the materials to be stored; as appropriate, the storage facilities would include the needed secondary containment in case of tank/vessel failure. Aboveground carbon steel tanks (300 gallons) also would be used to store diesel fuel at each power block. Secondary containment would be provided for these tanks.

11. Fire Protection

Fire protection systems are provided to limit personnel injury, property loss, and project downtime resulting from a fire. The systems include a fire protection water system, foam generators, carbon dioxide fire protection systems, and portable fire extinguishers. The location of the project is such that it would fall under the jurisdiction of the Riverside County Fire Department.

Firewater would be supplied from the one million-gallon clarified water storage tanks located at each of the four power blocks on the site. One electric and one diesel-fueled backup firewater pump, each with a capacity of 5,000 gpm, would deliver water to the fire protection piping network.

The piping network would be configured in a loop so that a piping failure can be quickly isolated with shutoff valves without interrupting water supply to other

areas in the loop. Fire hydrants would be placed at intervals throughout the project site that would be supplied with water from the supply loop. The water supply loop would also supply firewater to a sprinkler deluge system at each unit transformer, HTF expansion tank and circulating pump area and sprinkler systems at the steam turbine generator and in the administration building. Fire protection for each solar field would be provided by zoned isolation of the HTF lines in the event of a rupture that results in a fire.

12. Telecommunications and Telemetry

The project would have telecommunications service from Frontier Communications, the telecommunications service provider for the city of Blythe. Voice and data communications would be provided by a new twisted pair telecommunications cable. The routing for this cable will follow the routing of the redundant telecommunications line from the project to Southern California Edison's (SCE) proposed Colorado River Substation. The routing for both of these lines will be adjacent to Black Rock Road, and the site access road. Wireless telecom equipment will be used to support communication with staff dispersed throughout the project site. The project would utilize electronic telemetry systems to control equipment and facilities operations over the site.

13. Lighting System

The project's lighting system would provide operations and maintenance personnel with illumination in normal and emergency conditions. AC lighting would be the primary form of illumination, but DC lighting would be included for activities or emergency egress required during an outage of the plant's AC system.

14. HTF Leak Detection

Leak detection of HTF would be accomplished in various ways. Visual inspection throughout the solar field on a daily basis would detect leaks occurring at ball joints or other connections. Additionally, the configuration of the looped system allows different sections of the loops to be isolated. Isolation valves will be installed such that each HTF loop sections can be contained in the unlikely event of a major rupture in the HTF piping.

Detection of large leaks is being proposed by using remote pressure sensing equipment and remotely actuated valves to allow for isolation of large sections of the large-bore header piping in the solar field.

15. Water Storage Tanks

In each power block there would be two major covered water tanks: one 1,000,000 gallon Service/Fire Water storage tank and one 120,000 gallon Demineralized Water storage tank. A much smaller RO Reject water tank would also be provided. Several other small water system surge tanks will also be installed in between various steps in the water treatment process.

16. Roads, Fencing, and Security

Access to the Blythe project site would be via a new public road heading north from the frontage road. This road would be accessed from an improved section of Black Rock Road, along I-10, from the plant access road to the Airport/Mesa Drive exit.

Only a small portion of the overall project site would be paved, primarily the site access road, the service roads to the power blocks, and portions of the power blocks (paved parking lot and roads encircling the STG and SSG areas). The remaining portions of each power block would be gravel surfaced. In total, each power block area would be approximately 18.4 acres each, with approximately six acres of paved area. The solar fields would remain unpaved and without a gravel surface in order to prevent rock damage from mirror wash vehicle traffic; an approved dust suppression coating would be used on the dirt roadways within and around the solar fields. Roads and parking areas located within the power block areas and adjacent to the administration building and warehouses would be paved with asphalt.

The project solar fields and support facilities' perimeter would be secured with a combination of chain link and wind fencing. Chain link metal fabric security fencing consists of eight-foot tall fencing with one-foot barbed wire or razor wire on top along the north and south sides of the facilities. Thirty-foot tall wind fencing, comprised of A-frames and wire mesh, would be installed along the east and west sides of each solar field. Desert Tortoise exclusion fencing would be included. Controlled access gates would be located at the site entrance.

17. Drainage and Earthwork

The existing topographic conditions of the project site show an average slope of approximately one foot in 67 feet (1.50%) toward the east on the west side of the site and approximately one foot in 200 feet (0.50%) toward the southeast on the east side of the site. The project site lies in the Palo Verde Mesa east of the McCoy Mountains. The general stormwater flow pattern is from the higher elevations in the mountains located three miles west of the site to the lower elevations in the McCoy

Drainage will be constructed in two phases: Phase One accommodates the necessary drainage for the construction of Units 1 & 2, and Phase Two the drainage plan for the entire four unit facility. Arizona crossings would be employed to provide adequate drainage across the access road into the site. Phase Two will implement the fully constructed drainage plan for the entire facility.

18. Construction

Project construction is expected to occur over a total of 69 months. Project construction would require an average of 604 employees over the entire 69-month construction period, with manpower requirements peaking at approximately 1,004 workers in Month 16 of construction. The construction workforce would consist of a range of laborers, craftsmen, supervisory personnel, support personnel, and management personnel.

Temporary construction parking areas would be provided within the project site adjacent to the laydown area. The plant laydown area would be utilized throughout the build out of the four solar units. The construction sequence for power plant construction includes the following general steps:

- *Site Preparation:* this includes detailed construction surveys, mobilization of construction staff, grading, and preparation of drainage features. Grading for the solar fields, power blocks, and drainage channels would be completed during the first 55-months of the construction schedule (i.e., the grading schedule for the site has been spread to cover the total construction period).

- *Linears:* this includes the site access road, telecommunication line, natural gas pipeline, and transmission line. The site access road and telecommunication line for Unit #1 would be constructed during the first nine months of the construction schedule in conjunction with plant site preparation activities. The natural gas pipeline, electric transmission lines, and

telecommunications lines would be constructed during the first 18 months of the construction schedule.

- *Foundations:* this includes excavations for large equipment (STG, SSG, GSU, etc.), footings for the solar field, and ancillary foundations in the power block.

- *Major Equipment Installation:* once the foundations are complete, the larger equipment would be installed. The solar field components would be assembled in an onsite erection facility and installed on their foundations.

a. Construction Water

Construction water requirements cover all construction related activities including:

- Dust control for areas experiencing construction work as well as mobilization and demobilization,

- Dust control for roadways,
- Water for grading activities associated with both cut and fill work,
- Water for soil compaction in the utility and infrastructure trenches,
- Water for soil compaction of the site grading activities,
- Water for stockpile sites,
- Water for the various building pads,
- Water for concrete pours on site, and
- Concrete batch plant operations.

The average water use for the project's construction is estimated to be about 645,000 gallons per calendar day. Total water use for the duration of project construction is estimated to be about 4,100 acre feet. Construction water would be sourced from onsite wells. Potable water during construction would be brought on site in trucks and held in day tanks.

b. Concrete Batch Plant

With the estimated concrete volume of approximately 125,000 cubic yards per solar plant, an onsite batch plant would be utilized to provide concrete for the solar fields and power block foundations and pads. The batch plant would have a production capacity of 150 cubic yards per hour and operate 10 hours per day, five days a week. Night operation of the batch plant will likely be required to overcome the difficulty of performing concrete placement in extremely high ambient temperatures. It would consist of a series of storage bins and piles,

conveyors, mixers, ice storage and chipper, and would include a 75 kW power supply (with diesel generator if needed) and provision for dust control. Concrete would be transported from the batch plant to the placement area via a fleet of eight concrete trucks. The batch plant would be movable and would be deployed to the current area of work at the power blocks or main warehouse area.

c. Fuel Depot

A fuel depot would be constructed to refuel, maintain, and wash construction vehicles, and would occupy an area of approximately 75 feet x 150 feet. It would consist of a fuel farm with two 2000-gallon on-road vehicle diesel tanks, two 8,000-gallon off-road vehicle diesel tanks, one 500-gallon gasoline tank, and a wash water holding tank. The fuel farm would include secondary spill containment, a covered maintenance area, also with secondary containment, and a concrete pad for washing vehicles.

d. Construction Power

Construction power will be provided to the site from the SCE12.47 kV distribution line routed to the site from SCE's distribution poles one mile east of BSPP at the corner of Sixth Avenue and Davis St. The project will include construction of a 12.47 kV internal distribution system and step down transformers to provide power as needed for construction operations.

19. Operation and Maintenance

While electrical power is to be generated only during daylight hours, BSPP would be staffed 24 hours a day, seven days per week. A total estimated workforce of 221 full time employees would be needed with all four units operating.

20. Natural Gas Pipeline Construction

A new four-inch diameter, 9.8-mile long natural gas pipeline would be constructed to connect the Blythe project to an existing SCG pipeline situated south of I-10.

Approximately eight miles of the pipeline would be within the plant site boundary and two miles outside the plant site boundary. The line would be buried with a minimum three feet of cover depending on location. The gas line route takes off from an existing SCG line 1,800 feet south of I-10. The alignment of the pipeline is directly north to the project site.

Construction of the gas pipeline would be built to SCG standards and is anticipated to take three to six months.

21. Transmission System

The BSPP facility would be connected to the SCE transmission system at the new Colorado River substation planned by SCE southwest of the Blythe project site. The proposed 10-mile generator-tie line would consist of a new bundled double circuit 230 kV line.

a. Transmission Line Route

The gen-tie line is expected to proceed directly south from the project site, eventually both crossing I-10 and turning westward to SCE's planned Colorado River substation.

The BSPP gen-tie will terminate into the substation on a breaker in the north of the substation site plan. The exact location of the breaker assigned to BSPP is included in the Phase Two Study for the Transition Cluster from CAISO.

22. Decommissioning and Restoration

The planned operational life of the project is 30 years, but the facility conceivably could operate for a longer or shorter period depending on economic or other circumstances.

The procedures provided in the decommissioning plan would be developed to ensure compliance with applicable LORS, and to ensure public health and safety and protection of the environment. The Decommissioning Plan would be submitted to the CEC and BLM for review and approval prior to a planned closure.

FINDINGS OF FACT

Based upon the evidentiary record, we find as follows:

1. Palo Verde Solar, LLC. will own and operate the Blythe Solar Power Project (BSPP or Project), which will be located on approximately 7043 acres of public land administered by the BLM, in Riverside County 8 miles east of Blythe, California.

2. The Project will have a nominal capacity rating of 1000 MW.

3. The Project site arrangement generally consists of 4 adjacent, independent and identical units of solar parabolic troughs, each with a nominal generating capacity of 250 MW.

4. The project is dry-cooled and will consume no more than 600 acre feet per year of groundwater, primarily for mirror washing, feed water makeup, fire water supply, onsite domestic use, and cooling water for auxiliary equipment and heat rejection.

5. The project will interconnect to the proposed SCE Colorado River Substation via a 10-mile 230-kV transmission line. That substation is the first point of connection for BSPP.

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

CONCLUSION OF LAW

1. The Blythe Solar Power Project is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren- Alquist Act and the California Environmental Quality Act.

II. PROJECT ALTERNATIVES

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

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

Since the proposed project site is on US Bureau of Land Management (BLM) property, the Blythe Solar Power Project (BSPP) is subject to review under the National Environmental Policy Act (NEPA) in addition to CEQA. The purpose of this alternatives analysis is to comply with State and Federal environmental laws by providing a reasonable range of alternatives which, under CEQA, could substantially reduce or avoid any potentially significant adverse impacts of the proposed project, or under NEPA, would inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.

The applicant provided an alternatives analysis in the Application for Certification (AFC), describing the site selection process and project configuration in light of project objectives. (Ex. 1 pp. 4-1 to 4-13.) Staff included a similar alternatives analysis in the Revised Staff Assessment (RSA), as summarized below.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Energy Commission staff used the following methodology to analyze project alternatives for the BSPP:

- Develop an understanding of the Project, identify the basic objectives of the Project, and describe its potentially significant adverse impacts.
- Under CEQA, identify and evaluate technology alternatives to the Project such as increased energy efficiency (or demand-side management) and

the use of alternative generation technologies (e.g., solar or other renewable or nonrenewable technologies).

- Under CEQA, identify and evaluate alternative locations.
- Under CEQA, evaluate potential alternatives to select those qualified for detailed evaluation.
- Under NEPA, explore and evaluate all reasonable alternatives, and of those reasonable alternatives, identify those that would avoid or minimize adverse impacts or enhance the quality of the human environment.
- Evaluate the impacts of not constructing the Project, known as the No Project Alternative under CEQA and the No Action alternative under NEPA.

Based on the noted methodology, each potential alternative was evaluated according to the following criteria for its ability to:

- For CEQA purposes, avoid or substantially lessen one or more of the potential significant impacts of the Project.
- For CEQA purposes, meet most of the Project objectives.
- For CEQA purposes, not create unmitigable significant impacts of its own.
- For NEPA purposes, be consistent with the BLM's purpose and need, which may or may not result in Project approval. (Ex. 200; pp. B.2-7 and B.2-8.)

Elsewhere in this Decision, we have determined that the proposed project has the potential to cause adverse impacts which cannot be fully mitigated to Cultural and Visual Resources, in Land Use, and in Traffic and Transportation. We therefore confine our analysis here to the alternatives' potential to reduce or eliminate those impacts. In all other areas, impacts either do not exist or will be reduced to below a level of significance through implementation of the Conditions of Certification.

1. Project Objectives

Based on consideration of objectives proposed by the Project applicant, the following Project objectives were identified by Staff to evaluate the viability of alternatives in accordance with CEQA requirements:

- Construct a utility-scale solar energy project of up to 1,000 MW and interconnect directly to the CAISO Grid while minimizing additions to electrical infrastructure.
- Locate the facility in areas of high solar insolation.

Furthermore, when considering retention or elimination of alternative renewable technologies, in addition to evaluating the likelihood of reducing or eliminating the potential impacts of the BSPP at its proposed site, Staff evaluated whether alternative technologies could meet the following key Project objectives:

- Provide clean, renewable electricity and support Southern California Edison (SCE) in meeting its obligations under California's Renewable Portfolio Standard Program (RPS).
- Assist SCE in reducing its greenhouse gas emissions as required by the California Global Warming Solutions Act.
- Contribute to the achievement of the 33 percent renewables RPS target set by California's governor and legislature.
- Complete the review process in a timeframe that would allow the applicant to start construction or meet the economic performance guidelines by December 31, 2010 to potentially qualify for the 2009 American Recovery and Reinvestment Act (ARRA) cash grant in lieu of tax credits for certain renewable energy projects. (Ex. 200; pp. B.2-8 and B.2-9.)

2. Alternatives Evaluated Under CEQA and NEPA

22 alternatives to the proposed BSPP were developed and evaluated. Of these scenarios, two alternatives were determined to be both reasonable for the BLM and feasible for the Energy Commission: the Reconfigured Alternative and the Reduced Acreage Alternative. These alternatives are discussed below along with the No Project/No Action Alternative.

In addition to the CEQA and NEPA alternatives noted above, one CEQA-only alternative, Alternative Site, and three NEPA-only No Action/Plan Amendment scenarios are outlined below, along with other potential generation technology alternatives. Additional discussion of the noted alternatives and related scenarios, as well as the remaining alternatives considered but not evaluated in detail, is provided in Section B.2 of the RSA, Ex. 200.

a. Reconfigured Alternative

The Reconfigured Alternative would encompass a 1,000 MW solar facility with four separate 250 MW solar plants (units), similar to the proposed Project. Under this alternative, the two northern and the southeastern units (Units 1, 2, and 4) would remain at their proposed locations, while the southwestern unit (Unit 3) would be relocated approximately 0.8 mile south of its proposed location. (Ex.

200; **Alternatives Figure 1**.) Approximately 480 acres of the Reconfigured Alternative (a portion of Unit 3) would be located outside of the current ROW application area, although the site would remain entirely within BLM managed lands (with a slight increase in the overall ROW acreage). The Reconfigured Alternative would transmit power through the Colorado River Substation, and would require essentially the same infrastructure as the proposed Project. Under this alternative, a modified ROW grant would be required, and the California Desert Area Conservation Area (CDCA) Plan would be amended to include the applicant's BSPP generation facilities and transmission line as an approved site under the Plan.

A summary comparison of potential impacts for this alternative (and other applicable scenarios) and the proposed Project is provided in **Table 1**.

We find that the Reconfigured Alternative would not reduce or eliminate the potentially unmitigable impacts we have identified in Cultural and Visual Resources, Land Use or Traffic and Transportation. Cultural Resources cumulative impacts would be expected to be the same as for the proposed project because it will still result in the unearthing, covering, and/or destruction of resources, the nature and extent of which will only be determined as construction proceeds. Visual Resources impacts would still be unmitigable at some KOPs. (Ex. 200, p. C.12-28.) The Reconfigured Alternative would still remove some 6000 acres of open space and thus have a cumulatively considerable impact on Land Use. (Ex. 200, pp. C.6-16 to C.6-21.) It would also still have the potential for glint and glare impacts to aviation, which are incompatible with applicable LORs. It cannot be stated with certainty that these transportation impacts can be mitigated below a level of significance.

b. Reduced Acreage Alternative

The Reduced Acreage Alternative would involve a 750 MW solar facility, with Units 1, 2 and 4 of the proposed Project retained, and Unit 3 not constructed. This alternative would be located entirely within the proposed Project ROW identified by the applicant, with a disturbance area of approximately 4,750 acres.

Alternatives Table 1
Comparison of Impacts Between the Proposed BSPP Project and Evaluated Alternatives

Issue Area	Reconfigured Alternative	Reduced Acreage Alternative	Blythe Mesa Alternative
Environmental Assessment			
Air Quality	Similar	Similar	Similar

Biological Resources	Preferred	Preferred	Preferred[1]
Cultural Resources	Similar	Similar	Preferred[1]
Hazardous Materials	Similar	Similar	Less Preferred
Land Use	Similar	Similar	Preferred[2]

Alternatives Table 1
Comparison of Impacts Between the Proposed BSPP Project and Evaluated Alternatives

Issue Area	Reconfigured Alternative	Reduced Acreage Alternative	Blythe Mesa Alternative
Environmental Assessment			
Noise & Vibration	Similar	Similar	Less Preferred
Public Health & Safety	Similar	Similar	Similar
Socioeconomics	Similar	Similar	Similar
Soil & Water	Similar	Preferred[3]	Preferred
Traffic & Transportation	Similar	Similar	Similar[4]
Transmission Line Safety & Nuisance	Similar	Similar	Similar
Visual Resources	Similar	Similar	Less Preferred
Waste Management	Similar	Similar	Similar
Worker Safety & Fire Protection	Similar	Similar	Similar
Engineering Assessment			
Facility Design	Similar	Similar	Similar
Geology, Paleontology & Minerals	Similar	Similar	Similar
Power Plant Efficiency	Similar	Similar	Similar
Power Plant Reliability	Similar	Similar	Similar
Transmission System Engineering	Similar	Preferred	Similar

[1] Likely preferred due to the generally disturbed nature of the site, although site-specific surveys would be required to confirm.

[2] Preferred for all related issues except recreation, for which this alternative is less preferred.

[3] Preferred for groundwater budget and level considerations, similar for all other concerns.

[4] Similar for all considerations except glare, for which this alternative is less preferred.

(Ex. 200; **Alternatives Figure 2**.) The Reduced Acreage Alternative would include similar facilities for Units 1, 2, and 4 as described for the proposed Project, including the power block, water treatment system, water storage tanks, and administration, control, warehouse, maintenance, and lab buildings. The Reduced Acreage Alternative would transmit power through the planned Colorado River Substation and would require essentially the same off-site infrastructure as the proposed Project, although fewer on-site facilities would be required (e.g., transformers, collector distribution feeders, and other electrical components). (Ex. 200; p. D.5-10.) Under this alternative a ROW grant for the appropriate acreage would be issued, and the CDCA Plan would be amended to include the applicant's BSPP generation facilities and transmission line as an approved site under the Plan.

We find that the Reduced Acreage Alternative would not materially reduce or eliminate the potentially unmitigable impacts we have identified in Cultural and Visual Resources, Land Use or Traffic and Transportation. Even if Cultural Resources impacts were reduced by 25% due to the smaller footprint, a reduction of that size for this project would not materially affect overall cumulative cultural resources impacts from the cumulative projects. Visual Resources impacts would still be unmitigable at some KOPs. (Ex. 200, p. C.12-29.) The Reconfigured Alternative would remove some 1000 fewer acres of open space with a commensurate reduction of impacts, but that reduction for this project would not materially affect overall cumulative impacts on Land Use. (Ex. 200, pp. C.6-16 to C.6-21.) The Reduced Acreage Alternative would still have the potential for glint and glare impacts to aviation, which are incompatible with applicable LORs. It cannot be stated with certainty that these transportation impacts can be mitigated below a level of significance.

3. No Project/No Action Alternative

CEQA No Project Alternative. The No Project Alternative under CEQA defines the scenario that would exist if the proposed BSPP were not constructed. The CEQA Guidelines state that "the purpose of describing and analyzing a 'no project' alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" (Cal. Code Regs., tit. 14 § 15126.6(i)). The No Project analysis considers existing conditions and "what would be reasonably expected to occur in the foreseeable future if the project were not approved…" (Cal. Code Regs, tit. 14 § 15126.6(e) (2)). If the No Project Alternative were selected, the construction and operational impacts of the BSPP would not occur, and there would be no related grading, loss of resources, disturbance of desert habitat, or installation of power generation/transmission facilities. The No Project Alternative would also eliminate contributions to cumulative impacts on a number of resources and environmental parameters in Riverside County and the Mojave Desert. In the absence of the BSPP, however, other power plants, both renewable and non-renewable, may be proposed and constructed on this site or the surrounding desert region constructed to serve the demand for electricity and to meet RPS criteria. The impacts of these other facilities may be similar to those of the proposed Project because these technologies require large amounts of land, similar to the BSPP. The No Project Alternative may also lead to siting of other non-solar renewable technologies to help achieve the California RPS. Additionally, if the No Project Alternative were chosen, additional gas-fired power plants may be built, or

existing gas-fired plants may operate longer. If the proposed Project were not built, California would not benefit from the reduction in greenhouse gases that this facility would provide, and California utilities would not receive the 1,000 MW contribution to its renewable state-mandated energy portfolio. (Ex. 200; p. B.2-15.)

NEPA No Action Alternative. Under NEPA, the No Action Alternative is used as a benchmark of existing conditions by which the public and decision makers can compare the environmental effects of the proposed action and the alternatives. Under the No Action Alternative, the impacts of the BSPP would not occur with similar benefits and consequences as described above for the CEQA No Project Alternative. As previously noted, three NEPA-related No Action/Plan Amendment scenarios are also considered in this analysis, with these alternative options described below under Item 4 (Alternatives Evaluated under NEPA Only). (Ex. 200; pp. B.2-15 and B.2-16.)

4. Alternative Evaluated Under CEQA Only (Alternative Site)

One alternative site was retained for evaluation by the Energy Commission, the Blythe Mesa Alternative, situated on three separate areas of disturbed agricultural areas located several miles east and northeast of the area proposed for the BSPP project. (Ex. 200, p. B-2.20.) This alternative is subject to evaluation under CEQA only, as it is located on private land and the BLM would have no discretionary approval authority (with evaluation under NEPA therefore not appropriate). The Energy Commission does not have the authority to approve an alternative or require the applicant to move the proposed project to another location, even if it identifies an alternative site that meets the project objectives and avoids or substantially lessens one or more of the significant effects of the project. Accordingly, implementation of an alternative site would require that the applicant submit a new AFC, including revised engineering and environmental analyses.

The Blythe Mesa Alternative would include a 1,000 MW solar facility on three non-contiguous areas totaling approximately 6,200 acres. (Ex. 200; **Alternatives Figure 3**.) The three noted areas are located generally east of the proposed Project site, and encompass 152 separate parcels with 43 individual land owners. Approximately 5,700 acres of the described area would be used for solar facilities, with roughly 400 acres of existing date palm orchards and several scattered existing residential sites to be avoided. Because this alternative would not be on contiguous parcels, additional major equipment, transmission lines and

substations, would be required (relative to the proposed Project and CEQA/NEPA alternatives), increasing the overall costs. Portions of two railroad lines (Arizona & California Railroad Company [ARZC]; and Atchison, Topeka and Santa Fe) cross two of the three areas comprising this site, with the ARZC track not in active service (Ex. 200; **Alternatives Figure 3**, and p.B.2-21.) The Blythe Mesa Alternative would potentially require more than one transmission interconnection, with all such interconnections to extend south for approximately 10 to 12 miles to the planned Colorado River Substation. The Blythe Mesa Alternative is potentially feasible and meets all but one of the Project objectives. Specifically, due to the required acquisition of numerous private parcels, it would likely not meet the objective of completing the CEQA/NEPA permitting process in 2010 to allow ARRA funding if the project is approved.

5. Alternatives Evaluated under NEPA Only

The BLM is considering two separate actions related to the BSPP, whether to approve a CDCA Plan amendment and whether to approve the proposed Project or an alternative. The BLM "action alternative" would therefore be to amend the CDCA Plan to include the BSPP and to approve the proposed Project as proposed (or an alternative). The BLM may also consider three potential options related to the No Action Alternative and amending the CDCA Plan, as follows:

- **No Action on Project but amend the CDCA Plan to make the area available for future renewable development.** Under this scenario, the BSPP would not be approved (Project denied), no ROW grant would be issued, and the CDCA Plan would be amended to make the Project area available for future large-scale renewable energy development.

- **No Action on Project and amend the CDCA Plan to make the area unavailable for future renewable development.** Under this scenario, the BSPP would not be not approved (Project denied), no ROW grant would be issued, and the CDCA Plan would be amended to make the Project area unavailable for future large-scale renewable energy development.
- **No Action on Project application or CDCA Plan amendment**. Under this scenario, the BSPP would not be approved (Project denied), no ROW grant would be issued, and no CDCA Plan amendment would be approved (with no consideration of a CDCA Plan amendment that would make the Project area available for future large-scale energy development). (Ex. 200; pp. B.2-15 and B.2-16.)

6. Other Generation Technology Alternatives

Solar Alternatives. Several alternative solar thermal technologies were also evaluated, including Stirling engine systems, solar power towers, linear Fresnel facilities, and utility-scale and distributed generation photovoltaic (PV) systems. The record contains an exhaustive analysis and discussion of these alternative technologies, which we briefly summarize here. (Ex. 200, pp. B.2-54 to B.2-66.) While all of these technologies are considered potentially feasible and would meet most or all of the Project objectives, none would eliminate significant impacts identified for the BSPP. Specifically, the Stirling engine system and solar power tower options would require larger surface areas than the proposed Project, with associated greater impact potential. The linear Fresnel system has the potential to result in fewer impacts than the BSPP due to more compact configuration, although the technology is proprietary and not currently available to other developers. Based on these and other factors, the described alternative solar thermal technologies were eliminated from further consideration (Ex. 200; pp. B.2-54 to B.2-62.)

A utility-scale PV system would encompass variable size requirements (3,000 to 10,000 acres), would include larger and bulkier facilities (and greater costs) than the BSPP, and would require additional policy support and greater manufacturing capacity than currently exists. A distributed generation solar photovoltaic (PV) alternative, if constructed for a total of 1,000 MW, would meet the objective of a utility-scale solar energy project of up to 1,000 MW and interconnection directly to the CAISO Grid while minimizing additions to electrical infrastructure. It would not necessarily meet the objective of locating the facility in areas of high solar insolation, because the distributed solar PV would be located throughout the region. While it very likely will be possible to achieve 1,000 MW of distributed solar PV over the coming years, the very limited numbers of existing facilties makes it difficult to conclude with confidence that it will happen within the 2010 timeframe project objective. The record describes several challenges to accelerated development of PV. (Ex.200 p.B.2-62 through B.2-66.)

Wind, Geothermal, and Biomass Alternatives. Other generation technologies were also examined as possible alternatives to the proposed BSPP, including wind, in the Riverside County region, geothermal in the Imperial Valley, and biomass in general. As with alternative solar technologies, the record contains an exhaustive analysis and discussion of these alternative technologies, which we briefly summarize here. (Ex. 200, pp. B.2-66 to B.2-77.) These technologies have site-specific land area or resource limitations, and/or presented potentially

significant environmental impacts. For example, the record presents a Commission staff analysis of the feasibility for developing 1,000 MW of wind energy in Riverside County's San Gorgonio Pass area. There is little remaining land for expansion beyond the already existing wind farms. Because there is little room for expansion, the wind industry has been replacing the older turbines in the region with new, larger turbines which require less maintenance. Birds, particularly raptors, and bats collide with wind turbines which can be a significant impact, depending on the birds' use of the area, bat flight patterns, and turbine placement. Visual impacts of wind turbines can be significant and installation in scenic and high traffic areas can result in strong local opposition.

Geothermal facilities must be built near the geothermal reservoir areas because steam and hot water cannot be transported without substantial thermal energy loss. Geothermal power plants are currently operating in Lake, Sonoma, Inyo, Imperial, Inyo, Mono, and Lassen Counties. Being able to add 1,000 MW of new geothermal energy capacity in the timeframe of the project objective to complete the CEQA/NEPA permit process during 2010, seems quite speculative given the current fairly slow rate of geothermal project development. Approximately 10-15 smaller projects would be required to achieve 1,000 MW; numerous smaller plants would likely require more transmission lines and switchyards when compared to the BSPP.

Biomass projects generally have significant fuel requirements for reliability and the combustion options may have significant air quality impacts. Biomass facilities do not require the extensive amounts of land required by other renewable energy sources, but they generate much smaller amounts of electricity. (Ex. 200, pp. B.2-66 to B.2-77.) Accordingly, these technologies were eliminated from further consideration.

In addition to not meeting BSPP project objectives, the record indicates that contributions from each commercially available technology will be needed to meet SCE's RPS requirements and to meet our renewable energy and GHG policy goals as set forth in the Energy Commission's 2009 Integrated Energy Policy Report and elsewhere. Therefore, the combined contribution of the alternatives of other solar technologies, wind, geothermal, and biomass is needed to complement rather than substitute for the BSPP. (Ex.200, p.B.2-2).

FINDINGS OF FACT

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

1. The record contains an adequate review and analysis of a reasonable range of site location and generation alternatives to the Project as proposed.
2. The alternative site locations evaluated in the Record and in this Decision do not comprise a superior alternative in terms of feasibly meeting the Project objectives or reducing significant potential environmental impacts.
3. The alternative technologies analyzed by staff and referenced in this decision could not achieve all of the project objectives, including completion in time to meet the deadlines necessary to secure ARRA funding.
4. Meeting the state's and Southern California Edison's obligations to develop renewable energy will require contributions from all of the commercially available renewable technologies analyzed by staff, such that these technologies are best viewed as complementary strategies rather than as competing alternatives.
5. The evidence contains an adequate review and analysis of alternative generation technology.
6. The evidence contains an adequate review and analysis of the "No Project/No Action" alternative.
7. The "No Project/No Action" alternative is not a reasonable alternative or feasible alternative to the BSPP.

CONCLUSIONS OF LAW

1. The record contains a sufficient analysis of Alternatives, and complies with the requirements of CEQA, the Warren-Alquist Act, and their respective regulations.

No Conditions of Certification are required for this topic.

III. COMPLIANCE AND CLOSURE

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

SUMMARY OF THE EVIDENCE

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

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

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

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

The second general element of the Plan contains the specific “Conditions of Certification.” These are found following the summary and discussion of each individual topic area in this Decision. The individual Conditions contain the measures required to

mitigate potentially adverse Project impacts associated with construction, operation, and closure to levels of insignificance. Each Condition also includes a verification provision describing the method of assuring that the Condition has been satisfied.

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

FINDINGS OF FACT

The record establishes:

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

2. We adopt the following Compliance Plan as part of this Decision.

CONCLUSIONS OF LAW

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

2. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the Blythe Solar Power Project will be designed, constructed, operated, and closed in conformity with applicable law.

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

The following terms and definitions are used to establish when Conditions of Certification are implemented.

PRE-CONSTRUCTION SITE MOBILIZATION

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

CONSTRUCTION

Onsite work to install permanent equipment or structures for any facility.

Ground Disturbance

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

Grading, Boring, and Trenching

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

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

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

START OF COMMERCIAL OPERATION

For compliance monitoring purposes, "commercial operation" begins after the completion of start-up and commissioning, when the power plant has reached reliable steady-state production of electricity at the rated capacity. At the start of commercial

operation, plant control is usually transferred from the construction manager to the plant operations manager.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

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

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

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

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

CHIEF BUILDING OFFICIAL RESPONSIBILITIES

The Chief Building Official (CBO) shall serve as the Energy Commission's delegate to assure the project is designed and constructed in accordance with the Energy Commission's Decision including Conditions of Certification, California Building Standards Code, local building codes and applicable laws, ordinances, regulations and standards to ensure health and safety. The CBO is typically made-up of a team of specialists covering civil, structural, mechanical and electrical disciplines whose duties include the following:

1. Performing design review and plan checks of all drawings, specifications and procedures;
2. Conducting construction inspection;
3. Functioning as the Energy Commission's delegate including reporting noncompliance issues or violations to the CPM for action and taking any action allowed under the California Code of Regulations, including issuing a Stop Work Order, to ensure compliance;
4. Exercising access as needed to all project owner construction records, construction and inspection procedures, test equipment and test results; and

5. Providing weekly reports on the status of construction to the CPM.

PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

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

ENERGY COMMISSION RECORD

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

- All documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;
- All monthly and annual compliance reports filed by the project owner;
- All complaints of noncompliance filed with the Energy Commission; and
- All petitions/requests for project or condition of certification changes and the resulting Energy Commission action.

PROJECT OWNER RESPONSIBILITIES

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

COMPLIANCE MITIGATION MEASURES/CONDITIONS OF CERTIFICATION

UNRESTRICTED ACCESS (COMPLIANCE-1)

The CPM, responsible Energy Commission staff, and delegated agencies or consultants shall be guaranteed and granted unrestricted access to the power plant site, related facilities, project-related staff, and the records maintained on-site for the purpose of conducting audits, surveys, inspections, or general site visits. Although the CPM will

normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time.

COMPLIANCE RECORD (COMPLIANCE-2)

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

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

COMPLIANCE VERIFICATION SUBMITTALS (COMPLIANCE-3)

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

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

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

Verification lead times associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification.

A cover letter from the project owner or authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. **The cover letter subject line shall identify the project by AFC number, the appropriate condition(s) of certification by condition number(s), and a brief description of the subject of the submittal**. The project owner shall also identify those submittals **not** required by a condition of certification with a statement such as: "This submittal is for information only and is not required by a specific condition of certification." When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and CEC submittal number.

The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed by the project owner or an agent of the project owner.

All hardcopy submittals shall be addressed as follows:

Mary Dyas
09-AFC-6C
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

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

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

PRE-CONSTRUCTION MATRIX AND TASKS PRIOR TO START OF CONSTRUCTION (COMPLIANCE-4)

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

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

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

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

Compliance Reporting

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

of certification require that compliance submittals be submitted to the CPM in the monthly or annual compliance reports.

COMPLIANCE MATRIX (COMPLIANCE-5)

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

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

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

MONTHLY COMPLIANCE REPORT (COMPLIANCE-6)

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

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and an electronic searchable version of the Monthly Compliance Report within 10 working days after the end of each reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported. The reports shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, as well as the conditions they satisfy and submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix showing the status of all conditions of certification;

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

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

ANNUAL COMPLIANCE REPORT (COMPLIANCE-7)

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

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

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

CONFIDENTIAL INFORMATION (COMPLIANCE-8)

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

REPORTING OF COMPLAINTS, NOTICES, AND CITATIONS (COMPLIANCE-9)

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

Any changes to the telephone number shall be submitted immediately to the CPM, who will update the web page.

In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies to the CPM of all complaint forms, including noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations within 10 days of receipt. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the **NOISE** conditions of certification. All other complaints shall be recorded on the complaint form (Attachment A).

FACILITY CLOSURE

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

pertaining to facility closure are identified in the sections dealing with each technical area. Facility closure will be consistent with LORS in effect at the time of closure.

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

CLOSURE DEFINITIONS

Planned Closure

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

Unplanned Temporary Closure

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

Unplanned Permanent Closure

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

CLOSURE DEFINITIONS

Planned Closure

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

Unplanned Temporary Closure

An unplanned temporary closure occurs when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency. Short-term is defined as cessation of construction activities or operations of a power plant for a period less than 6-months long. Cessation of construction of operations for a period longer than 6 months in considered a permanent closure.

Unplanned Permanent Closure

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

COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

PLANNED CLOSURE (COMPLIANCE-10)

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least 12 months (or other period of time agreed to by the CPM) prior to the commencement of closure activities. The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

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

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

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

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

UNPLANNED TEMPORARY CLOSURE/ON-SITE CONTINGENCY PLAN (COMPLIANCE-11)

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

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

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

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

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

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

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

UNPLANNED PERMANENT CLOSURE/ON-SITE CONTINGENCY PLAN (COMPLIANCE-12)

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

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

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

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

POST CERTIFICATION CHANGES TO BLM'S ROW GRANT AND/OR THE ENERGY COMMISSION DECISION: AMENDMENTS, OWNERSHIP CHANGES, STAFF APPROVED PROJECT MODIFICATIONS AND VERIFICATION CHANGES (COMPLIANCE-13)

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

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

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

Amendment

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

Change of Ownership

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

Staff Approved Project Modification

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

Verification Change

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

CBO DELEGATION AND AGENCY COOPERATION

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

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

ENFORCEMENT

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

the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors the Energy Commission may consider.

ENERGY COMMISSION NONCOMPLIANCE COMPLAINT PROCEDURES

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

Informal Dispute Resolution Process

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

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

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

Request for Informal Investigation

Any individual, group, or agency may request the Energy Commission to conduct an informal investigation of alleged noncompliance with the Energy Commission's terms and conditions of certification. All requests for informal investigations shall be made to the designated CPM.

Upon receipt of a request for an informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter. Within seven working days of the CPM's request, provide a written report to the CPM of the results of the investigation, including corrective measures proposed or undertaken. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to also provide an initial verbal report, within 48 hours.

Request for Informal Meeting

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

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;
3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner;
4. After the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum that fairly and accurately identifies the positions of all parties and any understandings reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230, et. seq.

Formal Dispute Resolution Procedure-Complaints and Investigations

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

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

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

COMPLIANCE TABLE 1
SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION

CONDITION NUMBER	*SUBJECT*	*DESCRIPTION*
COMPLIANCE-1	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COMPLIANCE-2	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COMPLIANCE-3	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed or the project owner or his agent.
COMPLIANCE-4	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until the all of the following activities/submittals have been completed: • property owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns, • a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction, • all pre-construction conditions have been complied with, ▪ the CPM has issued a letter to the project owner authorizing construction.
COMPLIANCE-5	Compliance Matrix	A compliance matrix shall be submitted by the project owner to the CPM along with each monthly and annual compliance report
COMPLIANCE-6	Monthly Compliance Report including a Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Energy Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.
COMPLIANCE-7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.
COMPLIANCE-8	Confidential Information	Any information the project owner deems confidential shall be submitted to the Energy Commission's Executive Director with a request for confidentiality.
COMPLIANCE-9	Reporting of Complaints, Notices, and Citations	Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints, or concerns
COMPLIANCE-10	Planned Facility Closure	The project owner shall submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure.
COMPLIANCE-11	Unplanned Temporary Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COMPLIANCE-12	Unplanned Permanent Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COMPLIANCE-13	Post-certification changes to the Decision	The project owner must petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements and/or transfer ownership of operational control of the facility.

COMPLIANCE TABLE 1
SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION

COMPLAINT REPORT/RESOLUTION FORM

COMPLAINTANT INFORMATION

Name:_____ Phone Number:_____

Address:_____

COMPLAINT

DATE COMPLAINT RECEIVED:_____ TIME COMPLAINT RECEIVED:_____

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

DATE OF FIRST OCCURRENCE:_____

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

_____

_____

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL:_____

_____

_____

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

DATE COMPLAINTANT CONTACTED TO DISCUSS FINDINGS:_____

DESCRIPTION OF CORECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION:_____

_____

_____

DOES COMPLAINTANT AGREE WITH PROPOSED RESOLUTION? ☐ YES ☐ NO

IF NOT, EXPLAIN:_____

_____

CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED:_____

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

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

OTHER RELEVANT INFORMATION:_____

_____

_____

"This information is certified to be correct."

PLANT MANAGER SIGNATURE:_____ DATE:_____

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

IV. ENGINEERING ASSESSMENT

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

A. FACILITY DESIGN

This review covers several technical disciplines including the civil, electrical, mechanical, and structural engineering elements related to project design and construction. It addresses consistency with applicable LORS, and does not extend to the project's environmental impacts under the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA). (7/15/2010 RT 8-9, 22-23; Exs. 1; 200, § D.1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

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

Staff considered potential geological hazards and reviewed the preliminary project design with respect to grading, flood protection, erosion control, site drainage, and site access in addition to the criteria for designing and constructing related linear facilities such as natural gas and transmission interconnection lines. (Ex. 200, p. D.1-2; see also, the **Geology and Paleontology** section of this Decision.) The evidence establishes that the project will incorporate accepted industry standards. This includes design practices and construction methods for preparing and developing the site. (*Id.*) Conditions **CIVIL-1** through **CIVIL-4** ensure that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include project components necessary for power production, those costly or time consuming to repair or replace,

facilities used for storage of hazardous or toxic materials, and those capable of becoming potential health and safety hazards if not constructed properly. (Ex. 200, p. D.1-3.) **Table 1**, contained in Condition **GEN-2,** lists the major structures and equipment included in the initial engineering design for the project.[2] Conditions **GEN-3** through **GEN-8** require that qualified individuals oversee and inspect facility construction. Similarly, Conditions **MECH-1** through **MECH-3** address compliance of the project's mechanical systems with appropriate standards, and a quality assurance/quality control program assures that the project will be designed, procured, fabricated, and installed as described. Condition **ELEC-1** mandates that design and construction of major electrical features comply with applicable LORS.

The 2007 California Building Code requires specific "dynamic" lateral force procedures for certain structures to determine their seismic design criteria; others may be designed using a "static" analysis procedure. To ensure that project structures are analyzed appropriately, Condition **STRUC-1** requires the project owner to submit its proposed lateral force procedures to the Chief Building Official[3] (CBO) for review and approval prior to the start of construction. (Ex. 200, p. D.1-3.)

The Conditions of Certification establish a design review and construction inspection process to verify compliance with applicable standards and special requirements. (Ex. 200, p. D.1-4.) The project will be designed and constructed in conformance with the latest edition of the California Building Standards Code (currently the 2007 CBSC) and other applicable codes and standards in effect at the time design approval and construction actually begin. (Ex. 200, p. D.1-3.) Condition of Certification **GEN-1** incorporates this requirement.

[2] The master drawing and master specifications lists described in Condition **GEN-2** refer to documents based on the project's *detailed* design and may include supplemental materials for structures and equipment not currently identified in Table 1. (Ex. 200, p. D.1-3.)

[3] The Energy Commission is the CBO for facilities we certify. We may delegate CBO authority to local building officials and/or independent consultants to carry out design review and construction inspections. When CBO duties are delegated, we require a Memorandum of Understanding with the delegate entity to outline respective roles, responsibilities, and qualifications of involved individuals such as those described in Conditions of Certification **GEN-1** through **GEN-8**. The Conditions further require that every appropriate element of project construction be first approved by the CBO and that qualified personnel perform or oversee inspections. (Ex. 200, p. D.1-4.)

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

FINDINGS OF FACT

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

1. The Blythe Solar Power Project is currently in the preliminary design stage.
2. The evidence summarized in this topic area addresses consistency with applicable LORS, and does not extend to an evaluation of the project's environmental impacts.
3. The facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portion of **Appendix A** of this Decision.
4. The Conditions of Certification set forth below provide, in part, that qualified personnel will perform design review, plan checking, and field inspections of the project.
5. The Conditions of Certification set forth below are necessary to ensure that the project is designed and constructed in accordance with applicable law and in a manner that protects public health and safety.
6. The **General Conditions,** included in the **Compliance and Closure** section of this Decision, establish requirements to be followed in the event of facility closure.

CONCLUSION OF LAW

1. We therefore conclude that implementation of the Conditions of Certification listed below ensures that the Blythe Solar Power Project will be designed and constructed in conformance with the applicable LORS pertinent to the engineering aspects summarized in this section of the Decision.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2007 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California

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

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

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

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

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

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master drawing and master specifications lists. The schedule shall contain a list of

proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.

Verification: At least 60 days (or a project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawing, and master specifications lists of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 1**, below. Major structures and equipment may be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

Facility Design Table 1
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Steam Turbine Generator Foundation and Connections	4
Start-up Boilers Foundations and Connections	4
Generator Step-up Transformer Foundation and Connections	4
Overflow Vessel Foundation and Connections	8
Expansion Vessel Foundation and Connections	8
Weather Station Building Structure, Foundation and Connections	4
HTF Pumps Lube Oil Unit Foundation and Connections	8
Balance of Plant Electrical Building Structure, Foundation and Connections	4
Ullage Coolers and Vessel	4
Reheaters Foundation and Connections	8
MCC Cooling Tower Foundation and Connections	4
Gland Condenser Foundation and Connections	4
Lube Oil Console	4
Deaerator Foundation and Connections	4
LP/HP Pre-Heaters	4
Main Auxiliary Transformers Foundations and Connections	4
Air-cooled Condenser Structure, Foundation and Connections	4
Oil/Water Separator Foundation and Connections	4
Compressed Air System Foundation and Connections	4
Generator Circuit Breaker Foundation and Connections	4
Warehouse Building Structure, Foundation and Connections	4
Chemical Injection Skid Foundation and Connections	4
Cooling Tower Structure Foundation and Connections	4
Water Tank Structure, Foundation and Connections	4

Equipment/System	Quantity (Plant)
Take Off Tower Structure, Foundation and Connections	4
Blowdown Tanks Structure, Foundation and Connections	8
Sample Panel and Lab Building Structure, Foundation and Connections	4
Demineralized Water Tank Structure, Foundation and Connections	4
Administration Building Structure, Foundation and Connections	4
Control Building Structure, Foundation and Connections	4
Pipe Racks	1 Lot
Treated Water Tank Structure, Foundation and Connections	4
Pumps Foundation and Connections	1 Lot
Solar Field Reflectors and Receivers Foundations and Connections	1 Lot
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping and Pipe Racks	1 Lot
HVAC and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Substation, Switchboards, Transformers, Buses and Towers	1 Lot
Electrical Cables/Duct Banks	1 Lot
Prefabricated Assemblies	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan checks, and construction inspections based upon a reasonable fee schedule negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2007 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the CBO.

Verification: The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report indicating that applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California- registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The RE shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;

2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these Conditions of Certification, approved plans, and specifications;

3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;

4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;

5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and

6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.

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

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

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for

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

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

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

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

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

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

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

A. The civil engineer shall:

1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and

3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.

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

1. Review all the engineering geology reports;

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

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2007 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and

4. Recommend field changes to the civil engineer and RE.

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

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare a final soils grading report; and

2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2007 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;

2. Provide consultation to the RE during design and construction of the project;

3. Monitor construction progress to ensure compliance with engineering LORS;

4. Evaluate and recommend necessary changes in design; and

5. Prepare and sign all major building plans, specifications, and calculations.

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

F. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and

2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

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

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

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

GEN-6 Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2007 CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

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

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;

2. Inspect the work assigned for conformance with the approved design drawings and specifications;

3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction then, if uncorrected, to the CBO and the CPM for corrective action; and

4. Submit a final signed report to the RE, CBO, and CPM stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the

approved plans, specifications, and other provisions of the applicable edition of the CBC.

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

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

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

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

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

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

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

Within 90 days of the completion of construction the project owner, at its own expense, shall provide the CBO three sets of electronic copies of the above documents. These shall be provided in the form of "read only" (Adobe pdf 6.0) files, with restricted (password-protected) printing privileges, on archive quality compact discs.

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

1. Design of the proposed drainage structures and the grading plan;

2. An erosion and sedimentation control plan;

3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and

4. Soils, geotechnical, or foundation investigations reports required by the 2007 CBC.

Verification: At least 15 days (or project owner and CBO approved alternative time frame) prior to the start of site grading, the project owner shall submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

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

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

CIVIL-3 The project owner shall perform inspections in accordance with the 2007 CBC. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

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

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

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

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans, and drawings for project structures. Proposed lateral force procedures, designs, plans, and drawings shall be those for the following items (from **Table 1**, above):

1. Major project structures;

2. Major foundations, equipment supports, and anchorage; and

3. Large field-fabricated tanks.

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

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;

2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;

3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents for the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;

4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and

5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.

Verification: At least 60 days (or project owner and CBO approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO the above final design plans, specifications, and calculations, with a copy of the transmittal letter to the CPM.

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

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

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);

2. Concrete pour sign-off sheets;

3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);

4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2007 CBC.

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

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

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2007 CBC including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes and shall give to the CBO prior notice of the intended filing.

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

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2007 CBC shall, at a minimum, be designed to comply with the requirements of that chapter.

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

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

MECH-1 The project owner shall submit for CBO design review and approval the proposed final design, specifications, and calculations for each plant major piping and plumbing system listed in **Facility Design Table 1**, Condition of Certification **GEN-2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction.

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

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

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

Verification: At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 1**, Condition of Certification **GEN-2,** above, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.

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

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

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code or other applicable code. Vendor certification, with identification of applicable codes, shall be submitted for prefabricated vessels and tanks; and

2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

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

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

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

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

Verification: At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

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

A. Final plant design plans shall include:

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

   2. system grounding drawings.

B. Final plant calculations must establish:

   1. short-circuit ratings of plant equipment;

2. ampacity of feeder cables;

3. voltage drop in feeder cables;

4. system grounding requirements;

5. coordination study calculations for fuses, circuit breakers, and protective relay settings for the 13.8 kV, 4.16 kV, and 480 V systems;

6. system grounding requirements; and

7. lighting energy calculations.

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

1. Receipt or delay of major electrical equipment;

2. Testing or energization of major electrical equipment; and

3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

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

B. POWER PLANT EFFICIENCY

Pursuant to the California Environmental Quality Act (CEQA), the Commission must determine whether the consumption of fossil fuel (a non-renewable form of energy) will result in substantial impacts upon energy resources. (Cal. Code Regs., tit. 14 § 15126.4(a)(1), App. F.) However, Blythe Solar Power Project (BSPP or Blythe Solar) would use solar energy to generate all of its capacity. Fossil fuel, in the form of natural gas, would be used only to maintain steam seals, assist with startups, and keep the temperature of the heat transfer fluid above its relatively high freezing point. The project would decrease reliance on fossil fuel, and would increase reliance on renewable energy resources. The undisputed evidence establishes that the project would not create significant adverse effects on fossil fuel energy supplies or resources, would not require additional sources of energy supply, and would not consume fossil fuel energy in a wasteful of inefficient manner. In addition, if constructed and operated as proposed, Blythe Solar would occupy approximately six acres per MW of power output, a figure considerably less than that of some other solar power technologies. (Ex. 200, pp. D.3-1, D.3-7.)

The evidence examines the efficiency of the Blythe Solar project design, compares project efficiency to that of other solar projects, and examines whether the project will incorporate measures that prevent or reduce wasteful, inefficient, or unnecessary energy consumption. The evidence also examines a number of technology and of land use alternatives to the project. There are no LORS that establish solar power plant efficiency criteria. (7/15/10 RT 22; Exs. 1,§ 2.5.3; 200, section D.3.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Blythe Solar project is a solar thermal power plant producing a total of 1,000 MW (nominal net output) and employing the concentrated parabolic trough solar thermal technology. The project would consist of arrays of parabolic mirrors, solar steam generator heat exchangers, two steam turbine generators, and a dry cooling system using air-cooled condensers. (Ex. 200, p. D.3-3.)

The project's power cycle would be based on a steam cycle (also known as the Rankine cycle) (Ex. 1, § 2.4.1). The solar steam generator heat exchangers would receive heat transfer fluid from the solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun. The heat transfer fluid would be used to generate steam in the heat exchangers. This steam would then expand through the steam turbine generator to produce electrical power.

1. Fossil Fuel Use – Impacts

Solar thermal power plants typically consume much less fossil fuel (usually in the form of natural gas) than other types of thermal power plants. Therefore, common measures of power plant efficiency used by the Commission to analyze gas-fired power plants are less meaningful when applied to a solar project. There are currently no legal or industry standards for measuring the efficiency of solar thermal power plants

Blythe Solar would consume insignificant amounts of fossil fuel for power generation. It would consume fossil fuel only to reduce startup time and to keep the temperature of the heat transfer fluid above its relatively high freezing point. The project would burn natural gas at a nominal rate of approximately 200,000 Million British thermal units (MMBtus) per year (Ex. 1.). The evidence establishes that, compared to a typical fossil fuel-fired power plant of equal capacity, and compared to the relatively considerable resources of fossil fuel in California, this rate is not significant. (*Id*.) Natural Gas for the Blythe Solar project would be supplied via a new Southern California Gas Company (SGC) pipeline connection. (Ex. 200, p. D.3-4.)

2. Solar Land Use Impacts

However, solar power plants do occupy vast tracts of land, so the focus for analyzing the efficiency of these types of facilities must shift from fuel efficiency to land use efficiency. To analyze the land use efficiency of a solar facility, Commission staff analyzed the Blythe Solar project to determine its overall solar efficiency[4]. The greater the project's solar efficiency, the less land the plant must occupy to produce a given power output. (Ex. 200, p. D.3-2.)

The extent of the project's land use impacts is likely in direct proportion to the number of acres affected. For this reason, the analysis contained in the evidence evaluated the land use efficiency of the project and expressed the results in terms of power produced, or MW per acre. Blythe Solar project was also compared to the MW per acre of other solar projects currently under review by the Commission. These projects' power and energy output, and the extent of the land occupied by them, are summarized in **Efficiency Table 1**, below. The land use efficiency for a typical fossil fuel-fired combined cycle power plant (e.g.

[4] It appears that methods for determining the efficiency of a solar power plant have yet to be standardized. (Ex. 200, p. D.3-2.)

Avenal Energy, natural gas-fired) is shown only for comparison. (Ex. 200, p. D.3-6.)

According to the analysis contained in evidence submitted by Staff, Blythe Solar will produce power at the rate of 1,000 MW net, and will generate energy at the rate of 2,100,000 MW-hours net per year, while occupying approximately 5,950 acres (7/15/10 RT 4; Exs. 1. Section 2.3, Figure 2-4; 200, p. D.3-5.). Staff calculations for the Blythe Solar project establish the following:

Power-based efficiency: 1000 MW ÷ 5,950 acres **= 0.17 MW/acre** or 6.0 **acres/MW**

Staff calculates energy-based land use efficiency thus:

Energy-based efficiency: 2,100,000 MWh/year ÷ 5,950 acres **=343 MWh/acre-year**

Efficiency Table 1

Solar Land Use Efficiency

Project	Generating Capacity (MW net)	Annual Energy Production (MWh net)	Annual Fuel Consumption (MMBtu LHV)	Footprint(Acres)	Land Use Efficiency (Power-Based) (MW/acre)	Land Use Efficiency (Energy – Based) (MWh/acre-year)	
						Total	Solar Only[1]
Blythe Solar (09-AFC-6)	**1,000**	**2,100,000**	**207,839**	**5,950**	**.17**	**353**	**348**
Beacon Solar (08-AFC-2)	250	600,000	36,000	1,240	0.20	484	480
Ivanpah SEGS (07-AFC-5)	400	960,000	432,432	3,744	0.11	256	238
SES Solar Two (08-AFC-5)	750	1,620,000	0	6,500	0.12	249	249
Calico Solar (08-AFC-13)	850	1,840,000	0	8,200	0.11	224	224
Fossil Plant Comparison: Avenal Energy (08-AFC-1)[2]	600	3,023,388	24,792,786	25	24.0	120,936	N/A

[1] Net energy output is reduced by natural gas-fired combined cycle proxy energy output.

[2] Example natural gas-fired combined cycle plant.

Source: Ex. 200, p. D.3-6

3. Analyses of Alternatives

The record also contains analyses of several alternatives to the proposed project. For purposes of one analysis, natural gas, oil, coal, nuclear, geothermal, biomass, hydroelectric, wind and solar photovoltaic technologies were all considered. Because the Blythe Solar project would consume insignificant amounts of fossil fuel for power production, the project would not constitute a significant adverse impact on fossil fuel energy resources compared to feasible alternatives. (Ex. 200, p. D.3-4.) From a land use efficiency prospective, alternative generation technologies such as a natural gas-fired combined cycle power plant would yield much greater land use efficiency than the proposed project. However, it would not achieve the basic project objective, to generate electricity from the renewable energy of the sun. Even though evaporative dry cooling could offer greater efficiency than dry cooling, the applicant's selection of dry cooling was shown to be a reasonable tradeoff that would prevent potentially significant environmental impacts resulting from consumption of the large quantities of water required by wet cooling. (Ex. 200, p. D.3-7.). An alternative that reconfigured the project layout would not change the level of significance from the proposed project. (Ex. 200, p. D.3-8.)

Several no project alternatives were examined in the record. While these would eliminate land-use impacts of the project, they would eliminate the projects ability to reduce reliance on fossil fuels and increase renewable energy resources. None of the examined alternatives were shown to be superior overall to the proposed Blythe Solar project. The evidence establishes that from an energy efficiency prospective, given the project objectives, location, air pollution control requirements, and the commercial availability of various alternative technologies, the selected solar thermal technology is a feasible selection. This is evaluated further in the **Alternatives** section of this Decision. (See Ex. 200, p. 7-19 to 7-2.)

FINDINGS OF FACT

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

1. The Blythe Solar project will provide approximately 1,000 MW of electrical power, using solar energy to generate most of its capacity and natural gas auxiliary boilers to maintain steam seals, reduce startup time, and to keep the temperature of the heat transfer fluid above its freezing point.

2. Blythe Solar is likely to experience an average steam cycle efficiency of 35 percent, which is comparable to the 35 to 40 percent steam efficiency for modern steam turbines.

3. The project will burn natural gas at a nominal rate of approximately 200,000 Million British thermal units (MMBtus) per year.

4. The amount of the project's annual power production from fossil fuel is insignificant.

5. Compared to the project's expected overall production rate and compared to a typical fossil fuel fired power plant of equal capacity, the amount of the annual power production from fossil fuel is insignificant.

6. The impact of the project's fuel consumption on energy supplies and energy efficiency is less than significant.

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

8. Blythe Solar will not require the development of new fuel supply resources.

9. The project will decrease reliance on fossil fuel and will increase reliance on renewable energy resources. Consequently, the project would help in reducing California's dependence on fossil fuel-fired power plants.

10. The most significant environmental impacts caused by solar power plants result from occupying large expanses of land.

11. The evidentiary record contains an analysis of the project's land use impacts compared to energy output, and analyses of alternative solar technologies and heat rejection systems.

12. The project will occupy approximately 6.0 acres per MW of power output, a figure lower than many other solar power technologies.

13. Greater land use efficiency would be achieved by building and operating a natural gas-fired combined cycle power plant than the proposed solar project. However, such an alternative would not achieve the basic project objective of generating electricity from the renewable energy of the sun.

14. The evidentiary record contains analyses of alternatives to the Blythe Solar project's cooling technologies, to its project layout, to its acreage size, as well as several No Project alternatives. None of the examined

alternatives would achieve project objectives while also reducing or eliminative significant, unmitigated environmental impacts.

15. No nearby power plant projects or other projects consuming large amounts of fossil fuel hold the potential for cumulative energy consumption impacts when aggregated with the project.

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

CONCLUSIONS OF LAW

1. The Blythe Solar project will not create significant adverse effects upon energy supplies or resources, require additional sources of energy supply, or consume energy in a wasteful or inefficient manner.

2. No Conditions of Certification are required for this topic area.

C. POWER PLANT RELIABILITY

In order to ensure safe and reliable operation of the Blythe Solar Energy Project (Blythe Solar) we must determine whether the project will be designed, sited and built in accordance with typical industry norms for reliable power generation. We apply these norms as a benchmark to ensure that the resulting project would not be likely to degrade the overall reliability of the electric system to which it is attached. [Pub. Res. Code, § 25520(b); Cal. Code Regs., tit. 20, § 1752(c)(2).] However, there are no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation.

The responsibility for maintaining electrical system reliability falls largely to control area operators such as the California Independent System Operator (CAISO) that purchase, dispatch, and sell electric power throughout the state. (Ex. 200, p. D.4-1.) Protocols to ensure sufficient electrical system reliability have been established. For example, "must run" power purchase agreements and "participating generator" agreements are two mechanisms that contribute to an adequate supply of reliable power. (Ex. 200, p. D.4-2.)

The California Public Utilities Commission consults with CAISO to establish resource adequacy requirements for all load-serving entities (basically, publicly and privately owned utility companies). These requirements include maintaining a minimum reserve margin (extra generating capacity to serve in times of equipment failure or unexpected demand) and maintaining sufficient local generating resources to satisfy the load-serving entity's peak demand and operating reserve requirements. The CAISO has begun to establish specific criteria for each load-serving entity under its jurisdiction. These criteria guide each load-serving entity in deciding how much generating capacity and ancillary services to build or purchase, after which the load-serving entity issues power purchase agreements to satisfy these needs. (*Id*.)

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

reliability of the electric system it serves. (7/15/10 RT 22; Ex. 200, pp. D.4-2 - D.4-15)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Applicant intends that the Blythe Solar project provide dependable renewable power to the electricity grid, generally during the hours of peak power consumption such as hot summer afternoons. It expects an annual availability factor[5] of approximately 97 percent for the project. The project is anticipated to operate at an annual capacity factor of approximately 26 percent. (Ex. 200, p. D.4-2.) For practical purposes, a reliable power plant is one that is available when called upon to operate. The evidence shows that delivering acceptable reliability entails: 1) adequate levels of equipment availability; 2) plant maintainability with scheduled maintenance outages; 3) fuel and water availability; and 4) resistance to natural hazards. (Ex. 200, p. D.4-1.)

The record, summarized below, reflects Commission staff's evaluation of the proposed project against typical industry norms as a benchmark for assessing plant reliability.

1. Equipment Availability

Equipment availability will be ensured by use of appropriate quality assurance/quality control (QA/QC) programs during design, procurement, construction, and operation of the plant and by providing adequate maintenance and repair of the equipment and systems. The project owner will use a QA/QC program typical in the power industry. Equipment will be purchased from qualified suppliers and the project owner will perform receipt inspections, test components, and administer independent testing contracts. To ensure these measures are taken, we have incorporated appropriate Conditions of Certification in the **Facility Design** section of this Decision. (Ex. 200, p. D.4-3.)

2. Plant Maintainability

The Blythe Solar Project will operate only when the sun is shining. Repairs or maintenance can thus occur at night. Moreover, redundant pieces of the equipment most likely to require service or repair will be provided in order to allow repairs when the plant is operating, if needed. Specifically, the project

[5] This is the percentage of time that the power plant is available to generate power; both planned and unplanned outages subtract from this availability.

would consist of four separate units operating in parallel, which provides inherent reliability. (Ex. 200, p. D.4-3.) The project owner will establish a maintenance program based on recommendations from the various equipment manufacturers. This will encompass both preventive and predictive maintenance techniques. Maintenance outages will likely be planned for night time of periods of low electricity demand. The evidence establishes that these measures will ensure acceptable reliability. (Ex. 200, p. D.4-4.)

3. Fuel and Water Availability

For any power plant the long-term availability of fuel, and water for cooling or process use, is necessary to ensure reliability. The Blythe Solar project will use small amounts of natural gas to reduce start-up time and keep the temperature of the heat transfer fluid above its freezing point. Natural gas would be delivered to the Blythe Solar site via a 10-mile long, 4-inch diameter pipeline connecting the site to a Southern California Gas Company (SGC) main pipeline south of highway I-10 (Ex. 1, § 2.5.5.1) The evidence establishes that adequate supplies of natural gas are available to meet the project's needs. (Ex. 200, p. D.4-4.)

The Applicant has proposed using well water for domestic and industrial water needs, including steam cycle makeup, mirror washing, service water and fire protection water. The project would be dry cooled, so no water would be required for power plant cooling. The quantities of water to be consumed by the project are relatively small compared to the capacity of the resource available. (Ex. 200, p. D.4-4.)

4. Natural Hazards

The site lies within Seismic Zone 3; no active faults are present within the project boundaries or within a 1.5 mile radius of the site[6]. (Ex. 1, §§ 5.5, 5.5.2.2.) The project will be designed and constructed to standards of the latest appropriate LORS. By implementing these seismic design criteria, this project will likely perform at least as well as, and perhaps better than, existing plants in the electric power system. We have adopted Conditions of Certification in the **Facility Design** section of this Decision to ensure this occurs. Although a portion of the site is within the 100-year or 500-year floodplain, the evidence raises no special concerns with power plant reliability due to flooding. (Exs 1, § 5.17.1.3; 200, p. D.4-5.)

[6] For a more detailed discussion, see the **Geology and Paleontology** section of this Decision.

High winds are common in the region of the site, presenting the potential risk of damage to the solar mirrors. However, the record shows that project features would be built to withstand wind loading, and wind fencing would be installed around the project perimeter to reduce the effects of wind. Nevertheless, to protect mirrors during high winds, mirror arrays would have to be stowed in a protective position. Designs to address wind loading would be in accordance with applicable LORS, including the 2007 California Building Code (Ex. 1, §§ 2.5.6.2, 2.5.6.5).

5. Comparison to Industry Norms

The North American Electric Reliability Corporation (NERC) maintains industry statistics for availability factors and other related reliability data. However, no statistics are currently available for solar power plants[7]. (Ex. 200, p. 6.4-6.) Nevertheless, the evidence establishes the likelihood that the project will reach its predicted annual availability factor of approximately 97 percent.

6. Alternatives

The evidence contains an analysis of several alternatives to the proposed project including a reconfigured design, a reduction in project acreage, and several no project alternatives. None of the alternatives would likely affect the reliability analysis, although a no project alternative that did not allow another solar generation project on the site would result in an increased or continuing reliance on fossil fuel-fired generation and a loss of renewable generation resources. (Ex. 200, p. D.4-5 to D.4-8.)

Finally, the evidence shows that the Blythe Solar project will provide renewable energy on hot summer afternoons, when it is most needed. The evidence characterizes this as a "noteworthy project benefit." (Ex. 200, p. D.4-8.)

FINDINGS OF FACT

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

1. No federal, state, or local/county LORS apply specifically to the reliability of the Blythe Solar Power Project.

[7] NERC reports that, for the years 2002-2006, the availability factor for fossil fueled units is 86.01 percent.

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

3. Because solar technology is relatively new and the technologies employed so varied among solar projects, no National American Electric Reliability Corporation (NERC) statistics are available for solar power plants.

4. Applicant's unchallenged prediction of the availability factor for Blythe Solar is 97 percent.

5. Blythe Solar is anticipated to operate at an annual capacity factor of approximately 26 percent.

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

7. Appropriate Conditions of Certification included in the **Facility Design** portion of this Decision ensure implementation of the QA/QC program for Blythe Solar and will ensure conformance with seismic design criteria.

8. The project's natural gas fuel supply is reliable.

9. The evidence shows that adequate, reliable supplies of water exist and are available for the project.

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

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

12. The nature of solar thermal generating technology provides inherent redundancy because the series-parallel arrangement of solar collector assemblies would allow for reduced output generation if one (or possibly several) rows of solar collectors were to require service or repair.

13. The project will provide renewable energy on hot summer days, when it is most needed.

CONCLUSIONS OF LAW

1. We therefore conclude that the Blythe Solar project will meet or exceed industry norms and not degrade the overall reliability of the electrical system.

2. There are no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation.

3. No Conditions of Certification are required for this topic area.

D. TRANSMISSION SYSTEM ENGINEERING

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

The California Independent System Operator (CAISO) is responsible for ensuring electric system reliability for participating entities, and determines both the standards necessary to achieve system reliability and whether a proposed project conforms to those standards. The Commission works in conjunction with the CAISO in assessing a project.

Commission Staff's analysis evaluates the project transmission lines and equipment, both from the power plant up to the point of interconnection with the existing transmission network as well as upgrades beyond the interconnection that are attributable to the project. Staff relies upon the responsible interconnecting authority for analysis of impacts on the transmission grid, as well as for the identification and approval of new or modified facilities required downstream from the proposed interconnection for mitigation purposes.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Applicant has proposed to interconnect the 1,000 megawatt (MW) BSPP to Southern California Edison's (SCE) planned Colorado River Substation. The BSPP would be located approximately two miles north of U.S. Interstate 10 and eight miles west of the City of Blythe in Riverside County, California.

The BSPP would be a solar thermal project which would use a solar parabolic trough technology to generate electricity. Arrays of parabolic mirrors collect heat from the sun and heat up the fluid in the solar field piping. Through a series of heat exchangers, heat is released to generate high pressure steam. The steam is then fed to a steam turbine generator (STG) to generate electricity.

Each STG is rated at 300 MVA with a power factor of 0.90. The STG would be connected through a 24 kV 12,000-ampere disconnect switch and a 10,000-ampere generator circuit breaker via a short 12,000-ampere isolated phase bus

duct to the low side of its dedicated 210/280/350 MVA generator step-up (18/230 kV) transformer. The 30 MW parasitic load for each unit would be provided through its dedicated back-fed transformer (18/6.9 kV) which is connected between the STG circuit breaker and the low side of the step-up transformer through 12,000-ampere disconnect switches and via a short 12,000-ampere isolated phase bus duct. The high side of the transformer would be connected through a 230 kV 3,000-ampere disconnect switch to the generator tie bus in the project switchyard (Solar Millennium 2009a, section 1.0, section 2.5.7, Solar Millennium 2010b, Figure 2-9).

The proposed project would be developed in four phases or units. Each unit would have its own solar field and power block. Each power block consists of a heat transfer fluid system, solar steam generator, a steam turbine generator, air-cooled condenser, and various auxiliary equipment. Unit 1 and Unit 2 would each occupy 1,600 acres and Unit 3 and Unit 4 would each occupy 1,200 acres. Each unit is expected to generate at a normal output of 250 MW. The total of four steam turbine generators is expected to generate 1,000 MW.

The proposed commercial operation dates are second quarter 2013 for unit 1, fourth quarter 2013 for unit 2, second quarter 2015 for unit 3, and second quarter 2016 for unit 4. (Ex. 200, pp. D.5-4 to D.5-5.)

SCE is responsible for ensuring electric system reliability on its transmission system with the addition of proposed transmission modifications, and determines both the standards necessary to ensure reliability and whether the proposed transmission modifications conform to existing standards. The CAISO has provided an analysis in its Phase I Study and will provide analysis in its Phase II Study, and its approval for the facilities and changes required in its system for addition of the proposed transmission modifications. (Ex. 200, p. D.5-2.)

The CAISO is responsible for dispatching generating units in California, establishing the order in which electricity will be used, ensuring electric system reliability for all participating transmission owners and is also responsible for developing the standards and procedures necessary for system reliability. The CAISO will review SCE's studies to ensure the adequacy of the proposed BSPP transmission interconnection. The CAISO will also determine the reliability impacts of the proposed transmission modifications on SCE's transmission system in accordance with all applicable reliability criteria. According to the Tariff, it will determine the need for transmission additions or upgrades downstream from the interconnection point to ensure reliability of the transmission grid. The

CAISO performs the Phase I Interconnection Study, provides its analysis, conclusions, and recommendations, and issues a preliminary approval or concurrence letter to SCE. On completion of the Phase II Interconnection Study, the CAISO will provide its conclusions and recommendations, and issue a final approval/disapproval letter for the interconnection of the proposed generation project. If necessary, the CAISO will provide written and verbal testimony on its findings at the Energy Commission hearings. (Ex. 200, p. D.5-2)

The July 24, 2009, Transition Cluster Phase I Interconnection Study was prepared by the CAISO in coordination with SCE. Fifteen queue generation projects including the proposed 1,000 MW BSPP in the Eastern Riverside County area with a total of 9,690 MW net generation output are included in this cluster study. As of December 4, 2009 only five projects (2,200 MW) of the original 15 projects remain in the interconnection queue. Reducing the size of the cluster by 10 projects and over 7,000 MW means the study results for the cluster are not a reasonable forecast of the reliability impacts of the proposed project or the other projects in the cluster. Since the Transition Cluster Phase I Interconnection Study does not provide an accurate forecast of the reliability impacts of the cluster or the proposed BSPP, staff cannot rely on the study results to show project compliance with LORS and to indentify the transmission facilities required to reliably interconnect a generator to the existing transmission grid. (Ex. 200, p. D.5-7)

CEQA requires the analysis of reasonably foreseeable consequences of proposed projects based on the best available information. The CAISO is the reliability authority for generator interconnections and its Phase I Interconnection Study for the BSPP provides the best available information on the reliability impacts of the proposed project. (Ex. 200, p. D.5-7) The Phase II Study is dated July 8, 2010 and was docketed with the Energy Commission on July 8, 2010 as Docket No. 57823.

1. Switchyard and Interconnection Facilities

Units 1 and 2 would be connected to the first generator tie bus in the project switchyard by 230 kV overhead conductors 4,800-foot long and 14,200-foot long respectively, then through 230 kV 3,000-ampere disconnect switches. Units 3 and 4 would be connected to the second generator tie bus in the project switchyard by 230 kV overhead conductors 10,300-foot long and 7,400-foot long respectively then through 230 kV 3,000-ampere disconnect switches.

The BSPP switchyard would be connected from the two generator tie buses to SCE's proposed Colorado River Substation via two new 230 kV overhead generator tie-lines, approximately 10 miles long, through 3,000-ampere disconnect switches and 3,000-ampere circuit breakers. Each 230 kV overhead generator tie-line would be built with single bundled 2156 kcmil (Bluebird) conductors. The generator tie-lines together could carry the full capacity of the 1,000 MW BSPP. The two generator tie-lines would be supported by 90-foot to 145-foot height single and double circuit towers. The applicant has proposed breaker-and-a-half bus work in the Colorado River Substation to accommodate the BSPP. Three 230 kV 3,000-ampere circuit breakers and six 230 kV 3,000-amperes disconnect switches would be needed at the Colorado River Substation for the interconnection of the BSPP. Power would be distributed to the SCE grid via transmission lines from the Colorado River Substation. (Ex. 200, p. D.5-5)

2. Study Results

Phase I Study. The California ISO's generator interconnection study process is in transition from a serial process to an interconnection window cluster study process. The BSPP was studied under the window cluster process and the transmission reliability impacts of the proposed project are studied in the Phase I and Phase II Interconnection Studies. The Phase I Interconnection Study is similar to the former System Impact Study except it is now performed for a group of projects in the same geographical area of a utility that apply for interconnection in the same request window. The Phase II Interconnection Study is performed after generators in each cluster meet specific milestones required to stay in the generator interconnection queue. The Phase II Interconnection Study is then performed based on the number of generators left in each cluster.

The Phase I Studies for projects in the transition cluster were conducted to determine the preferred and alternative generator interconnection methods and to identify any mitigation measures required to ensure system conformance with utility reliability criteria, NERC planning standards, WECC reliability criteria, and CAISO reliability criteria. Staff relies on the studies and any review conducted by the responsible agencies to determine the effect of the projects on the transmission grid and to identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards (NERC2006, WECC 2006, CAISO 2002a, 2007a & 2009a).

The Phase I Study analyzes the grid with and without the generator or generators in a cluster under conditions specified in the planning standards and reliability criteria. The standards and criteria define the assumptions used in the study and establish the thresholds by which grid reliability is determined. The studies must analyze the impact of the projects for their proposed first year(s) of operation and thus are based on a forecast of loads, generation and transmission. Load forecasts are developed by the interconnected utility, which would be SCE in this case. Generation and transmission forecasts are based on the interconnection queue. The studies are focused on thermal overloads, voltage deviations, system stability (excessive oscillations in generators and transmission system, voltage collapse, loss of loads or cascading outages), short circuit duties and substation evaluation.

Under the new Large Generator Interconnection Procedures (LGIP), generators are able to choose between either "full capacity" or "energy only" depending on whether or not the generator wants to have the right to generate energy 24-hours per day. A generator that chooses the full capacity option will be required to pay for transmission network upgrades that are needed to allow the generator to operate under virtually any system conditions and as such could sign contracts that allowed them to provide capacity to utilities. Energy only generators would not pay for network transmission upgrades, and essentially would have access to as available transmission capacity, and would likely not be able to sign capacity contracts.

Phase II Study. Staff analyzed the Phase II study and determined that the proposed interconnecting facilities including the proposed BSPP 230 kV switchyard, two 230 kV overhead generator tie-lines and its termination at the proposed Southern California Edison (SCE) Colorado River 230 kV Substation are acceptable and would comply with applicable laws, ordinances, regulations and standards (LORS). (Ex. 217)

The Phase II Study identified six mitigation measures required to allow for the reliable operation and delivery of power from the BSPP. Where the mitigation had the potential for significant environmental impacts staff has provided an environmental analysis in Appendix A and Appendix B of Staff's Transmission System Engineering Testimony, Ex. 217. Facilities identified in Appendices A and B may require license or approval from the CPUC and/or the Bureau of Land Management. Staff's recommended Conditions of Certification TSE 1 to TSE-7, which we have adopted in this Decision, would help ensure that the BSPP transmission facilities comply with applicable LORS.

3. Compliance with LORS

Condition of Certification **TSE-5** will ensure that BSPP's transmission system will comply with LORS, and requires the project owner to submit, among other things, design drawings and an interconnection agreement.

4. Conclusions

The proposed interconnecting facilities including the BSPP 230 kV switchyard, the double circuit 230 kV overhead generator tie-lines, and termination to the proposed new Colorado River Substation are adequate in accordance with industry standards and good utility practices, and are acceptable to staff according to engineering LORS. (Ex. 200, p. D.5-11)

With implementation of the proposed Conditions of Certification, the project will meet the requirements and standards of all applicable LORS. We find that with implementation of Conditions of Certification **TSE-1** through **TSE-5**, the BSPP will not adversely impact the transmission grid. (Ex. 200, pp. D.5-10 to D.5-17.)

FINDINGS OF FACT

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

1. The BSPP will consist of four independent concentrating solar electric generating facilities with a nominal net electrical output of 250 MW each, for a total net electrical output of 1000 MW.
2. The BSPP will interconnect to the proposed SCE Colorado River 230/500 kV substation as the primary point of interconnection.
3. The proposed transmission line is the first point of interconnection.
4. The Conditions of Certification are adequate to ensure that BSPP does not adversely impact the transmission grid.

CONCLUSIONS OF LAW

1. The proposed BSPP outlet transmission lines and terminations are acceptable and would comply with all applicable LORS.
2. We therefore conclude that with the implementation of the various mitigation measures specified in this Decision, the proposed transmission interconnection for the project will not contribute to significant adverse direct, indirect, or cumulative impacts.

3. The Conditions of Certification below ensure that the transmission-related aspects of BSPP will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

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

Verification: Prior to the start of construction of transmission facilities, the project owner shall submit the schedule, a master drawing list, and a master specifications list to both the CBO and the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1: Major Equipment List** below). Additions and deletions shall be made to the table only with both CPM and CBO approval. The project owner shall provide schedule updates in the monthly compliance report.

Table 1: Major Equipment List
Breakers
Step-up transformer
Switchyard
Busses
Surge arrestors
Disconnects
Take-off facilities
Electrical control building
Switchyard control building
Transmission pole/tower
Grounding system

TSE-2 Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following:

a) a civil engineer;

b) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering;

c) a design engineer who is either a structural engineer or a civil engineer and fully competent and proficient in the design of power plant structures and equipment supports; or

d) a mechanical engineer (Business and Professions Code Sections 6704 et seq. require state registration to practice as either a civil engineer or a structural engineer in California).

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

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

The electrical engineer shall:

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

Verification: Prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications, and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.

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

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

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

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

a) receipt or delay of major electrical equipment;

b) testing or energization of major electrical equipment; and

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

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

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

a) The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of

the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC) and related industry standards.

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

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

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

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

f) The project owner shall provide to the CPM:

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

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

   c. The final Phase II Interconnection Study, including a description of facility upgrades, operational mitigation measures, and/or special protection system sequencing and timing if applicable; and

   d. A copy of the executed LGIA signed by the California ISO and the project owner.

Verification: Prior to the start of construction of transmission facilities, the project owner shall submit to the CBO for approval:

a. Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, CA ISO standards, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment;

b. For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[8] and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the

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

transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC), and related industry standards;

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

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

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

f. The final Phase II Interconnection Study, including a description of facility upgrades, operational mitigation measures, and/or special protection system sequencing and timing if applicable, and

g. A copy of the executed LGIA signed by the California ISO and the project owner.

TSE-6 The project owner shall provide the following Notice to the California Independent System Operator (California ISO) prior to synchronizing the facility with the California Transmission system:

1. At least one week prior to synchronizing the facility with the grid for testing, provide the California ISO a letter stating the proposed date of synchronization; and

2. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the California ISO Outage Coordination Department.

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

TSE-7 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", applicable

interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

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

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

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

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

E. TRANSMISSION LINE SAFETY AND NUISANCE

The Blythe Solar Power Project's transmission line must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This portion of the Decision assesses the potential for the generation tie line to create the various impacts mentioned below, as well as whether mitigation measures are required to reduce any adverse effects to insignificant levels. The analysis of record takes into account both the physical presence of the line and the physical interactions of its electric and magnetic fields. (7/15/2010 RT 8-9, 22-23; Exs. 1; 200, § C.11.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The transmission tie line facilities associated with this project consist of:

- An on-site 230-kV switchyard; and
- A new, double circuit 230 kV-overhead transmission line extending about ten miles southwest from the switchyard to Southern California Edison's (SCE) planned Colorado River Substation.[9] (Exs. 42; 52; 200, pp. C.11-1, C.11-4.)

The tie line will proceed directly south from the project site, cross over Interstate 10, and turn westward to the planned substation. The line will be routed within a 175 foot wide right-of-way; it crosses largely uninhabited desert, with only two residences in the project's immediate area. The transmission tie line will be supported by steel pole structures, placed from 400 to 1200 feet apart, and ranging from 90 to 145 feet in height. (Ex. 200, p. C.11-4.)

Potential impacts posed by the tie line involve aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and electric and magnetic field (EMF) exposure. (Ex. 200, p. C.11-2.) The evidence conclusively establishes the following:

[9] This Decision addresses only the ten mile long tie line as the Commission's jurisdiction over a transmission line associated with a power plant extends only to "a point of junction with any interconnected transmission system." [Pub. Res. Code §§ 25107, 25110.] The CPUC and the BLM will review the planned Colorado River Substation. (Exs. 42; 52; 200, pp. C.11-1, C.11-4.)

- *Aviation Safety*

Hazards to area aircraft arise from the potential for collision in the navigable airspace. The project site is located one mile north of the Blythe Airport; for present purposes, this proximity triggers specific height restrictions for the line's support structures. To minimize the collision hazard, the structures in a 3,900 foot long segment[10] will be limited to a height of 90 feet. This complies with Federal Aviation Administration (FAA) requirements, as evidenced by that entity's safety analysis and issuance of a "Determination of No Hazard to Air Navigation." (Ex. 200, p. C.11-5.) However, after consultations with the Riverside County Airport Land Use Commission, the applicant agreed to shift the proposed transmission line and towers approximately one quarter mile further west off the extended centerline of Runway 8-26. (Exs. 62; 207, Aviation Safety Assessment, p. 20.)

Even with the applicant's change in the transmission line route, additional measures should be taken to ensure that these structures are visible to pilots. The lines and poles beneath runway approaches, typical pattern entry corridors, and typical departure routes should be marked and lighted, even if they are in conformance with FAA height requirements.[11]

The FAA recognizes that in certain cases, objects should be marked even if they may not constitute obstructions under the criteria in 14 CFR Part 77.

> Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet (61 m) above ground level (AGL) or exceeds any obstruction standard contained in 14 CFR Part 77, should normally be marked and/or lighted. However, an FAA aeronautical study may reveal that the absence of marking and/or lighting will not impair aviation safety. Conversely, the object may present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure safety to air navigation.[12]

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[10] This is the potentially hazardous segment which starts 11,900 feet south of the project and stretches 3,900 feet to the planned substation. (Ex. 200, p. C.11-5.)

[11] This is indicated by the high proportion of local operations at the airport, estimated at 50% of all operations. Local operations are those that remain in the airport vicinity, including touch-and-goes, and are typically associated with flight training and proficiency exercises.

[12] FAA Advisory Circular 70/7460-1K, *Obstruction Marking and Lighting*, February 1, 2007, p.3 (emphasis added).

In a safety study report published in 2006, the FAA noted the hazard that overhead wires can pose to aircraft.

> As with antenna towers, these high voltage/power lines or the supporting structures of these lines may not always be readily visible and the wires may be virtually impossible to see under certain conditions…. All pilots are cautioned to remain extremely vigilant for these power lines or their supporting structures when following natural flyways or during the approach landing phase.[13]

Therefore, we adopt staff-recommended Condition of Certification **TRANS-11** to ensure that the transmission line and poles closest to the runway are adequately marked for pilots' safety.

The aviation safety matter is fully discussed in the **Traffic and Transportation** section of this Decision.

- *Interference with Radio-Frequency Communication*

This potential impact is one of the indirect effects of line operation and is produced by the physical interactions of the electric fields. It arises from corona discharge and can manifest itself as perceivable interference with radio or television reception, as well as with other forms of AM radio communication. (Ex. 200, p. C.11-5.) At one point, Riverside County's Airport Land Use Commission questioned whether the tie line would potentially interfere with the navigational system used at the Blythe Airport. (Ex. 200, p. C.11-15.)

The evidence shows that the tie line will be designed, built, and maintained according to standard SCE practices which minimize surface irregularities and discontinuities that create corona noise. Corona effects will also be minimized by specific low corona design. The evidence further establishes that the line will not interfere with residential receptors or the digital airport-related communications equipment. (Ex. 200, pp. C.11-6, C.11-15.) Moreover, Condition **TLSN-2** assures that appropriate mitigation will be applied in the unlikely event of interference-related complaints caused by the tie line.

13 FAA, Flight Procedure Standards Branch, AFS-420, *Safety Risk Analysis of Aircraft Overflight of Industrial Exhaust Plumes*, Safety Study Report DOT-FAA-AFS-420-06-1, January 2006, p. 4.

- *Audible Noise*

This is typically perceived as a characteristic crackling, hissing, or frying sound or hum, especially in wet weather.[14] The noise level depends upon the strength of the line's electric field. It can be limited through design, construction, and maintenance practices. The project's line will embody a low corona design to minimize field strengths. The evidence shows that the line is not expected to add significantly to the current background noise levels.[15] (Ex. 200, p. C.11-6.)

- *Hazardous Shocks*

These could result from direct or indirect contact between an individual and the energized line. Adherence to minimum national safe operating clearances in areas where the line might be accessible to the public assures safety. Compliance with the CPUC's GO-95, as required in Condition of Certification **TLSN-1**, will ensure that adequate measures are implemented to minimize this potential impact. (Ex. 200, p. C.11-7.)

- *Nuisance Shocks*

Nuisance shocks are typically caused by direct contact with metal objects electrically charged by fields from an energized line. They are effectively minimized through grounding procedures for all metallic objects within the right-of-way as specified by the National Electrical Safety Code (NESC) as well as the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). This is required in Condition of Certification **TLSN-5**. (*Id.*)

- *Fire Hazards*

Fire can be caused by sparks from the line's conductors or by direct contact between the line and nearby trees or other combustible objects. SCE's standard fire prevention and suppression measures, and compliance with the clearance-related aspects of GO-95 as required in Condition of Certification **TLSN-4**, ensure that appropriate fire prevention measures are implemented. (Ex. 200, pp. C.11-6 to C.11-7.)

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[14] In fair weather, audible noise from modern transmission lines is generally indistinguishable from background noise at the edge of a right-of-way 100 or more feet wide. (Ex. 200, p. C.11-6.)

[15] Overall project noise levels are discussed in the **Noise** section of this Decision.

- *Exposure to Electric and Magnetic Fields*

Electric and magnetic fields (EMF) occur whenever electricity flows. The possibility of deleterious health effects from exposure to EMF has raised public health concerns about living and working near high-voltage lines. Due to the present scientific uncertainty regarding these potential health effects, CPUC policy requires reduction of EMF fields in the design, construction, and maintenance of new or modified lines, if feasible, without affecting the safety, efficiency, reliability, and maintainability of the transmission grid. (Ex. 200, pp. C.11-7 to C.11-8.)

The CPUC requires each new or modified transmission line in California to be designed according to the EMF-reducing guidelines of the electric utility in the service area involved. EMF fields produced by new lines must be similar to the fields of comparable lines in that service area. To comply with CPUC requirements for EMF management, SCE's specific field strength-reducing measures will be incorporated into the project line's design and include:

- Increasing the distance between the conductors and the ground to an optimal level;
- Reducing the spacing between the conductors to an optimal level;
- Minimizing the current in the line; and
- Arranging current flow to maximize the cancellation effects from the interaction of conductor fields. (Ex. 200, pp. C.11-9 to C.11-10.)

Applicant calculated the maximum electric and magnetic field intensities expected along the tie line route.[16] Condition of Certification **TLSN-3** requires that actual field strengths be measured, according to accepted procedures, to verify that the field intensities are similar to those of other SCE lines. These measurements will reflect both the effectiveness of the field reduction techniques used and the project's potential contribution to area EMF levels. (Ex. 200, p. C.11-10.)

Since there are no residences in the vicinity of the project's line, there will not be long-term human residential EMF exposures. The only project-related EMF exposures of potential significance are the short-term exposures of plant

[16] Estimates are specified for a height of one meter above the ground, in units of kilovolts per meter (kV/m) for the electric field and milligauss (mG) for the companion magnetic field. The maximum electric field strength (1.85 kV/m) and the maximum magnetic field intensity (50.5 mG) calculated at the edge of the right-of-way are consistent with those of other SCE lines of similar design and voltage ratings. (Ex. 200, p. C.11-10.)

workers, regulatory inspectors, maintenance personnel, visitors, or individuals in the immediate vicinity of the lines. The evidence shows that these types of exposures are not significantly related to an adverse health effect. (Ex. 200, p. C.11-9.)

Overall, the evidence shows that the project's generation tie line will be designed, constructed, operated, and maintained in compliance with applicable LORS. Implementation of the Conditions of Certification will ensure that any impacts are reduced to less than significant levels. (Ex. 200, pp. C.11-14 to C.11-15.)

Finally, the evidence addresses the impacts of the Reconfigured Alternative, the Reduced Acreage Alternative, and the various No Project Alternatives in regard to this topic area. None of the Alternatives would substantially alter the level of impact posed by the project; moreover the Blythe Project does not create significant adverse effects in this topic area. Therefore, it is not necessary to consider any of the project's alternatives as a means of reducing impacts to below a level of significance. (Ex. 200, pp. C.11-10 to C.11-15.)

FINDINGS OF FACT

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

1. The Blythe Solar Power Project's transmission facilities consist of an on-site 500-kV switchyard and a ten mile long, 230-kV double-circuit overhead transmission tie line extending from the switchyard to SCE's planned Colorado River Substation.
2. The evidentiary record includes analyses of potential impacts from the project's generation tie line involving aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and EMF exposure.
3. The tie line traverses primarily uninhabited desert land. There are only two residences in the project's immediate area.
4. The available scientific evidence does not establish that EMF fields pose a significant health hazard to humans.
5. The electric and magnetic fields generated by the project's generation tie line will be managed to the extent the CPUC considers appropriate, based on available health effects information.
6. The project's generation tie line will comply with existing LORS for public health and safety.

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

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

9. The Conditions of Certification below, as well as those pertinent to aviation safety as specified in the **Traffic and Transportation** section of this Decision, ensure that the new generation tie line will not result in significant adverse environmental impacts to public health and safety or cause significant direct, indirect, or cumulative impacts as a result of aviation collisions, radio frequency communication interference, fire danger, nuisance or hazardous shocks, or electric and magnetic field exposure.

10. The record addresses the impacts of the Reconfigured Alternative, the Reduced Acreage Alternative, and the various No Project Alternatives in regard to this topic area.

11. Implementation of any of the Alternatives mentioned above is not necessary or preferable as a means of reducing project related impacts to below a level of significance.

CONCLUSIONS OF LAW

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

2. With implementation of the Conditions below and those relevant to aviation safety in the **Traffic and Transportation** section, the Blythe Project's transmission tie line will not create a significant impact due to safety and nuisance factors.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission line according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2. High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, and Southern California Edison's Electric's EMF reduction

guidelines. The Project will follow Southern California Edison's EMF resign guideline for the design and construction of the 230kV interconnection line except where it conflicts with Federal Aviation Agency (FAA) and/or the Riverside County Airport Land Use Commission (RCALUC) rules and regulations.

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

TLSN-2 The project owner shall ensure that every reasonable effort will be made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the project-related line and associated switchyards.

Verification: All reports of line-related complaints shall be summarized for the project-related lines and included during the first five years of plant operation in the Annual Compliance Report.

TLSN-3 The project owner shall use a qualified individual to measure the strengths of the electric and magnetic fields from the line at the points of maximum intensity along the route for which the applicant provided specific estimates. The measurements shall be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed no later than 6 months after the start of operations.

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

TLSN-4 The project owner shall ensure that the rights-of-way of the proposed transmission line are kept free of combustible material, as required under the provisions of section 4292 of the Public Resources Code and section 1250 of Title 14 of the California Code of Regulations.

Verification: During the first 5 years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report.

TLSN-5 The project owner shall ensure that all permanent metallic objects within the right-of-way of the project-related lines are grounded according to industry standards regardless of ownership.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

V. PUBLIC HEALTH AND SAFETY

A. GREENHOUSE GAS (GHG) EMISSIONS

1. INTRODUCTION AND SUMMARY

There is general scientific consensus that climate change is occurring and that human activity contributes in some measure (perhaps substantially) to that change. Man-made emissions of greenhouse gases, if not sufficiently curtailed, are likely to contribute further to continued increases in global temperatures. Indeed, the California Legislature has found that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California" (Cal. Health & Safety Code, sec. 38500, division 25.5, part 1).

The Blythe Solar Power Project (BSPP), as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity generating facilities as currently required by the California Air Resources Board (ARB) for compliance with the California Global Warming Solutions Act of 2006 (AB 32 Núñez, Statutes of 2006, Chapter 488, Health and Safety Code sections 38500 et seq.) However, the project may be subject to future reporting requirements and GHG reductions or trading requirements as these regulations become more fully developed and implemented.

In addition, as a solar project with a nightly shutdown that would operate at less than 60 percent of capacity, it is not subject to the requirements of SB 1368 (Chapter 11, Greenhouse Gases Emission Performance Standard, Article 1, Section 2900 et. seq.). Nonetheless, the BSPP would easily comply with the requirements of SB 1368 and the Greenhouse Gas Emission Performance Standard.

The generation of electricity using fossil fuels, even in a back-up generator at a thermal solar plant, produces air emissions known as greenhouse gases in addition to the criteria air pollutants that have been traditionally regulated under the federal and state Clean Air Acts. California is actively pursuing policies to reduce GHG emissions that include adding non-GHG emitting renewable generation resources to the system.

The greenhouse gases are carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perflurocarbons (PFC). CO_2 emissions are far and away the most common of these emissions; as a result, even though the other GHGs have a greater impact on climate change on a per-unit basis, GHG emissions are often expressed in terms of "metric tons of CO_2-equivalent" ($MTCO_2e$) for simplicity. (Ex. 200, p. C.1-76.)

Since the impact of the GHG emissions from a power plant's operation has global, rather than local, effects, those impacts should be assessed not only by analysis of the plant's emissions, but also in the context of the operation of the entire electricity system of which the plant is an integrated part. Furthermore, the impact of the GHG emissions from a power plant's operation should be analyzed in the context of applicable GHG laws and policies, such as AB 32.

In this part of the Decision we consider:

- Whether BSPP GHG construction emissions will have significant impacts;

- Whether BSPP operation will be consistent with the state's GHG policies and will help achieve the state's GHG goals by causing a decrease in overall electricity system GHG emissions.

2. Policy and Regulatory Framework

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

a. AB 32

The foundation of California's GHG policy is the California Global Warming Solutions Act of 2006. [Assembly Bill 32, codified in Health & Saf. Code, § 38560 et seq. (hereinafter AB 32).] AB 32 requires the California Air Resources Board ("CARB") to adopt regulations that will reduce statewide GHG emissions, by the year 2020, to the level of statewide GHG emissions that existed in 1990. Gubernatorial Executive Order S-3-05 (June 1, 2005) requires a further

reduction, to a level 80 percent below the 1990 GHG emissions, by the year 2050.

Along with all other regulatory agencies in California, the Energy Commission recognizes that meeting the AB 32 goals is vital to the state's economic and environmental health. While AB 32 goals have yet to be translated into regulations that limit GHG emissions from generating facilities, the scoping plan adopted by ARB relies heavily on cost-effective energy efficiency and demand response, renewable energy, and prioritization of generation resources to achieve significant reductions of emissions in the electricity sector by 2020. Even more dramatic reductions in electricity sector emissions would likely be required to meet California's 2050 greenhouse gas reduction goal. Facilities under our jurisdiction, such as BSPP, must be consistent with these policies.[17]

b. Renewable Portfolio Standard

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

c. Emissions Performance Standard

Senate Bill (SB) 1368 of 2006, and regulations adopted by the Energy Commission and the Public Utilities Commission pursuant to the bill, prohibit utilities from entering into long-term commitments with any base load facilities that exceed an Emission Performance Standard (EPS) of 0.500 metric tonnes of CO_2 per megawatt-hour (this is the equivalent of 1100 pounds CO_2/MWh). (Pub. Util. Code, § 8340 et seq.; Cal. Code Regs., tit. 20, § 2900 et seq.; CPUC D0701039.) Currently, the EPS is the only LORS that has the effect of limiting power plant GHG emissions. BSPP is exempt from SB 1368 because it would operate at or below a 60% capacity factor. (Ex. 200, p. C.1-75.)

[17] Of course, BSPP and all other stationary sources will need to comply with any applicable GHG LORS that take effect in the future.

d. Loading Order

In 2003 the Energy Commission and the CPUC agreed on a "loading order" for meeting electricity needs. The first energy resources that should be utilized are energy efficiency and demand response (at the maximum level that is feasible and cost-effective), followed by renewables and distributed generation, combined heat and power (also known as cogeneration), and finally the most efficient available fossil fuel resources and infrastructure development.[18] CARB's AB 32 Scoping Plan reflects these policy preferences. (California Air Resources Board, Climate Change Scoping Plan, December 2008.)

We now turn to a discussion of whether, and how well, BSPP would advance these goals and policies. We begin by reviewing the project's emissions both during construction and during operation.

3. GHG Emissions During Construction of the Facility

Construction of industrial facilities such as power plants involves concentrated on-site activities that result in short-term, unavoidable increases in vehicle and equipment emissions, including greenhouse gases. Construction of the proposed project would last about 69 months. The applicant provided a construction emissions estimate that staff used to calculate greenhouse gas emissions for the entirety of the construction activities. The greenhouse gas emissions estimate, presented below in staff's **Greenhouse Gas Table 2,** was converted by staff into MTCO2E and totaled.

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

Greenhouse Gas Table 2
BSPP Estimated Potential Construction Greenhouse Gas Emissions

Construction Element	CO_2-Equivalent (MTCO2E) [a,b,c]
On-Site Construction Equipment	70,700
On-Site Motor Vehicles	1,800
Off-Site Motor Vehicles	31,400
Construction Total	103,900

Source: Ex. 200, p. C.1-76, Greenhouse Gas Table 2
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
[b] The vast majority of the CO2E emissions, over 99 percent, are CO_2 from these combustion sources.

There is no adopted, enforceable federal or state LORS applicable to BSPP construction emissions of GHG. Nor is there a quantitative threshold over which GHG emissions are considered "significant" under CEQA. Nevertheless, there is guidance from regulatory agencies on how the significance of such emissions should be assessed. For example, the most recent guidance from CARB staff recommends a "best practices" threshold for construction emissions. [CARB, Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (Oct. 24, 2008), p. 9]. Such an approach is also recommended on an interim basis, or proposed, by major local air districts.

We understand that "best practices" includes the implementation of all feasible methods to control construction-related GHG emissions. As the "best practices" approach is currently recommended by the state agency primarily responsible not only for air quality standards but also for GHG regulation, we will use it here to assess the GHG emissions from BSPP construction.

In order to limit vehicle emissions of both criteria pollutants and GHG during construction, BSPP will use (1) operational measures, such as limiting vehicle idling time and shutting down equipment when not in use; (2) regular preventive maintenance to prevent emission increases due to vehicular engine problems; and (3) use of low-emitting diesel engines meeting federal emissions standards for construction equipment, whenever available. (Ex. 200, p. C.1-79.)

Control measures that we have adopted elsewhere in this Decision to address criteria pollutant emissions would further minimize greenhouse gas emissions to the extent feasible. Also, the requirement that the owner use newer construction equipment will increase fuel efficiency and minimize tailpipe emissions. (See, e.g. Condition of Certification **AQ-SC5**.)

We find that the measures described above to directly and indirectly limit the emission of GHGs during the construction of BSPP are in accordance with current best practices. We therefore find that the evidence shows that the GHG emissions from construction activities would not exceed the level of significance.

4. Direct/Indirect Operation Impacts and Mitigation

a. Anticipated Emissions

For this solar project the primary fuel, solar energy, is greenhouse gas-free, but there are two natural gas-fired steam boilers for HTF freeze protection. The proposed BSPP project would cause GHG emissions from the above gas-fired boilers, and gasoline and diesel fuel use in the maintenance vehicles, offsite delivery vehicles, staff and employee vehicles, the four emergency fire water pump engines, and four emergency generator engines. Another GHG emission source for this proposed project is SF_6 from electrical equipment leakage. (Ex. 200, p. C.1-77) Operations GHG emissions are shown in staff's **Greenhouse Gas Table 3**. All emissions are converted to CO_2-equivalent and totaled.

Greenhouse Gas Table 3
Estimated BSPP Potential Operating Greenhouse Gas Emissions

	Annual CO_2-Equivalent (MTCO2E)[a]
Auxiliary Boilers [b]	12,847
Emergency Generators [b]	289
Fire Pumps [b]	31
Maintenance Vehicles [b]	226
Delivery Vehicles [b]	164
Employee Vehicles [b]	1,208
Equipment Leakage (SF_6)	24
Total Project GHG Emissions – MTCO2E [b]	**14,789**
Facility MWh per year	2,100,000
Facility GHG Emission Rate (MTCO2E/MWh)	0.0070

Sources: Solar Millennium 2009a; AECOM 2010a, Attachment DR-Air-2 and DR-AIR-20; Galati & Blek 2010f; and employee vehicle emissions have been estimated by staff.
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
[b] The vast majority of the CO2E emissions, over 99%, is CO_2 from these emission sources.
Source: Ex. 200, p. C.1-77

The proposed project is estimated to emit, directly from primary and secondary emission sources on an annual basis, nearly 17,700 metric tonnes of CO_2-equivalent GHG emissions per year. BSPP, as a renewable energy generation facility, is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 (Chapter 11, Greenhouse Gases Emission Performance Standard, Article 1, Section 2903 [b][1]). Regardless, BSPP has an estimated GHG emission rate of 0.0070 MTCO2E/MWh, well below the Greenhouse Gas Emission Performance Standard of 0.500 MTCO2/MWh.

b. Assessment of Operational Impacts

As we have previously noted, GHG emissions have global, rather than local, impacts. While it may be true that in general, when an agency conducts a CEQA analysis of a proposed project, it does not need to analyze how the operation of the proposed project is going to affect the entire system of projects in a large multistate region, analysis of the impacts of GHG emissions from power plants requires consideration of the project's impacts on the entire electricity system.

California's electricity system – which is actually part of a system serving the entire western region of the U.S., Canada, and Mexico – is large and complex. Hundreds of power plants, thousands of miles of transmission and distribution lines, and millions of points of electricity demand operate in an interconnected, integrated, and simultaneous fashion. Because the system is integrated, and because electricity is produced and consumed instantaneously, and will continue to be until large-scale electricity storage technologies are available, any change in demand and, most important for this analysis, any change in output from any generation source, is likely to affect the output from all generators (*Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications,* CEC-700-2009-004, pp. 20 to 22.)[19] (Hereinafter referred to as "Committee CEQA Guidance")

The California Independent System Operator (CAISO) is responsible for operating the system so that it provides power reliably and at the lowest cost. Thus the CAISO dispatches generating facilities generally in order of cheapest to operate (i.e., typically the most efficient) to most expensive (i.e., typically the least efficient). (*Id*., p. 20.) Because operating cost is correlated with heat rate

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

(the amount of fuel that it takes to generate a unit of electricity), and, in turn, heat rate is directly correlated with emissions (including GHG emissions), when a power plant runs, it usually will take the place of another facility with higher emissions that otherwise would have operated. Due to the integrated nature of the electrical grid, the operational plant and the displaced plant may be hundreds of miles apart (Committee CEQA Guidance, p. 20.) Because one plant's operation could affect GHG emissions hundreds of miles away, the necessity of assessing their operational GHG emissions on a system-wide basis becomes clear.

As California moves towards an increased reliance on renewable energy, non-renewable energy resources will be curtailed or displaced. These potential reductions in non-renewable energy, shown in **Greenhouse Gas Table 4**, could be as much as 36,586 GWh. These predictions are conservative in that the predicted growth in retail sales incorporates the assumption that the impacts of energy efficiency programs are already included in the current retail sales forecast. If, for example, forecasted retail sales in 2020 were lowered by 10,000 GWh due to the success of energy efficiency programs, non-renewable energy needs would fall by an additional 6,700 to 8,000 GWh/year, depending on the RPS level, totaling as much as 45,000 GWh per year of reduced non-renewable energy, depending on the RPS assumed.

Greenhouse Gas Table 4
Estimated Changes in Non-Renewable Energy Potentially Needed to Meet California Loads, 2008-2020

California Electricity Supply	**Annual GWh**	
Statewide Retail Sales, 2008, actual [a]	264,794	
Statewide Retail Sales, 2020, forecast [a]	289,697	
Growth in Retail Sales, 2008-20	24,903	
Growth in Net Energy for Load [b]	29,840	
California Renewable Electricity	**GWh @ 20% RPS**	**GWh @ 33% RPS**
Renewable Energy Requirements, 2020 [c]	57,939	95,600
Current Renewable Energy, 2008	29,174	
Change in Renewable Energy-2008 to 2020	28,765	66,426
Resulting Change in Non-Renewable Energy	176	(36,586)

Source: Ex. 200, p. C.1-80.
Notes:
a. 2009 IPER Demand Forecast, Form 1.1c. Excludes pumping loads for entities that do not have an RPS.
b. 2009 IEPR Demand Forecast, Form 1.5a.
c. RPS requirements are a percentage of retail sales.

High GHG -emitting resources, such as coal, are effectively prohibited from entering into new contracts for California electricity deliveries as a result of the Emissions Performance Standard adopted in 2007 pursuant to SB 1368. Between now and 2020, more than 18,000 GWh of energy procured by California utilities under these contracts will have to reduce GHG emissions or be replaced; these contracts are presented in **Greenhouse Gas Table 5**.

Greenhouse Gas Table 5
Expiring Long-term Contracts with Coal-fired Generation 2009 – 2020

Utility	Facility [a]	Contract Expiration	Annual GWh Delivered to CA
PG&E, SCE	Misc In-state Qual.Facilities [a]	2009-2019	4,086
LADWP	Intermountain	2009-2013	3,163 [b]
City of Riverside	Bonanza, Hunter	2010	385
Department of Water Resources	Reid Gardner	2013 [c]	1,211
SDG&E	Boardman	2013	555
SCE	Four Corners	2016	4,920
Turlock Irrigation District	Boardman	2018	370
LADWP	Navajo	2019	3,832
		TOTAL	**18,522**

Source: Ex. 200, p. C.1-81
Notes:
a. All facilities are located out-of-state except for the Miscellaneous In-state Qualifying Facilities.
b. Estimated annual reduction in energy provided to LADWP by Utah utilities from their entitlement by 2013.
c. Contract not subject to Emission Performance Standard, but the Department of Water Resources has stated its intention not to renew or extend.

This represents almost half of the energy associated with California utility contracts with coal-fired resources that will expire by 2030. If the State enacts a carbon adder[20], all the coal contracts (including those in **Greenhouse Gas Table 5**, which expire by 2020, and other contracts that expire beyond 2020 and are not shown in the table) may be retired at an accelerated rate as coal-fired energy becomes economically uncompetitive. Also shown are the approximate 500 MW

[20] A carbon adder or carbon tax is a specific value added to the cost of a project for per ton of associated carbon or carbon dioxide emissions. Because it is based on, but not limited to, actual operations and emission and can be trued up at year end, it is considered a simple mechanism to assign environmental costs to a project.

of in-state coal and petroleum coke-fired capacity that may be unlikely to contract with California utilities for baseload energy due to SB1368 Emission Performance Standard. As these contracts expire, new and existing generation resources will replace the lost energy and capacity. Some will come from renewable generation; some will come from new and existing natural gas fired generation. All will emit substantially less GHG than the coal and petroleum coke-fired generation, which average about 1.0 $MTCO_2$/MWh without carbon capture and sequestration, resulting in a net reduction in GHG emissions from the California electricity sector.

The State Water Resource Control Board (SWRCB) has proposed substantial changes to OTC units, shown in **Greenhouse Gas Table 6**, which would likely require retrofit, retirement, or substantial curtailment of dozens of generating units. In 2008, these units collectively produced about 58,000 GWh. While those OTC facilities owned and operated by utilities and recently-built combined cycles may well install dry or wet cooling towers, it is unlikely that the aging, merchant plants will do so. Most of these units already operate at low capacity factors, reflecting their limited ability to compete in the current electricity market. New resources would continue to out-compete aging plants, displacing the energy provided by OTC facilities and accelerating their retirement.

It must be noted, however, that a project like BSPP located far from coastal load pockets such as the Greater Los Angeles Local Capacity Area, would likely provide energy support to facilitate the retirement of some aging and/or OTC power plants, but would not likely provide any local capacity support at or near the coastal OTC units. We expect that local capacity and voltage support will increasingly be provided by newer, more-efficient natural gas and other forms of generation, including, to the extent practical, distributed generation resources such as rooftop solar. These resources will also help displace older, less-efficient generation and accelerate retirement of those units.

Greenhouse Gas Table 6
Units Utilizing Once-Through Cooling: Capacity and 2008 Energy Output [a]

Plant, Unit Name	Owner	Local Reliability Area	Aging Plant?	Capacity (MW)	2008 Energy Output (GWh)	GHG Performance (MTCO2/MWh)
Diablo Canyon 1, 2	Utility	None	No	2,232	17,091	Nuclear
San Onofre 2, 3	Utility	L.A. Basin	No	2,246	15,392	Nuclear
Broadway 3 [b]	Utility	L.A. Basin	Yes	75	90	0.648
El Centro 3, 4 [b]	Utility	None	Yes	132	238	0.814
Grayson 3-5 [b]	Utility	LADWP	Yes	108	150	0.799
Grayson CC [b]	Utility	LADWP	Yes	130	27	0.896
Harbor CC	Utility	LADWP	No	227	203	0.509
Haynes 1, 2, 5, 6	Utility	LADWP	Yes	1,046	1,529	0.578
Haynes CC [c]	Utility	LADWP	No	560	3,423	0.376
Humboldt Bay 1, 2 [a]	Utility	Humboldt	Yes	107	507	0.683
Olive 1, 2 [b]	Utility	LADWP	Yes	110	11	1.008
Scattergood 1-3	Utility	LADWP	Yes	803	1,327	0.618
Utility-Owned				**7,776**	**39,988**	**0.693**
Alamitos 1-6	Merchant	L.A. Basin	Yes	1,970	2,533	0.661
Contra Costa 6, 7	Merchant	S.F. Bay	Yes	680	160	0.615
Coolwater 1-4 [b]	Merchant	None	Yes	727	576	0.633
El Segundo 3, 4	Merchant	L.A. Basin	Yes	670	508	0.576
Encina 1-5	Merchant	San Diego	Yes	951	997	0.674
Etiwanda 3, 4 [b]	Merchant	L.A. Basin	Yes	666	848	0.631
Huntington Beach 1, 2	Merchant	L.A. Basin	Yes	430	916	0.591
Huntington Beach 3, 4	Merchant	L.A. Basin	No	450	620	0.563
Mandalay 1, 2	Merchant	Ventura	Yes	436	597	0.528
Morro Bay 3, 4	Merchant	None	Yes	600	83	0.524
Moss Landing 6, 7	Merchant	None	Yes	1,404	1,375	0.661
Moss Landing 1, 2	Merchant	None	No	1,080	5,791	0.378
Ormond Beach 1, 2	Merchant	Ventura	Yes	1,612	783	0.573
Pittsburg 5-7	Merchant	S.F. Bay	Yes	1,332	180	0.673
Potrero 3	Merchant	S.F. Bay	Yes	207	530	0.587
Redondo Beach 5-8	Merchant	L.A. Basin	Yes	1,343	317	0.810
South Bay 1-4	Merchant	San Diego	Yes	696	1,015	0.611
Merchant-Owned				**15,254**	**17,828**	**0.605**
Total In-State OTC				**23,030**	**57,817**	

Source: Ex. 200, p. C.1-83.

a. OTC Humboldt Bay Units 1 and 2 are included in this list. They must retire in 2010 when the new Humboldt Bay Generating Station (not ocean-cooled), currently under construction, enters commercial operation.

b. Units are aging but are not OTC.

The proposed BSPP promotes the state's efforts to move towards a high-renewable, low-GHG electricity system, and, therefore, reduce the amount of natural gas used by electricity generation and greenhouse gas emissions. Its use of solar power, resultant limited GHG emissions, and likely replacement of older existing plant capacity, furthers the state's strategy to promote generation system efficiency and reduce fossil fuel use and GHG emissions.

Net GHG emissions for the integrated electric system will decline when new renewable power plants are added to: 1) move renewable generation towards the 33 percent target; 2) improve the overall efficiency, or GHG emission rate, of the electric system; or 3) serve load growth or capacity needs more efficiently, or with fewer GHG emissions. We find that BSPP furthers the state's progress toward achieving these important goals and is consistent with the state policies we discussed in Section 2 of this chapter.

5. Cumulative Impacts on Greenhouse Gases

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

GHG assessment is by its very nature a cumulative impact assessment. BSPP would emit a limited amount of greenhouse gases and, therefore, we have analyzed its potential cumulative impact in the context of its effect on the electricity system, resulting GHG emissions from the system, and existing GHG regulatory requirements and GHG energy policies. The evidence supports our finding that BSPP would not cause or contribute to a significant adverse cumulative impact on GHG, and would in fact result in a decrease in GHG from the generation of electricity in California.

6. Closure and Decommissioning

Eventually the facility will close, either at the end of its useful life or due to some unexpected situation such as a natural disaster or catastrophic facility breakdown. When the facility closes, all sources of air emissions would cease to operate and thus impacts associated with those greenhouse gas emissions would no longer occur. The only other expected GHG emissions would be temporary equipment exhaust (off-road and on-road) from the dismantling activities. These activities would be of much a shorter duration than construction of the project, equipment is assumed to have lower comparative GHG emissions due to technology advancement, and would be required to be controlled in a manner at least equivalent to that required during construction. Therefore, we find that while there will be a temporary CEQA impact on GHG during decommissioning, it will be less than significant.

7. Mitigation Measures/Proposed Conditions of Certification

No Conditions of Certification related to Greenhouse Gas emissions are proposed. The project owner would comply with any future applicable GHG regulations formulated by the ARB, such as GHG reporting or emissions cap and trade markets.

FINDINGS OF FACT

1. The GHG emissions from the BSPP project construction are likely to be 103,900 $MTCO_2$ equivalent ("$MTCO_2E$") during the 69-month construction period.

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

3. BSPP will use best practices to control its construction-related GHG emissions.

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

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

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

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

8. The maximum annual CO_2 emissions from BSPP operation will be 14,789 $MTCO_2$, which constitutes an emissions performance factor of 0.007 $MTCO_2$ / MWh.

9. The SB 1368 EPS is not applicable to BSPP GHG emissions because the project will be shut down nightly.

10. AB 32 requires CARB to adopt regulations that will reduce statewide GHG emissions, by the year 2020, to the 1990 level. Executive Order S-3-05 requires a further reduction, by the year 2050, to 80 percent below the 1990 level.

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

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

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

14. When it operates, BSPP will displace generation from less-efficient (i.e., higher-heat-rate and therefore higher-GHG-emitting) power plants.

15. BSPP will replace power from coal-fired power plants that will be unable to contract with California utilities under the SB 1368 EPS, and from once-through cooling power plants that must be retired.

16. BSPP operation will reduce overall GHG emissions from the electricity system.

17. The role of fossil fuel-fired generation will diminish as technology advances, coupled with efficiency and conservation measures, make round-the-clock availability of renewables generation feasible.

CONCLUSIONS OF LAW

1. BSPP construction-related GHG emissions will not cause a significant adverse environmental impact.

2. The GHG emissions from a power plant's operation should be assessed in the context of the operation of the entire electricity system of which the plant is an integrated part.

3. BSPP operational GHG emissions will not cause a significant environmental impact.

4. The SB 1368 EPS does not apply to USEGS, but if it did BSPP GHG emissions will meet or exceed it.

5. BSPP operation will help California utilities meet their RPS obligations.

6. BSPP operation will be consistent with California's loading order for power supplies.

7. BSPP operation will foster the achievement of the GHG goals of AB 32 and Executive Order S-3-05.

8. The GHG emissions of any power plant must be assessed within the system on a case-by-case basis to ensure that the project will be consistent with the goals and policies enunciated above.

9. Any new power plant that we certify must:

    a) not increase the overall system heat rate;

    b) not interfere with generation from existing renewables or with the integration of new renewable generation; and

    c) have the ability to reduce system-wide GHG emissions.

B. AIR QUALITY

Operation of the Blythe Solar Power Project (BSPP or proposed project) will create combustion products and use certain hazardous materials that could expose the general public and workers at the facility to potential health effects.

This analysis evaluates the expected air quality impacts from the emissions of criteria air pollutants from both the construction and operation of the BSPP. Criteria air pollutants are defined as air contaminants for which the state and/or federal governments have established ambient air quality standards to protect public health.

The criteria pollutants analyzed within this section are nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), and particulate matter (PM). Lead is not analyzed as a criteria pollutant, but lead and other toxic air pollutant emissions impacts are analyzed in the Public Health Section of this document. Two subsets of particulate matter are inhalable particulate matter (less than 10 microns in diameter, or PM10) and fine particulate matter (less than 2.5 microns in diameter, or PM2.5). Nitrogen oxides (NO_x, consisting primarily of nitric oxide [NO] and NO_2) and volatile organic compound (VOC) emissions readily react in the atmosphere as precursors to ozone and, to a lesser extent, particulate matter. Sulfur oxides (SO_x) readily react in the atmosphere to form particulate matter and are major contributors to acid rain. Global climate change and greenhouse gas (GHG) emissions from the proposed project are analyzed in the context of cumulative impacts.

In consultation with the Mojave Desert Air Quality Management District, (MDAQMD or District), Staff evaluated whether the project will likely conform with applicable laws, ordinances, regulations, and standards (LORS); whether it will likely result in new violations of ambient air quality standards or contribute substantially to existing violations of those standards; whether the project's proposed mitigation measures will likely reduce potential impacts to insignificant levels under the California Environmental Quality Act (CEQA); and whether the project would exceed regulatory benchmarks related to National Environmental Policy Act (NEPA) air quality impacts.

As discussed below, the evidence establishes that the BSPP will meet the provisions of all applicable air quality laws, and with implementation of the mitigation measures set forth in the Conditions of Certification, will not cause any new violations of state or federal standards, even when modeled with worst case

ambient concentrations. Thus, there are no direct adverse air quality impacts attributable to the project. (Exs. 1, § 5.2 and Appen. E; 200, pp. C.1.1 through C.1-64.)

The BSPP will emit substantially lower greenhouse gas[21] emissions per megawatt-hour than fossil fueled generation resources in California. The BSPP, as a renewable energy generation facility, is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 (Chapter 11, Greenhouse Gases Emission Performance Standard, Article 1, Section 2903 [b][1]).

The record includes the assumptions, methodologies, and results of the air quality analyses performed by the Applicant and Staff to evaluate the potential impacts associated with air emissions from construction and operation of the project.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations of air pollutants, called ambient air quality standards (AAQS). The state AAQS, established by the California Air Resources Board (CARB), are typically more protective than the federal AAQS, which are established by the U.S. Environmental Protection Agency (EPA). The standards consist of two parts: an allowable concentration of a pollutant, and an averaging time over which the concentration is to be measured. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (one hour, for instance), or to a relatively lower average concentration over a longer period (8 hours, 24 hours, or 1 month). The state and federal AAQS are listed in **AIR QUALITY Table 1** below.

[21] Greenhouse gas emissions are not criteria pollutants, but they affect global climate change. In that context, the GHG emissions from the proposed project are evaluated in Appendix Air-1 of Exhibit 200, which presents information on GHG emissions related to electricity generation, and describes the applicable GHG standards and requirements.

Air Quality Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.075 ppm [a] (147 µg/m^3)	0.070 ppm (137 µg/m^3)
	1 Hour	—	0.09 ppm (180 µg/m^3)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual	0.053 ppm (100 µg/m^3)	0.03 ppm (57 µg/m^3)
	1 Hour	0.100 ppm (188 µg/m^3)[b]	0.18 ppm (339 µg/m^3)
Sulfur Dioxide (SO_2)	Annual	0.030 ppm (80 µg/m^3)	—
	24 Hour	0.14 ppm (365 µg/m^3)	0.04 ppm (105 µg/m^3)
	3 Hour	0.5 ppm (1300 µg/m^3)	—
	1 Hour	—	0.25 ppm (655 µg/m^3)
Particulate Matter (PM10)	Annual	—	20 µg/m^3
	24 Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual	15 µg/m^3	12 µg/m^3
	24 Hour	35 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_2S)	1 Hour	—	0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 µg/m^3)
Visibility Reducing Particulates	8 Hour	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.

Source: Ex. 200, p. C.1-9.
Notes:
[a] – The 2008 standard is shown above, but as of September 16, 2009 this standard is being reconsidered. The 1997 8-hour standard is 0.08 ppm.
[b] – The U.S. EPA is in the process of implementing this new standard, which became effective April 12, 2010. This standard is based on the 3-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations.

As shown in the table, the averaging times for the various air quality standards and the times over which they are measured, range from one-hour to annual averages. 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 or $\mu g/m^3$, respectively.)

In general, an area is designated as "attainment" if the concentration of a particular air contaminant does not exceed the standard. Likewise, an area is designated as "nonattainment" if concentration of a particular contaminant standard is violated. Where there is insufficient data to support designation as either attainment or nonattainment, the area can be designated as unclassified. An area could be attainment for one air contaminant while nonattainment for another, or attainment under the federal standard and nonattainment under the state standard for the same air contaminant.

1. Existing Air Quality

The project site is located in the Mojave Desert Air Basin (MDAB) and is under the jurisdiction of the MDAQMD. As shown in **Air Quality Table 2,** the Riverside County portion of the MDAB is designated as non-attainment for the state ozone and PM10 standards. This area is designated as attainment or unclassified for all federal criteria pollutant ambient air quality standards and the state CO, NO_2, SO_2, and PM2.5 standards. (Ex. 200, p. C.1-10.)

Air Quality Table 2
Federal and State Attainment Status
Project Site Area within Riverside County

Pollutant	Attainment Status [a]	
	Federal	State
Ozone	Attainment [b]	Moderate Nonattainment
CO	Attainment	Attainment
NO_2	Attainment [c]	Attainment
SO_2	Attainment	Attainment
PM10	Attainment [b]	Nonattainment
$PM_{2.5}$	Attainment	Attainment

Source: Ex. 200, p. C.1-10.
[a] Attainment = Attainment or Unclassified, where Unclassified is treated the same as Attainment for regulatory purposes.
[b] Attainment status for the site area only, not the entire MDAB.
[c] Nitrogen dioxide attainment status for the new federal 1-hour NO2 standard is scheduled to be determined by January 2012.

2. Construction Impacts and Mitigation

The BSPP will be constructed on approximately 7,025 acres. Construction elements would include the four solar power plants (power block and solar array, as well as other ancillary facilities such as the administration buildings, warehouse, and parking lot), an approximately 2-mile natural gas supply pipeline, an electric transmission line to a substation located approximately five miles to the southwest, access roads, and rerouted drainage channels. The total expected duration of project construction will be approximately 69 months. The annual emissions for the shorter duration offsite construction activities are based on the following construction durations: access road construction – 2 months; gas pipeline construction – 4 months; transmission line construction – 8 months.

Two types of construction emissions are anticipated: fugitive dust and combustion emissions. Fugitive dust comes from moving, disturbing, and traveling over the work site and roads, both on- and off-site, including grading/excavation and installation of linear facilities. Fuel combustion emissions come from off-road construction equipment exhausts, on-road vehicles, including heavy duty diesel trucks used for materials delivery and other construction activities, worker personal vehicles, and pickup trucks used to transport workers to and from and around the construction site. Emissions will also be associated with the use of an on-site fuel depot, an on-site batch plant and asphaltic paving during construction. (Ex. 200, pp. C.1-16 to C.1-17.)

Air Quality Table 3 below presents the Applicant's estimate of maximum mitigated annual construction-related emissions for NO_x, VOC, CO, PM10, PM2.5 and SO_x.

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Air Quality Table 3
BSPP Construction - Maximum Annual Emissions (tons/year)

	NOx	VOC	CO	PM10	$PM_{2.5}$	SOx
Construction Emissions						
Main Power Block (entire project)						
Off-road Equipment Exhaust	96.27	10.34	54.68	4.35	3.29	0.21
On-road Vehicles (onsite and offsite)	3.45	0.30	1.84	0.14	0.13	0.00
Asphaltic Paving	--	0.01	--	--	--	--
Fugitive Dust from Paved Roads	--	--	--	0.68	0.31	--
Fugitive Dust from Unpaved Roads	--	--	--	68.77	6.88	--
Fugitive Dust from Construction Activities	--	--	--	26.95	8.29	--
Batch Plant Emissions	2.14	0.16	1.18	2.30	2.30	0.00
Fuel Depot	--	0.64	--	--	--	--
Subtotal - Power Block Emissions	**101.86**	**11.45**	**57.70**	**103.19**	**21.20**	**0.22**
Power Block On-road Equipment (offsite)	34.60	5.00	43.97	11.19	5.71	0.08
Access Road Construction (offsite)	4.66	0.53	2.04	2.53	0.88	0.01
Gas Pipeline Construction (offsite)	0.64	0.09	0.38	0.34	0.12	0.00
Transmission Line Construction (offsite)	0.87	0.10	1.10	0.63	0.23	0.00

Source: Ex. 200, p. C.1-18.
Note: Emissions that were not added may not be additive due to occurring at different times during the construction schedule, and all emissions include fugitive dust as appropriate.

Because the project site is in an area that is in attainment with all NAAQS, the project is not required to develop a General Conformity determination. (Ex. 1, p. 5.2-5.)

Using estimated peak hourly, daily, and annual construction equipment exhaust emissions, the Applicant modeled BSPP's construction emissions to determine impacts. The Applicant's modeling analysis includes onsite fugitive dust and vehicle tailpipe emissions sources and control measures proposed by the Applicant. Staff further evaluated the operation impacts by adding the modeled impacts to the available highest ambient background concentrations recorded during the previous three years from nearby monitoring stations. (Ex. 200, p. C.1-14.) The modeling results are shown below in **Air Quality Table 4**. (Ex. 200, p. C.1-23.)

Air Quality Table 4
Maximum Project Construction Impacts

Pollutants	Avg. Period	Project Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Standard ($\mu g/m^3$)	Percent of Standard
NO_2 [a]	1-hr.	335.9	NA	335.9	339	99%
	Annual	4.3	19	23.3	57	41%
CO	1-hr	1,068.7	2,645	3,714	23,000	16%
	8-hr	423.6	877	901	10,000	9%
PM10	24	43.0	83	126	50	252%
	Annual	3.9	30.5	34.4	20	172%
$PM_{2.5}$	24	14.4	20.5	34.9	35	99%
	Annual	0.6	8.7	9.3	12	77%
SO_2	1-hr	3.4	23.6	27.0	665	4%
	3-hr	2.3	15.6	17.3	1,300	1%
	24	0.6	13.1	13.7	105	13%
	Annual	0.01	3.5	3.5	80	4%

Source: Ex. 200, p. C.1-23.
Note:
[a] Modeled 1-hour NO_2 concentrations were determined using the OLM method with time-matched ambient NO_2background .

As shown, the modeling analysis indicates that, with the exception of PM10, the proposed project would not create new exceedances or contribute to existing exceedances for any of the modeled air pollutants.

However, given the modeled PM10 exceedances, and in light of the existing PM10 and ozone-nonattainment status for the project area, Staff determined that the construction emissions of nonattainment pollutants and their precursors (NO_x, VOC, and PM emissions) are CEQA significant and therefore, the off-road equipment and fugitive dust emissions require mitigation. With implementation of staff-proposed mitigation measures, the construction impacts would not contribute substantially to exceedances of PM10 or ozone standards. (Ex. 200, p. C.1-24.)

The modeling analysis also shows that with implementation of mitigation measures proposed by the Applicant and Staff, project construction is not predicted to cause new exceedances of the NAAQS for attainment pollutants. (Ex. 200, p. C.1-24.) In addition, because the project site is in an area that is in attainment with all NAAQS, the project is not required to develop a General Conformity determination. (Ex. 1, p. 5.2-5.) Therefore, no adverse construction-related NEPA impacts would occur after implementation of the mitigation measures and Conditions of Certification adopted herein. (Ex. 200, p. C.1-24.)

3. Operation Impacts and Mitigation

The BSPP facility would be a nominal 1,000 Megawatt (MW) solar electrical generating facility. While the direct air pollutant emissions from power generation (including initial commissioning) are negligible, stationary and mobile source operating emissions from the project will nonetheless occur from auxiliary equipment and maintenance activities necessary to operate and maintain the facility. (Ex. 200, p. C.1-18 to C-1-19.)

The results of the Applicant's modeling analysis of maximum annual operation emissions are shown below in **Air Quality Table 5.** (Ex. 200, p. C.1-17.) As previously noted, because the project site is in an area that is in attainment with all NAAQS, the project is not required to develop a General Conformity determination. (Ex. 1, p. 5.2-5.)

Air Quality Table 5
BSPP Operations - Maximum Annual Emissions (tons/yr)

	NOx	VOC	CO	PM10	PM2.5	SOx
Onsite Operation Emissions						
Auxiliary Boilers	1.34	0.60	4.54	1.21	1.21	0.03
Emergency Fire Pump Engines	0.19	0.01	0.17	0.01	0.01	0.0003
Emergency Generators	2.93	0.15	1.67	0.10	0.10	0.0031
Auxiliary Cooling Towers	---	---	---	0.53	0.53	---
HTF Vents	---	0.60	---	---	--	---
HTF Fugitives	---	33.90	---	---	--	---
Onsite Maintenance Vehicles	0.22	0.02	0.15	72.69	7.28	0.00
Fuel Depot	**--**	0.09	--	**--**	**--**	**--**
Subtotal of Onsite Emissions	**4.68**	**35.37**	**6.53**	**74.54**	**9.12**	**0.04**
Offsite Emissions						
Delivery Vehicles	1.52	0.11	0.42	0.12	0.08	0.00
Employee Vehicles	0.86	0.90	8.58	1.78	0.83	0.01
Subtotal of Offsite Emissions	**2.38**	**1.01**	**9.00**	**1.90**	**0.91**	**0.01**
Total Maximum Annual Emissions	**7.06**	**36.38**	**15.53**	**76.44**	**10.04**	**0.06**

Source: Ex. 200, p. C.1-20.

A modeling analysis using the EPA-approved AERMOD model was performed to estimate the impacts of the project's NO_2, PM10, PM2.5, CO, and SO_2 maintenance and stationary emissions resulting from project operation. **Air Quality Table 6** presents the results of this modeling analysis added to conservatively estimated worst-case maximum background concentration levels, to determine the cumulative effect. (Ex. 200, pp. C.1-24 to C.1-25.).

Air Quality Table 6
Project Operation Emission Impacts

Pollutants	Avg. Period	Project Impact (μg/m^3)	Background (μg /m^3)	Total Impact (μg /m^3)	Standard (μg /m^3)	Percent of Standard
NO_2	1-hr CAAQS	168.5	119	288	339	85%
	1-hr NAAQS	178.7	NA	178.7	188	95%
	Annual	0.90	19	19.9	57	35%
CO	1-hr	267.6	2,645	2,913	23,000	13%
	8-hr	86.5	878	965	10,000	10%
PM10	24	22.3	83	105.3	50	211%
	Annual	2.7	30.5	33.2	20	166%
$PM_{2.5}$	24	2.9	20.5	23.4	35	67%
	Annual	0.8	8.7	9.5	12	79%
SO_2	1-hr	7.4	23.6	31.0	665	5%
	3-hr	3.1	15.6	18.7	1,300	1%
	24-hr	0.8	13.1	13.9	105	13%
	Annual	0.1	3.5	3.6	80	5%

Source: Ex. 200, p. C.1-25.

As shown, with the exception of 24-hour and annual PM10 impacts, the proposed project would not create new exceedances or contribute to existing exceedances for any of the modeled air pollutants.

Given the modeled PM10 exceedances, and in light of the existing PM10 and ozone nonattainment status for the project area, Staff determined that the operating emissions of nonattainment pollutants and their precursors NOx, VOC, and PM emissions) are potentially CEQA significant and mitigation is required for the stationary equipment, the off-road maintenance equipment, and fugitive dust emissions. (Ex. 200, pp. C.1-25 to C.1-26.)

The record further shows that, based on the modeling analysis and with implementation of recommended mitigation measures, as adopted in the Conditions of Certification below, project operations will not cause new exceedances of NAAQS, and no adverse NEPA impacts will occur. (Ex. 200, p. C.1-26.)

4. Construction and Operation Overlap Impacts and Mitigation

This proposed project includes the construction of four separate power blocks that would start operation at different times, as each completes construction.

Therefore, there would be some overlap between the project construction and operation emissions. However, the maximum short term and annual construction period emissions are forecast to occur just early enough in the construction period that they should not overlap with the operation of the first power block. Additionally, the operating emissions are small in comparison to the construction emissions, so any overlap after the maximum construction period is assumed not to create new emissions impacts. Therefore, the overlapping emissions and impacts during this overlapping period would be no worse than the worst-case construction impacts summarized in **Air Quality Table 4**, and no significant CEQA or adverse NEPA impacts would occur after implementation of the mitigation measures included in the Conditions of Certification adopted herein. (Ex. 200, pp. C.1-20 through C.1-21.)

5. Impacts of Related Projects

This section examines the potential impacts of reasonably foreseeable actions required for the operation of the BSPP. This includes the construction of the Colorado River Substation (CRS), connection of the BSPP generation tie line to the CRS, and connection of telecommunications facilities. These actions would be fully evaluated in a future environmental document, but are analyzed below to the extent possible, based on available information. (Ex. 202, p. A-17.)

Colorado River Substation Construction

The proposed CRS expansion project site would occupy a 45-acre parcel located approximately 1.5 miles south of Interstate 10. The substation and interconnection would generate air pollutant emissions primarily from facility site construction; minor stationary and mobile exhaust emissions would be generated from the post-construction operation and maintenance of the constructed substation. These operational impacts would be less than significant. (Ex. 202, p. A-19.)

Construction-related air emissions would consist of exhaust emissions from heavy-duty diesel construction equipment use, diesel and gasoline fueled on-road delivery trucks, and fugitive dust (particulate matter) emissions from construction activities and from vehicle travel on unpaved surfaces. Construction activities would include site grading, facility installation, wiring, and paving. The access road to the site would likely be Wiley's Well Road, which is approximately 4.75 miles west of the center of the project site. Five miles of unpaved road distance for each vehicle trip are assumed in the emission estimates. Project

emissions from the substation construction compared to the applicable thresholds are presented in **Air Quality Table 7** below.

The proposed project construction would start in the fourth quarter of 2010 and would occur over 21 months. Different phases of the construction would overlap as necessary during the construction period. (Ex. 202, p. A-20.)

Air Quality Table 7
CRS Expansion – Maximum Daily and Annual Construction Emissions

	NOx	SOx	CO	VOC	PM10	PM2.5
Maximum Daily Emissions (lbs/day)						
CRS Expansion Project Emissions	72.77	2.37	32.86	10.42	308.52	52.85
Significant Threshold	137	137	548	137	82	82
Threshold Exceeded?	No	No	No	No	Yes	No
Maximum Annual Emissions (ton/year)						
CRS Expansion Project Emissions	5.43	0.01	2.65	0.63	21.96	4.10
Significant Threshold	25	25	100	25	15	15
Threshold Exceeded?	No	No	No	No	Yes	No

Note: Significance of the project impacts are determined using the significance criteria/thresholds that SCE would be expected to use in the subsequent analysis for the Project, which are not the significance criteria/thresholds used by the Energy Commission for power plant significance determination.
Source: Ex. 202, p. A-20.

The worst-case PM10 emissions would exceed the MDAQMD daily and annual significant thresholds, because of the long unpaved road distance from Wiley's Well Road to the site. Paving the main access road would reduce the construction emissions to less than significant and also would reduce operating/maintenance emissions. (Ex. 202, p. A-20.)

Generation Tie Line Connection and Telecommunication System

Connecting the generation tie line to the CRS would include the installation of primary conductor and overhead ground wire (OHGW), vibration dampeners, weights, spacers, and suspension and dead-end hardware assemblies. A telecommunication system is also required, to provide monitoring and remote operation capabilities of the electrical element at the BSPP substation. This would include line protection, installation of Supervisory Control and Data Acquisition (SCADA) and a telecommunications circuit from the BSPP Substation to the CRS on an optical system utilizing OPGW on the 220 kV generation tie line. The buried telecom line from the BSPP to the CRS would be constructed within the natural gas line/access road and generation tie routes. (Ex. 202, p. A-21.)

Operation of the generation tie line/telecommunications system project would generate minor stationary and mobile exhaust emissions from operation and maintenance of the proposed facilities (i.e., fiber optic lines). These operational impacts would be less than significant. (Ex. 202, p. A-19.)

Construction-related air emissions would consist of exhaust emissions from heavy-duty diesel construction equipment use, diesel and gasoline fueled on-road trucks, and fugitive dust emissions from construction activities and from vehicle travel on unpaved roads. Construction of the generation tie line would be temporary and short-term, approximately two days. Construction of the telecommunications system also would be temporary and short-term. As a result, construction emissions would be lower than the significance thresholds shown in **Table 8** and, therefore, less than significant. (Ex. 202, p. A-21.)

Impact Minimization Measures

As noted, the CRS construction, generation tie line connection and telecommunication system project would be fully evaluated in a future environmental document, but would be required to comply with all MDAQMD rules, including portable equipment rules, which would dictate how the equipment could be operated. Mitigation measures would be implemented in compliance with the MDAQMD Ozone State Implementation Plan to reduce the emissions generated during project construction and operation. (Ex. 202, pp. A-21 and A-22.)

Construction-related activities and emissions at the project site are consistent with activities and emissions encountered at any construction site. The following construction permits would be required: 1) grading permit; 2) SWPPP requirements (construction site provisions); 3) use permit; and 4) building permits.

Construction phase emissions are generally short-term in duration, considering the lifetime of the project. Effective and comprehensive control measures would be needed to reduce equipment and fugitive dust emissions to the extent feasible. Staff recommends that the following measures be implemented during construction to mitigate potential impacts to air quality:

- Implement fugitive dust control requirements, including paving the main access road to the CRS site before primary construction activities begin,

watering active construction areas, implementing trackout controls, and applying other activity-specific control measures to reduce fugitive dust emissions during construction.

- Limit the potential offsite impacts from visible dust emissions, by responding to situations when the fugitive dust control measures are not working effectively to control fugitive dust from leaving the construction area.

- Mitigate the PM and NOx emissions from large diesel-fueled construction equipment by using newer cleaner engines and other various control measures such as idle time restrictions, engine maintenance, etc.

These measures would be consistent with the Conditions of Certification for the BSPP included in this document. With effective and comprehensive control measures such as these, dust and equipment exhaust impacts would be reduced to less than significant levels. (Ex. 202, p. A-22.)

6. Cumulative Impacts

Cumulative impacts result from the proposed project's incremental effect, together with other closely related past, present and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Res. Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15130, 15355.)

The air quality analysis discussed herein is concerned with criteria air pollutants, which have impacts that are usually (though not always) cumulative by nature. Although a project by itself would rarely cause a violation of a federal or state criteria pollutant standard, a new source of pollution may contribute to violations of criteria pollutant standards because of the existing background sources or foreseeable future projects.

The record contains extensive analyses of cumulative impacts to air quality during project construction and operation, including a description of the air quality background in the Riverside County portion of the MDAB, and discusses historical ambient levels for each of the assessed criteria pollutants, and the proposed project's contribution to the local existing background caused by project construction and operation. (Exs. 1, pp. 5.2-53 to 5.2-54; 200 pp. C.1-35 to C.1-39.)

The record also contains a summary of projections for criteria pollutants, and the MDAQMD's programmatic efforts to abate such pollution, an analysis of the project's localized cumulative impacts, and the project's direct operating emissions combined with other local major emission sources.

The air quality plan does not outline any new control measures applicable to the proposed project's operating emission sources. Therefore, compliance with existing MDAQMD rules and regulations would ensure compliance with those air quality plans. (Ex. 200, p. C.1-37.)

Furthermore, the Applicant, in consultation with the District, has conducted a survey of new development and stationary sources that are either under construction, or have received permits to be built or operate in the near future and that have the potential for emissions of criteria air contaminants within six miles of the project site. The survey results indicate that there are three major stationary source projects within a six mile radius from the BSPP site and those three projects were included with the project's operation in cumulative impacts modeling analysis. (Ex. 200, pp. C.1-38 through C.1-39.) The three specific stationary source projects included in the cumulative modeling analysis are:

- Blythe Energy Project, which is currently operating at a low capacity factor due to transmission line constraints.

- Blythe Energy Project Phase II, which is not yet built.

- SoCalGas Compressor Station, which is in the process of being modernized.

There are other proposed construction projects near the proposed project site such as other proposed renewable energy projects; however, the timeframe and emissions from these projects is unknown and these construction projects would be limited in duration. Meanwhile emissions from existing mobile emission sources, such as the I-10 freeway and agriculture are forecast to have long-term emission reductions or significantly reduced emission potentials for most pollutants through improvements in on-road and off-road vehicle engine technology and vehicle turnover, respectively.

With regard to cumulative operating impacts, the modeling evaluated in the record indicates that the addition of the cumulative projects would not appreciably change the impacts from those determined for the project. Therefore, the same analysis and findings apply for cumulative operating impacts as noted

for project operations. While the consideration of the conditions that create high background PM10 concentrations and high cumulative impact concentrations are very different, the actual worst-case incremental impacts for PM10 are lower than indicated in **Air Quality Table 6** and would not substantially contribute to exceedances of the PM10 CAAQS or appreciably change the impacts from those determined for the project.

In addition to the cumulative projects modeled by the Applicant, several solar and wind projects are pending in the Blythe area and along the I-10 corridor, including two thermal solar projects, the Palen Solar Power Project and Genesis Solar Energy Project siting cases, which are currently being evaluated by the Energy Commission and BLM. This potential for significant additional development within the air basin and corresponding increase in air basin emissions is a major part of staff's rationale for recommending Conditions of Certification **AQ-SC6** and **AQ-SC7,** which are designed to mitigate the proposed project's cumulative impacts by reducing the dedicated on-site vehicle emissions and fugitive dust emissions during site operation. We adopt those Conditions of Certification as part of this Decision and find that implementation of those Conditions of Certification will mitigate the proposed project's cumulative impacts to air quality to below the level of significance. (Ex. 200, p. C.1-39.) In addition, since the project's cumulative air quality impacts have been mitigated to less than significant, there is no environmental justice issue for air quality.

7. Compliance with LORS

The project is expected to comply with all relevant federal and state LORS. (Ex. 200, p. C.1-40.)

The MDAQMD issued a Final Determination of Compliance on July 8, 2010. Compliance with all District rules and regulations was demonstrated to the District's satisfaction in the FDOC. (Ex. 209; 7/15/10 RT 11.)The MDAQMD's PDOC conditions are presented in the Conditions of Certification (**AQ-1** to **AQ-60**), which we hereby adopt.

A fugitive dust management plan for unpaved roads is discussed in District Rule 805. Implementation of staff-recommended mitigation measures **AQ-SC3, AQ-SC4** and **AQ-SC7,** which we hereby adopt, will reduce the project's contributions to fugitive dust emissions to below the level of significance.

In addition, Staff recommends several other Conditions of Certification designed to reduce the project's air quality impacts to below the level of significance. We hereby adopt all of Staff's recommended Conditions of Certification, **AQ-SC1** through **AQ-SC8**.

FINDINGS OF FACT

Based on the persuasive weight of the evidence of record, we find as follows:

1. The proposed Blythe Solar Power Project in the Mojave Desert Air Basin and is under the jurisdiction of the Mojave Desert Air Quality Management District.

2. The Riverside County portion of the Mojave Desert Air Basin area is designated as attainment for all federal criteria pollutant standards, and nonattainment for state ozone and PM10 standards.

3. The project will not cause new violations of any NO_2, SO_2, PM2.5 or CO ambient air quality standards. Therefore, the NO_x, SO_x, PM2.5 and CO emission impacts are not significant.

4. The project's construction and operational emissions can contribute to the existing violations of the ozone and PM10 air quality standards. However, the required mitigation will mitigate the project's impacts to a level that is less than significant.

5. The Mojave Desert Air Quality Management District issued a Final Determination of Compliance on July 8, 2010, imposing conditions of compliance on project construction and operation to ensure compliance with District Rules and Regulations. These Rules and Regulations are incorporated into the Conditions of Certification below.

6. The project's construction-related impacts are temporary and short-term in nature. They are mitigated to below a level of significance by measures identified in the Conditions of Certification.

7. The proposed project would be consistent with the requirements of SB 1368 and the Emission Performance Standard for greenhouse gases.

8. The record contains an adequate analysis of the project's contributions to cumulative air quality impacts.

9. Projects, which have been constructed, undergoing construction, or otherwise reasonably foreseeable have been considered in the cumulative impact analyses of record. Impacts arguably attributable to such projects do not alter

conclusions reached concerning the BSPP contribution to cumulative air quality impacts.

10. Implementation of the Conditions of Certification listed below ensures that the BSPP will not result in any significant direct, indirect, or cumulative adverse impacts to air quality.

CONCLUSION OF LAW

1. The Commission therefore concludes that with implementation of the Conditions of Certification will ensure that the BSPP will conform with all applicable laws, ordinances, regulations, and standards relating to air quality, as set forth in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

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

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.

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

Verification: At least 30 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site. The following fugitive dust mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**, and any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

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

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

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

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

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

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

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

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

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

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

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

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

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

n. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all

construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions:

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

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

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

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities~~,~~ indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed.

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

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

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

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report to include:

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

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

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

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

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

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

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being

used for the engine in question; or

2. The construction equipment is intended to be on site for 10 days or less.

3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.

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

1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.

2. The retrofit control device is causing or is reasonably expected to cause engine damage.

3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.

4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

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

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

f. Construction equipment will employ electric motors when feasible.

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

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

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

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

AQ-SC6 The project owner, when obtaining dedicated on-road or off-road vehicles for mirror washing activities and other facility maintenance activities, shall only obtain vehicles that meet California on-road vehicle emission standards or appropriate U.S.EPA/California off-road engine emission standards for the latest model year available when obtained.

Verification: At least 30 days prior to the start commercial operation, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report.

AQ-SC7 The project owner shall provide a site Operations Dust Control Plan, including all applicable fugitive dust control measures identified in the verification of **AQ-SC3** that would be applicable to minimizing fugitive dust emission creation from operation and maintenance activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site; that:

A. describes the active operations and wind erosion control techniques such as windbreaks and chemical dust suppressants, including their ongoing maintenance procedures, that shall be used on areas that could be disturbed by vehicles or wind anywhere within the project boundaries; and

B. identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only. In addition, vehicle speed shall be limited to no more than 10 miles per hour on these unpaved roadways, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

The site operations fugitive dust control plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads and disturbed off-road areas, or alternative methods for stabilizing disturbed off-road areas, within the project boundaries, and shall

include the inspection and maintenance procedures that will be undertaken to ensure that the unpaved roads remain stabilized. The soil stabilizer used shall be a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as or more efficient for fugitive dust control than ARB approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control.

The performance and application of the fugitive dust controls shall also be measured against and meet the performance requirements of condition **AQ-SC4**. The measures and performance requirements of **AQ-SC4** shall also be included in the operations dust control plan.

Verification: At least 30 days prior to start of commercial operation, the project owner shall submit to the CPM for review and approval a copy of the site Operations Dust Control Plan that identifies the dust and erosion control procedures, including effectiveness and environmental data for the proposed soil stabilizer, that will be used during operation of the project and that identifies all locations of the speed limit signs. Within 60 days after commercial operation, the project owner shall provide to the CPM a report identifying the locations of all speed limit signs, and a copy of the project employee and contractor training manual that clearly identifies that project employees and contractors are required to comply with the dust and erosion control procedures and on-site speed limits.

AQ-SC8 The project owner shall provide the CPM copies of all District issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) documents for the facility.

The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project federal air permit. The project owner shall submit to the CPM any modification to any federal air permit proposed by the District or U.S. Environmental Protection Agency (U.S. EPA), and any revised federal air permit issued by the District or U.S. EPA, for the project.

Verification: The project owner shall submit any ATC, PTO, and proposed federal air permit modifications to the CPM within 5 working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified ATC/PTO documents and all federal air permits to the CPM within 15 days of receipt.

District Preliminary Determination of Compliance Conditions (MADQMD 2010b)

AUXILIARY BOILER CONDITIONS

Equipment Description

Four - 35 MMBtu/hr Natural Gas Fired Auxiliary Boilers, Application Number/Permit Number: 0010748/B010913, 0010755/B010915, 0010762/B010916, and 0010769/B010917.

AQ-1 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

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

AQ-2 This equipment shall be exclusively fueled with natural gas and shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

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

AQ-3 This equipment is subject to the federal NSPS codified at 40 CFR Part 60, Subparts A (General Provisions) and Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units).

Verification: The project owner shall complete and submit to the CPM a compliance plan that provides a list of the 40 CFR 60 Subpart A and Dc plans, tests, and recordkeeping requirements and their compliance schedule dates as applicable for the boilers at least 30 days prior to first fire of the boiler or earlier as necessary for compliance with Subpart A and Dc.

AQ-4 Emissions from this equipment shall not exceed the following hourly emission limits at any firing rate, verified by fuel use and compliance tests:

a. NOx as NO_2:

1. 0.389 lb/hr operating at 100% load (based on 9.0 ppmvd corrected to 3% O_2 and averaged over one hour)

2. 0.097 lb/hr operating at 25% load (based on 9.0 ppmvd corrected to 3% O_2 and averaged over one hour)

b. CO:

1. 1.322 lb/hr operating at 100% load (based on 50 ppmvd corrected to 3% O_2 and averaged over one hour)

2. 0.331 operating at 25% load (based on 50 ppmvd corrected to 3% O_2 and averaged over one hour)

c. VOC as CH_4:

1. 0.175 lb/hr operating at 100% load

2. 0.044 lb/hr operating at 25% load

d. SOx as SO_2:

1. 0.019~~0~~ lb/hr operating at 100% load

2. 0.005~~2~~ lb/hr operating at 25% load

e. PM10:

1. 0.035 lb/hr operating at 100% load

2. 0.088 lb/hr operating at 25% load

Verification: As part of the Annual Compliance Report, the project owner shall include information demonstrating compliance with boiler operating emission rates.

AQ-5 This equipment shall be operated only on PUC pipeline quality natural gas and shall be equipped with a non-resettable fuel meter. Fuel used shall not exceed:

a. 57,499,425 cubic feet of natural gas per rolling twelve months; and

b. 441,662 cubic feet of natural gas per calendar day.

Verification: The project owner shall submit to the CPM the boiler fuel use data demonstrating compliance with this condition as part of the Annual Operation Report.

AQ-6 Operation of this equipment shall not exceed 17 total hours per day with no more than:

a. 15 hours per calendar day and 4500 hours per rolling twelve months at 25% load; and

b. 12 hours per calendar day and 600 hours per rolling twelve months at 100% load.

Verification: The project owner shall submit to the CPM the boiler fuel use data demonstrating compliance with this condition as part of the Annual Operation Report.

AQ-7 The project owner shall maintain an operations log for this equipment on-site and current for a minimum of five (5) years, and said log shall

be provided to District personnel on request. The operations log shall include the following information at a minimum:

a. Total operation time (hours/day, hours/month and cumulative hours/rolling twelve months);

b. Fuel use (daily, monthly and cumulative hours/rolling twelve months);

c. Maximum hourly, maximum daily, total quarterly, and total calendar year emissions of NOx, CO, PM10, VOC and SOx (including calculation protocol); and,

d. Any permanent changes made to the equipment that would affect air pollutant emissions, and indicate when changes were made.

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

AQ-8 Records of fuel supplier certifications of fuel sulfur content shall be maintained to demonstrate compliance with the sulfur dioxide and particulate matter emissions limits.

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

AQ-9 The project owner shall continuously monitor fuel flow rate and flue gas oxygen level.

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

AQ-10 The project owner shall perform an initial compliance test on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual within 180 days of initial start up. The test report shall be submitted to the District within 6 weeks of performance of the test. The initial compliance test shall be for all items listed in condition **AQ-4** above, in addition to:

a. NO_x as NO_2 in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Methods 19 and 20).

b. CO in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Method 10).

c. PM_{10} in mg/m^3 at 3% oxygen and lb/hr (measured per USEPA Reference Methods 5 and 202 or CARB Method 5).

d. Opacity (measured per USEPA reference Method 9).

e. Flue gas flow rate in dscf per minute.

f. VOC as CH_4 in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Methods 25A and 18).

g. SOx as SO_2 in ppmvd at 3% oxygen calculated based on fuel supplier provided information.

Verification: The project owner shall notify the District and the CPM within 15 working days before the execution of the compliance test required in this condition. The test results shall be submitted to the District and to the CPM within the timeframe required by this condition.

AQ-11 The project owner shall perform annual compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District no later than six weeks prior to the expiration date of this permit. The following compliance tests are required:

a. NO_x as NO_2 in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Methods 19 and 20).

b. CO in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Method 10).

c. Flue gas flow rate in dscf per minute.

d. Opacity (measured per USEPA reference Method 9).

Verification: The project owner shall notify the District and the CPM within 15 working days before the execution of the initial compliance test required in this condition. The test results shall be submitted to the District and to the CPM within 6 weeks of the date of the tests.

AQ-12 This unit shall be tuned annually in accordance with the tuning procedure referenced in District Rule 1157 Section (I) or a modification of the tuning procedure described in Section (I) as approved by the District, or the permit unit manufacturer's specified tune-up procedure, by a technician that is qualified, to the satisfaction of the District, to perform a tune-up;

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

ULLAGE SYSTEM CONDITIONS

Equipment Description

Four - HTF ullage expansion tanks, Application Number/Permit Number: 0010750/T010934, 0010757/T010935, 0010764/T010936, and 0010771/T010937.

AQ-13 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

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

AQ-14 This system shall store only HTF, specifically the condensable fraction of the vapors vented from the ullage system.

Verification: The project owner shall make the site available for inspection of HTF piping Inspection and Maintenance Program records (**AQ-17**) and HTF system equipment by representatives of the District, ARB, and the Energy Commission.

AQ-15 This system shall be operated at all times with the carbon adsorption system under District permit C010918, C010919, C010920, C010921.

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

AQ-16 Vent release shall be monitored in accordance with a District approved Inspection, Monitoring and Maintenance plan.

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

AQ-17 The project owner shall establish an inspection and maintenance program to determine, repair, and log leaks in HTF piping network and expansion tanks. Inspection and maintenance program and documentation shall be available to District staff upon request.

a. All pumps, compressors and pressure relief devices (pressure relief valves or rupture disks) shall be electronically, audio, or visually inspected once every operating day.

b. All accessible valves, fittings, pressure relief devices (PRDs), hatches, pumps, compressors, etc. shall be inspected quarterly using a leak detection device such as a Foxboro OVA 108 calibrated for methane.

c. Inspection frequency for accessible components, except pumps, compressors and pressure relief valves, may be changed from

quarterly to annual when two percent or less of the components within a component type are found to leak during an inspection for five consecutive quarters.

d. Inspection frequency for accessible components, except pumps, compressors and pressure relief valves, shall be increased to quarterly when more than two percent of the components within a component type are found to leak during any inspection or report.

e. If any evidence of a potential leak is found the indication of the potential leak shall be eliminated within 7 calendar days of detection.

f. VOC leaks greater than 10,000-ppmv shall be repaired within 24-hours of detection.

g. After a repair, the component shall be re-inspected for leaks as soon as practicable, but no later than 30 days after the date on which the component is repaired and placed in service.

h. The project owner shall maintain a log of all VOC leaks exceeding 10,000-ppmv, including location, component type, date of leak detection, emission level (ppmv), method of leak detection, date of repair, date and emission level of reinspection after leak is repaired.

i. The project owner shall maintain records of the total number of components inspected, and the total number and percentage of leaking components found, by component types made.

j The project owner shall maintain record of the amount of HTF replaced on a monthly basis for a period of 5 years.

Verification: The inspection and maintenance plan shall be submitted to the CPM for review and approval at least 30 days before taking delivery of the HTF. As part of the Annual Compliance Report, the project owner shall provide the quantity of used HTF fluid removed from the system and the amount of new HTF fluid added to the system each year. The project owner shall make the site available for inspection of HTF piping Inspection and Maintenance Program records and HTF system equipment by representatives of the District, ARB, and the Energy Commission.

AQ-18 The project owner shall submit to the District a compliance test protocol within sixty (60) days of start-up and shall conduct all required compliance/certification tests in accordance with a District-approved test plan. Thirty (30) days prior to the compliance/certification tests the project owner shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an

observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District within forty-five (45) days after testing.

Verification: The project owner shall provide a compliance test protocol to the District for approval and CPM for review at least no later than sixty (60) days after start-up and submit a test plan to the District for approval and CPM for review at least thirty (30) days prior to the compliance tests. The project owner shall notify the District and the CPM within ten (10) working days before the execution of the compliance tests required in **AQ-19** and **AQ-20**, and the test results shall be submitted to the District and to the CPM within forty-five (45) days after the tests are conducted.

AQ-19 The project owner shall perform the following initial compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District within 180 days of initial start up. The following compliance tests are required:

a. VOC as CH_4 in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

Verification: The project owner shall submit the test results to the District and to the CPM within 180 days after initial start up.

AQ-20 The project owner shall perform the following annual compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District no later than six weeks prior to the expiration date of this permit. The following compliance tests are required:

a. VOC as CH_4 in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).

b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

Additionally, records of all compliance tests shall be maintained on site for a period of five (5) years and presented to District personnel upon request.

Verification: As part of the Annual Compliance Report, the project owner shall include the test results demonstrating compliance with this condition and the project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-21 Emissions from this equipment may not exceed the following emission limits, based on a calendar day summary:

a. VOC as CH_4 – 1.5 lb/day, verified by compliance test.

b. Benzene – 0.75 lb/day, verified by compliance test.

Verification: As part of the Annual Compliance Report, the project owner shall include the test results demonstrating compliance with this condition and the project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-22 If current non-criteria substances become regulated as toxic or hazardous substances and are used in this equipment, the project owner shall submit to the District a plan demonstrating how compliance will be achieved and maintained with such regulations.

Verification: The project owner shall a copy of the plan prepared to comply with this condition, if and when necessary, to the CPM for review within 30 days of submittal to the District.

CARBON ADSORPTION SYSTEM CONDITIONS

Equipment Description

Four - carbon adsorption systems, one serving each HTF ullage system, Application Number/Permit Number: 0010751/C010918, 0010758/C010919, 0010765/C010920, and 0010772/C010921.

AQ-23 Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

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

AQ-24 This carbon adsorption system shall provide 98% control efficiency of VOC emissions vented from the HTF ullage system under District Permit [T010934, T010935, T010936, T010937].

Verification: The project owner shall provide the District and CPM carbon adsorption manufacturer guarantee data showing compliance with this condition at least 30 days prior to the installation of the carbon adsorption systems.

AQ-25 The project owner shall prepare and submit a monitoring and change-out plan for the carbon adsorptions system which ensures that the system is operating at optimal control efficiency at all times for District approval prior to start up.

Verification: The project owner shall submit a monitoring and change-out plan for the carbon adsorptions system for District approval and CPM review prior to facility start-up.

AQ-26 This equipment shall be properly maintained and kept in good operating condition at all times.

Verification: The project owner shall submit maintenance reports for carbon adsorption system to the CPM as part of Annual Compliance Report.

AQ-27 This equipment must be in use and operating properly at all times the HTF ullage system is venting.

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

AQ-28 Total emissions of VOC to the atmosphere shall not exceed 1.5 lbs/day and 300 lbs/year calculated based on the most recent monitoring results.

Verification: As part of the Annual Compliance Report the project owner shall include information on operating emission rates to demonstrate compliance with this condition.

AQ-29 During operation, the project owner shall monitor VOC measured at outlet from the carbon beds. Sampling is to be performed on a weekly basis. Samples shall be analyzed pursuant to USEPA Test Method 25 – Gaseous Non-methane Organic Emissions. Initial test shall be submitted to the District within 180 days after startup.

Verification: The project owner shall provide a summary of the carbon bed monitoring data as part of the Annual Compliance Report and shall submit tests to the District as required in this condition.

AQ-30 FID shall be considered invalid if not calibrated on the day of required use.

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

AQ-31 The project owner shall maintain current and on-site for the duration of the project a log of the weekly test results, which shall be provided to District personnel upon request, with date and time the monitoring was conducted.

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

AQ-32 Prior to January 31 of each new year, the project owner of this unit shall submit to the District a summary report of all VOC emissions (as hexane).

Verification: The project owner shall provide a summary of the HTF vent system benzene and VOC emissions to the CPM as part of the Annual Compliance Report and to the District by January 31 each year.

COOLING TOWER CONDITIONS

Equipment Description

Four Cooling Towers, Application Number: 0010752, 0010759, 0010766 and 0010773.

AQ-33 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

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

AQ-34 This equipment shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

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

AQ-35 The drift rate shall not exceed 0.0005 percent with a maximum circulation rate of 6,034 gallons per minute. The maximum hourly PM10 emission rate shall not exceed 0.061 pounds per hour, as calculated per the written District-approved protocol.

Verification: The manufacturer guarantee data for the drift eliminator, showing compliance with this condition, shall be provided to the CPM and the District 30 days prior to cooling tower operation. As part of the Annual Compliance Report the project owner shall include information on operating emission rates to demonstrate compliance with this condition.

AQ-36 The project owner shall perform weekly tests of the blow-down water total dissolved solids (TDS). The TDS shall not exceed 2,000 ppmv based on an arithmetic average of all TDS measurements conducted each month. The operator shall maintain a log which contains the date and result of each blow-down water test in TDS ppm, and the resulting mass emission rate. This log shall be maintained on site for a minimum of five (5) years and shall be provided to District personnel on request.

Verification: The cooling tower recirculation water TDS content test results shall be provided to representatives of the District, ARB, and the Energy Commission upon request.

AQ-37 The project owner shall conduct all required cooling tower water tests in accordance with a District-approved test and emissions calculation protocol. Thirty (30) days prior to the first such test the project owner shall provide a written test and emissions calculation protocol for District review and approval.

Verification: The project owner shall provide an emissions calculation and water sample testing protocol to the District for approval and CPM for review at least 30 days prior to the first cooling tower water test.

AQ-38 A maintenance procedure shall be established that states how often and what procedures will be used to ensure the integrity of the drift eliminators. This procedure is to be kept onsite and available to District personnel on request.

Verification: The project owner shall make available at request the written drift eliminator maintenance procedures for inspection by representatives of the District, ARB, and the Energy Commission.

EMERGENCY GENERATOR CONDITIONS

Equipment Description

Four – 2,922 hp emergency IC engine each driving a generator, Application Number/Permit Number: 0010753/E010926, 0010760/E010927, 0010767/E010928, and 0010774/E010929.

AQ-39 This equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.

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

AQ-40 This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements.

Verification: The project owner shall make the site available for inspection of equipment and fuel purchase records by representatives of the District, ARB, and the Energy Commission.

AQ-41 A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed and maintained on this unit to indicate elapsed engine operating time. (Title 17 CCR §93115.10(e)(1)).

Verification: At least 30 days prior to the installation of the engine, the project owner shall provide the District and the CPM the specification of the hour timer.

AQ-42 This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than one hour in any twenty four hour period and 20 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the one hour daily or 20 hour per year limit.

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

AQ-43 This facility shall not perform testing of more than one internal combustion engine at any one time and no more than two internal combustion engines in any twenty-four hour period.

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

AQ-44 The project owner shall maintain a operations log for this unit current and on-site, either at the engine location or at a on-site location, for a minimum of five (5) years, and for another year where it can be made available to the District staff within 5 working days from the District's request, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below:

a. Date of each use and duration of each use (in hours);

b. Reason for use (testing & maintenance, emergency, required emission testing);

c. Calendar year operation in terms of fuel consumption (in gallons) and total hours; and,

d. Fuel sulfur concentration (the project owner may use the supplier's certification of sulfur content if it is maintained as part of this log).

Verification: The project owner shall submit records required by this condition that demonstrating compliance with the sulfur content and engine use limitations of conditions **AQ-40, AQ-42,** and **AQ-43** in the Annual Compliance Report, including a photograph showing the annual reading of engine hours. The project

owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-45 This unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Title 17 CCR 93115). In the event of conflict between these conditions and the ATCM, the more stringent shall govern.

Verification: Not necessary.

AQ-46 This unit is subject to the requirements of the Federal National Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).

Verification: The project owner shall submit the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet NSPS and ARB ATCM emission limit requirements at the time of engine purchase.

EMERGENCY FIRE SUPPRESSION WATER PUMP ENGINE CONDITIONS

Equipment Description

Four – 300 hp emergency IC engine each driving a fire suppression water pump, Application Number/Permit Number: 0010754/E010933, 0010761/E010930, 0010768/E010931, and 0010775/E010932.

AQ-47 This equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.

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

AQ-48 This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements.

Verification: The project owner shall make the site available for inspection of equipment and fuel purchase records by representatives of the District, ARB, and the Energy Commission.

AQ-49 A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed and maintained on this unit to indicate elapsed engine operating time. (Title 17 CCR §93115.10(e)(1)).

Verification: At least 30 days prior to the installation of the engine, the project owner shall provide the District and the CPM the specification of the hour timer.

AQ-50 This unit shall be limited to use for emergency power, defined as in response to a fire or due to low fire water pressure. In addition, this unit shall be operated no more than one hour in any twenty four hour period and 50 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the one hour daily limit or 50 hour per year limit. The one hour daily and 50 hour limit can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. {Title 17 CCR 93115.3(n)}

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

AQ-51 This facility shall not perform testing of more than one internal combustion engine at any one time and no more than two internal combustion engines in any twenty four hour period.

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

AQ-52 The project owner shall maintain an operations log for this unit current and on-site, either at the engine location or at a on-site location, for a minimum of five (5) years, and for another year where it can be made available to the District staff within 5 working days from the District's request, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below:

a. Date of each use and duration of each use (in hours);

b. Reason for use (testing & maintenance, emergency, required emission testing);

c. Calendar year operation in terms of fuel consumption (in gallons) and total hours; and,

d. Fuel sulfur concentration (the project owner may use the supplier's certification of sulfur content if it is maintained as part of this log).

Verification: The project owner shall submit records required by this condition that demonstrating compliance with the sulfur content and engine use limitations

of conditions **AQ-48, AQ-50,** and **AQ-51** in the Annual Compliance Report, including a photograph showing the annual reading of engine hours. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-53 This unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Title 17 CCR 93115). In the event of conflict between these conditions and the ATCM, the more stringent shall govern.

Verification: Not necessary.

AQ-54 This unit is subject to the requirements of the Federal National Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).

Verification: The project owner shall submit the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet NSPS and ARB ATCM emission limit requirements at the time of engine purchase.

NON-RETAIL GASOLINE DISPENSING FACILITY CONDITIONS

Equipment Description

One – above ground gasoline storage tank and fuel receiving and dispensing equipment, Application Number/Permit Number: 0011391/N010938.

AQ-55 The toll-free telephone number that must be posted is 1-800-635-4617.

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

AQ-56 The project owner shall maintain a log of all inspections, repairs, and maintenance on equipment subject to Rule 461. Such logs or records shall be maintained at the facility for at least two (2) years and available to the District upon request. Records of Maintenance, Tests, Inspections, and Test Failures shall be maintained and available to District personnel upon request; record form shall be similar to the Maintenance Record form indicated in EO VR-401-A, Figure 2N.

Verification: The project owner shall make the site available for inspection of equipment and fuel purchase records by representatives of the District, ARB, and the Energy Commission.

AQ-57 Any modifications or changes to the piping or control fitting of the vapor recovery system require prior approval from the District.

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

AQ-58 Pursuant to EO VR-401-A, vapor vent pipes are to be equipped with Husky 5885 pressure relief valves or as otherwise allowed by EO.

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

AQ-59 The project owner shall perform the following tests within 60 days of construction completion and annually thereafter in accord with the following test procedures:

a. Determination of Static Pressure Performance of Vapor Recovery Systems at Gasoline Dispensing Facilities with Aboveground Storage Tanks shall be conducted per EO VR-401-A Exhibit 4

b. Phase I Adapters, Emergency Vents, Spill Container Drain Valve, Dedicated gauging port with drop tube and tank components, all connections, and fittings shall NOT have any detectable leaks; test methods shall be per EO VR-401-A Table 2-1, and

c. Liquid Removal Test (if applicable) per TP-201.6, and

Summary of Test Data shall be documented on a Form similar to EO VR-401 A Form 1.

The District shall be notified a minimum of 10 days prior to performing the required tests with the final results submitted to the District within 30 days of completion of the tests.

The District shall receive passing test reports no later than six (6) weeks prior to the expiration date of this permit.

Verification: The project owner shall make the site available for inspection of equipment and the results for the tests required by this condition by representatives of the District, ARB, and the Energy Commission.

AQ-60 Pursuant to California Health and Safety Code sections 39600, 39601 and 41954, this aboveground tank shall be installed and maintained in accordance with Executive Order (EO) VR-401-A for EVR Phase I, and Standing Loss requirements.

http://www.arb.ca.gov/vapor/eos/eo-vr401/eo-vr401a/eo-401a.pdf

Additionally, Phase II Vapor Recovery System shall be installed and maintained per G-70-116-F with the exception that hanging hardware

shall be EVR Balance Phase II type hanging hardware (VST or other CARB Approved EVR Phase II Hardware).

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

AQ-61 Pursuant to EO VR-401-A; Maintenance and repair of system components, including removal and installation of such components in the course of any required tests, shall be performed by OPW Certified Technicians.

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

AQ-62 Pursuant to EO VR-401-A, Maintenance Intervals for OPW; Tank Gauge Components; Dust Caps Emergency Vents; Phase I Product and Vapor Adapters, and Spill Container Drain Valve, shall be conducted by an OPW trained technician annually.

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

AQ-63 The annual throughput of gasoline shall not exceed 600,000 gallons per year. Throughput Records shall be kept on site and available to District personnel upon request. Before this annual throughput can be increased the facility may be required to submit to the District a site specific Health Risk Assessment in accord with a District approved plan. In addition public notice and/or comment period may be required.

Verification: The project owner shall provide gasoline throughput records to demonstrate compliance with this condition in the Annual Compliance Report.

AQ-64 The project owner shall; install, maintain, and operate EVR Phase I in compliance with CARB Executive Order VR-401-A, and Phase II vapor recovery in accordance with G-70-116-F. In the event of conflict between these permit conditions and/or the referenced EO's the more stringent requirements shall govern.

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

C. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and considers the potential public health effects from project emissions of toxic air contaminants (TACs). We review here the evidence concerning whether such emissions will result in significant public health impacts or violate standards for public health protection.[22]

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of toxic air contaminants for which no ambient air quality standards have been established. These substances are categorized as noncriteria pollutants. In the absence of standards, state and federal regulatory agencies have developed health risk assessment procedures to evaluate potential health effects due to these toxic air contaminants. (Ex. 200, p. C.5-2.)

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the Blythe Solar Power Project (BSPP) could emit into the environment;
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling;
- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact; and
- Characterize potential health risks by comparing worst-case exposure to the project with the scientific safety standards based on known health effects. (Ex. 200, p. C.5-3.)

Typically, the initial health risk analysis is performed at a "screening level," which is designed to estimate potential health risks.[23] The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case,

[22] This Decision discusses other potential public health concerns under various topics. For instance, impacts from emissions of criteria pollutants are treated in the **Air Quality** section. The accidental release of hazardous materials is addressed in **Hazardous Materials Management**. Electromagnetic fields are covered in **Transmission Line Safety and Nuisance**. Potential impacts to soils and surface water sources are considered in the **Soil and Water Resources** section. Potential exposure to contaminated soils and hazardous wastes is described in **Waste Management**. (Ex. 200, pp. C.5-1 to 5-2.)

[23] The evidence shows that this risk analysis overstates actual health risks (Ex. 200, pp. C.5-3, C.5-6.)

risks and then modeling those conditions to analyze results. Such conditions include:

- Using the highest levels of pollutants that could be emitted from the power plant;
- Assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- Using the type of air quality computer model which predicts the greatest plausible impacts;
- Calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- Assuming that an individual's exposure to cancer-causing agents occurs continuously for 70 years; and
- Using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses). (Ex. 200, pp. C.5-3 to C.5-4.)

The risk assessment for the BSPP addresses two categories of potential health impacts: chronic (long-term) noncancer effects; and cancer risk (also long-term).[24] Chronic non-cancer health effects occur as a result of long-term exposure (8 to 70 years) to lower concentrations of pollutants. For carcinogenic substances, the health assessment considers the total risk of developing cancer and assumes that continuous exposure to the cancer-causing substance occurs over a 70-year lifetime. (Ex. 200, p. C.5-4.)

The analysis for noncancer chronic health effects compares the maximum project contaminant levels to safe levels called Reference Exposure Levels or RELs. These exposure levels are designed to protect the most sensitive individuals in the population such as infants, the elderly, and people suffering from illnesses or diseases which make them more susceptible to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effects reported in medical and toxicological literature, and include margins of safety. (Ex. 200, p. C.5-4.) A "hazard index" of less than 1.0 signifies that the worst-case exposure is less than the safe exposure level, and thus there are not likely to be adverse noncancer health effects. (Ex. 200, p. C.5-5.)

The assessment also considers risk from all cancer-causing chemicals from the project's emissions. The calculated risk is not meant to predict the actual expected incidence of cancer, but is rather a theoretical estimate based on worst-

[24] The only TAC emitted from this project is diesel particulate from emergency diesel-fueled engines. Only long-term health effects have been established for this TAC. (Ex. 200, p. C.5-4.)

case assumptions. (Ex. 200, p. C.5-4.) Cancer risk is expressed in chances per million and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant will cause cancer, and the length of the exposure period. The State of California has determined that "the risk level which represents no significant risk shall be one which is calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime exposure." (Cal. Code Regs., tit. 22, § 12703(b).)This risk level is equivalent to a cancer risk of 10 in one million, or $10x10^{-6}$. The conservative nature of the screening assumptions means that actual cancer risks due to project emissions are likely to be considerably lower than those estimated. (Ex. 200, pp. C.5-5 to C.5-6.)

If the screening analysis predicts no significant risks, then no further analysis is required. However, if the predicted risk is significant, then further analysis using more realistic, site-specific assumptions is performed to obtain a more accurate assessment of potential health risks. If the site-specific analysis confirms that the risk exceeds the significance level, then appropriate mitigation measures are necessary to reduce the risk to less than significant. The evidence explains that if a refined analysis identifies a cancer risk that exceeds the significance level after all risk reduction measures have been considered, Commission staff would not recommend approval of the project. (Ex. 200, p. C.5-6.)

The evidence further shows that both the Applicant and Staff independently performed screening level risk assessments and concluded that no adverse health effects are expected from project construction or operation.

1. Construction Impacts and Mitigation

Construction of BSPP is expected to take place over a period of 69 months. Potential construction phase health impacts could occur from exposure to toxic substances in contaminated soil disturbed during site preparation, diesel exhaust from heavy equipment, and emissions from the proposed concrete batch plant and fuel depot. (Ex. 200, pp. C.5-10, C.5-11.)

A Phase I Environmental Site Assessment conducted in 2009 identified no "Recognized Environmental Conditions" (i.e., found no evidence or record of any use, spillage, or disposal of hazardous substances on the site). If, however, any unexpected contamination is encountered during construction, then compliance with Conditions of Certification **Waste Management Waste-1** and **Waste-2** will ensure that contaminated soil does not affect the public. These Conditions

require that a registered professional engineer or geologist be available during soil excavation and grading to ensure proper handling and disposal of contaminated soil. (Ex. 200, p. C.5-9.)

The evidence shows that Applicant modeled worst-case construction emissions, including fugitive dust and diesel particulate matter (DPM). About 33,513 pounds of DPM will be emitted over the total construction period. (Ex. 200, pp. C.5-11, C.5-6.) At the point of maximum impact (a remote area, not frequently accessed by the public, along the eastern site boundary), this equates to a noncancer hazard index of 0.00178 and to a cancer risk of 2.97 in one million. Both these risk levels are well below the respective significance thresholds of 1.0 and 10 in one million. (Ex. 200, p. C.5-11, C.5-16.) Moreover, the evidence establishes that emissions from the fuel depot and the batch plant will be minimal, and not significantly change these risks. (Ex. 200, p. C.5-11.)

Even though the Applicant and Staff independently determined that the construction impacts would be less than significant, they both proposed mitigation measures to reduce the maximum calculated PM10 and PM2.5 emissions and further reduce any potential impacts. Included in these measures are requirements for use of fugitive dust and diesel exhaust control measures such as the use of ultra-low sulfur diesel fuel and the installation of an oxidation catalyst and soot filters on diesel equipment. (*Id*.) We have adopted the recommended mitigation measures in the **Air Quality** section of this Decision.

2. Operation Impacts and Mitigation

The BSPP's operational emissions sources include four auxillary boilers, four two-cell cooling towers, four diesel-fueled emergency generators, four diesel-fueled emergency fire pumps, four heat transfer fluid (HTF) expansion/ullage systems, and DPM from maintenance vehicles. (Ex. 200, pp. C.5-12, C.5-17.) The evidence specifies and quantifies these emissions, and it also identifies the types of health effects which could occur. (Ex. 200, pp. C.5-12 to C.5-15.)

The record includes the methodology used in identifying and quantifying the emission rates of the toxic noncriteria pollutants that could adversely affect public health. Applicant performed atmospheric dispersion modeling of facility emissions which included all emission sources.[25] Staff performed its own independent risk analysis (Ex. 200, pp. C.5-16 to C.5-17.) Table 1, below, shows the results of these two analyses:

[25] These are specified in Exhibit 200, p. C.5-17.

Public Health Table 1

Cancer Risk and Chronic Hazard Due to Operation Phase Emissions

	Staff's Analysis			Applicant's Analysis		
	Cancer Risk (per million)	Acute HI	Chronic HI	Cancer Risk (per million)	Acute HI	Chronic HI
PMI (for cancer risk and chronic HI, Rec#1342)	1.12	0.082	0.00053	1.11	-	0.00053
PMI (acute HI, Rec#1730)	0.94	0.089	0.00038	-	0.089	-
MEIR (Rec #89)	0.35	0.044	0.00013	0.35	0.044	0.00013

Cancer PMI (point of maximum impact, Rec. #1342) is located on the eastern fenceline.
Source: Exhibit 200, p. C.5-19

Thus, the evidence uniformly indicates that acute and chronic hazard risks from project operations are below the significance level of 1.0, and that the cancer risk from project operations is below the significance level of 10 in 1,000,000. (Ex. 200, p. C.5-16.)

Each power block will also have one small cooling tower to cool auxiliary equipment. These cooling towers pose the risk of Legionella. This is a bacterium that is ubiquitous in natural aquatic environments and widely distributed in manmade water systems. It is the principal cause of legionellosis, more commonly known as Legionnaires' disease. Untreated or inadequately treated cooling systems, such as industrial cooling towers and building heating, ventilating, and air conditioning systems have been associated with outbreaks of legionellosis. (Ex. 200, pp. C.5-19 to C.5-20.)

Effective mitigation measures include a cleaning and maintenance program. The Cooling Tower Institute has issued guidelines for the best practices for control of Legionella (CTI 2000). Preventive maintenance includes effective drift eliminators, periodically cleaning the system as appropriate, maintaining mechanical components, and maintaining an effective water treatment program with appropriate biocide concentrations. (Ex. 200, pp. C.5-20 to C.5-21.) We have therefore included Condition of Certification **PUBLIC HEALTH-1**. This condition specifically requires the project owner to prepare and implement a biocide and anti-biofilm agent monitoring program to ensure that proper levels of biocide and other agents are maintained within the four wet cooling towers at all times, that periodic measurements of Legionella levels are conducted, and that

periodic cleaning is conducted to remove biofilm build up. The evidence establishes that these measures assure that the risk associated with bacterial growth and dispersal will be reduced to less than significant. (Ex. 200, p. C.5-21.)

3. Cumulative Impacts

A project may result in a significant adverse impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Cal. Code Regs., tit.14, § 15130).

Cumulative impacts could occur if impacts from the Blythe Solar Power Project combined with those of other local or regional facilities, for example if BSPP's emissions plume combined with plumes from other projects. In the present case, the evidence establishes that this combination of impacts would have to occur within the BSPP's boundaries or within one-half mile of the BSPP in order to result in potential adverse public health impacts. (Ex. 200, p. C.5-25.)

The nearest existing source of emissions is Interstate 10, located about two miles to the south. Other existing sources of emissions include the gas-fired Blythe Energy Power Plant and the Kaiser Steel Mine. None of these sources are close enough to raise cumulative health concerns. (Ex. 200, pp. C.5-25 to C.5-26.) Similarly, future development in the Interstate 10 corridor, including over 10 solar power projects, one gas-fired power plant, and residential and commercial projects, will be sufficiently distant so as not to pose a realistic potential for adverse cumulative public health impacts. (Ex. 200, p. C.5-26.)

The evidence also addresses the impacts of the Reconfigured Alternative, the Reduced Acreage Alternative, and the various No Project Alternatives in regard to this topic area. None of the Alternatives would substantially alter the level of impacts posed by the project; moreover the Blythe Solar Power Project does not create significant adverse impacts in this topic area. Therefore, it is not necessary to consider any of the Alternatives as a means of reducing impacts to below a level of significance. (Ex. 200, pp. C.5-22 to C.5-25.)

4. Public Benefits

Finally, the evidence shows that a solar electric generating facility would emit significantly fewer TACs to the environment than other energy sources available

in California such as natural gas or biomass. This reduces the health risks that would otherwise occur. At the same time, the BSPP would provide much needed electrical power to California residences and businesses, and will contribute to electric reliability. (Ex. 200, p. C.5-27.)

FINDINGS OF FACT

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

1. Construction and operation of the project will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.

2. Exposure to diesel particulate emissions from construction equipment is short-term and will not result in long-term carcinogenic or non-carcinogenic health effects.

3. Exposure to construction-related diesel particulates will be mitigated to the extent feasible by implementing measures to reduce equipment emissions.

4. Exposure to fugitive dust due to excavation and construction activities will be mitigated to insignificant levels by implementing measures to reduce dust production and dispersal.

5. Emissions of criteria pollutants, as discussed in the **AIR QUALITY** section of this Decision, will be mitigated to levels consistent with applicable state and federal standards.

6. Emissions of noncriteria pollutants or toxic air contaminants are assessed according to procedures developed by state and federal regulatory agencies to evaluate potential health effects.

7. The accepted method used by state regulatory agencies in assessing the significance for both acute and chronic non-carcinogenic public health effects of noncriteria pollutants is known as the hazard index method. A similar method is used for assessing the significance of potential carcinogenic effects.

8. Both the Applicant and Staff performed a screening level health risk assessment of the project's potential health effects due to emissions of toxic air contaminants.

9. The health risk assessment is based on worst case assumptions using the highest emission factors, assuming the worst weather conditions, and

10. The project owner will implement a Cooling Water Management Plan to minimize the potential for growth of Legionella bacteria and other micro-organisms in cooling tower emissions.

11. Cumulative impacts from noncriteria pollutants were analyzed in accordance with the provisions of CEQA and are not expected to be significant.

12. Since the project's contributions to health risks are well below the significance level, the project is not expected to contribute significantly to a cumulative health impact.

13. The record addresses the impacts of the Reconfigured Alternative, the Reduced Acreage Alternative, and the various No Project Alternatives in regard to this topic area.

14. Implementation of any of the Alternatives mentioned above is not necessary or preferable as a means of reducing project related impacts to below a level of significance.

CONCLUSIONS OF LAW

1. We therefore conclude that emissions of noncriteria pollutants from the construction and operation the Blythe Solar Power Project do not pose a significant direct, indirect, or cumulative adverse public health risk.

2. The project will comply with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of **Appendix A** of this Decision.

CONDITION OF CERTIFICATION

PUBLIC HEALTH-1 The project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in all four wet cooling towers is kept to a minimum. The Plan shall be consistent with either Staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of Legionella" guidelines but, in either case, the Plan must include sampling and testing for the presence of Legionella bacteria at least every six months. After two years of power plant operations, the project owner may ask the CPM to re-

evaluate and revise the Legionella bacteria testing requirement.

Verification: At least 60 days prior to the commencement of cooling tower operations, the Cooling Water Management Plan shall be provided to the CPM for review and approval.

D. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. Implementation of various existing laws and standards suffices to reduce these hazards to minimal levels. (Ex. 200, p. C.14-6.) Therefore, this subsection focuses on whether Applicant's proposed health and safety plans are in accordance with all applicable LORS and thus adequate to protect industrial workers. The record also addresses the availability and adequacy of fire protection and emergency response services, as well as potential threats from wildfires.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Worker Safety

Industrial environments are potentially dangerous during construction, operation, and demolition activities. Workers at the Blythe Solar Project will be exposed to excessive heat, loud noises, moving equipment, trenches, and confined space entry and egress problems. The workers may experience falls, trips, burns, lacerations, and various other injuries. They may also be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, electrical sparks, and electrocution. (Ex. 200, p. C.14-6.)

This power plant presents a work environment that includes a solar field located in the high desert. The areas under the solar arrays must be kept free from weeds by applying herbicides as necessary. Inhalation and ingestion of dusts containing herbicides can pose a health risk to workers. In addition, cleaning, servicing, and inspecting the solar mirrors will be conducted year-round and, especially, during the summer months of peak solar power generation when ambient temperatures routinely reach 115º F and above. (Ex. 200, p. C.14-10.) Thus, it is important for the project owner to adopt well-defined policies and procedures, training, hazard recognition, and controls to minimize injuries and protect the health of onsite workers.

The evidence provides extensive details on the worker safety and health programs required by applicable law and the project-specific safety measures necessary to protect onsite workers. Specifically, the project owner must develop and implement a "Construction Safety and Health Program" and an "Operations and Maintenance Safety and Health Program," both of which must be approved by BLM's Authorized Officer and the Energy Commission's

Compliance Project Manager prior to project construction and operation. A separate "Injury and Illness Prevention Program," a "Personal Protective Equipment Program," an "Emergency Action Plan," a "Fire Prevention Plan," and other general safety procedures will be prepared for both the construction and operation phases of the project. (Ex. 1, § 5.18.3.1 et seq.; Ex. 200, pp. C.14-6 to C.14-11.) Conditions of Certification **WORKER SAFETY-1** and **-2** ensure that these measures will be developed and implemented in compliance with applicable LORS.

In addition, Conditions **WORKER SAFETY 1 and -2** require the project owner to include the following measures in the Worker Safety and Health programs:

- A Worker Heat Stress Protection Plan that implements and expands on existing Cal-OSHA regulations requiring heat illness prevention during construction and operation; and

- The development and implementation of Best Management Practices for the storage and application of herbicides used to control weeds beneath and around the solar array to reduce fire hazards during operation.

To address the possibility that soil contamination could be encountered during construction, Conditions **WASTE-1** and **WASTE-2** require a registered professional engineer or geologist to be available during soil excavation and grading to ensure proper handling and disposal of contaminated soil. See the **Waste Management** section for a more detailed analysis of this topic. (Ex. 200, p. C.14-5 to C.14-6.)

Federal and state Occupational Safety and Health Administration ("OSHA/Cal-OSHA") standards encourage employers to monitor worker safety by employing a "competent person" who has knowledge and experience enforcing workplace safety standards, can identify hazards relating to specific project operations, and has authority to take appropriate action. To implement this safe workplace policy during project construction, Condition **WORKER SAFETY-3** requires the project owner to designate a power plant Construction Safety Supervisor to coordinate and implement the Construction and Operation Safety and Health Programs, as well as investigate any safety-related incidents and emergency responses. (Ex. 200, p. C.14-12.)

To further reduce and/or eliminate safety hazards during project construction and operation, the project owner must also employ a professional Safety Monitor. The Safety Monitor will report to the Chief Building Official, BLM's Authorized Officer, and the Compliance Project Manager, and track compliance with

OSHA/Cal-OSHA regulations and serve as an on-site OSHA expert. This professional will periodically audit safety compliance during construction, commissioning, and the transition to operational status as well as ensure that safety procedures and practices are fully implemented. (Ex. 200, pp. C.14-12 to C.14-13.) Condition **WORKER SAFETY-4** ensures that the Safety Monitor will perform the duties described in the evidentiary record.

The project owner will also maintain an automatic portable defibrillator on-site to provide immediate response in the event of medical emergency.[26] Condition **WORKER SAFETY-5** requires the project owner to ensure this device is available during construction and operation, and that appropriate personnel are trained to use it. (Ex. 200, p. C.14-13.)

Valley Fever. Construction workers at the site may be potentially exposed to Coccidiodomycosis (known as "Valley Fever" or "VF"). Soil disturbance of previously undisturbed lands could release dust containing inhalable spores of the fungus Coccidiodes immitis, which can infect the lungs with potentially severe consequences. In Riverside County, there are approximately 50 reported cases of Valley Fever per year with nine reported deaths between 2005 and 2008. To minimize potential exposure to coccidioidomycosis, onsite workers must wear dusk masks and ensure that thorough wetting of the soil is implemented prior to and during excavation and construction activities. These requirements are contained in the dust (PM10) control measures described in the **Air Quality** section of this Decision. In addition, Condition **WORKER SAFETY-8** requires supplemental dust control safeguards, including methods equivalent to the requirements of Rule 402 of the Kern County Air Pollution Control District, which identifies specific measures designed to reduce VF exposure. (Ex. 200, pp. C.14-13 to C.14-18; Ex. 202, Appendix A, § 3.12, p. A-63 et seq.)

UXO Exposure. The site has the potential to contain unexploded ordnance (UXO) and soil contaminated with hazardous materials. (Ex. 200, pp. C.14-5 to C.14-6; Ex. 202, Appendix A, § 3.12, pp. A-64 to A-65.) See the **Waste Management s**ection of this Decision for further discussion. Condition **WASTE-1** requires the project owner to prepare an Identification, Training, and Reporting Plan to train site workers to identify and avoid UXO, to employ experts to conduct geophysical surveys for UXO, and to investigate, remove, and dispose of any

[26] Staff's testimony indicates that the potential for both work-related and non work-related heart attacks exists at power plants. The quickest medical intervention can be achieved with the use of an on-site defibrillator. Many modern industrial and commercial enterprises maintain defibrillators for emergency use. Staff therefore endorses this as an appropriate safety and health precaution. (Ex. 200, pp. C.14-27 to C.14-28.)

UXO found at the site. In addition, Condition **WORKER SAFETY-1** ensures that any risk to workers due to residual hazardous wastes or UXO in site soils will be minimized to insignificant levels.

3. Fire Protection and Emergency Response

Project construction and operation pose the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, HTF, hydraulic fluid, mineral oil, insulating fluid or flammable liquids, explosions, and over-heated equipment may cause fires.

The project will rely upon both onsite and local fire protection services. The onsite fire protection system provides the first line of defense for such occurrences. The Construction Fire Prevention Plan required by Condition **WORKER SAFETY-1** must specify the measures employed to minimize the likelihood of fires during construction, including the locations of portable fire extinguishers, safety procedures, hazardous materials clean-up procedures, and worker training.

During construction, a concrete batch plant and a large (20,000 gallons of diesel and 500 gallons of gasoline) fuel depot will be installed onsite. (Ex. 200, pp. C.14-19 to C.14-20.) The project owner must comply with the fire protection measures required by state and federal LORS for a fuel depot, including the most current versions of the following:

- Chapter 22 of the California Fire Code: Motor Fuel-Dispensing Facilities and Repair Garages (formally adopted by Riverside County); and
- National Fire Protection Association (NFPA) Code 30A: Motor Fuel Dispensing Facilities and Repair Garages

The project owner must also employ the specific fire detection and suppression systems required for operation of the concrete batch plant. (*Id.*)

Conditions **WORKER SAFETY-1** and **-2** require the project's Fire Prevention Plans to include fire safety measures related to the concrete batch plant and the on-site fuel depot.

All power plants sites licensed by the Energy Commission must have more than one entry point to provide access to fire department vehicles and emergency personnel if the main gate is blocked. As proposed, the Blythe Solar site had only one access road to the main gate via a new public road from I-10. If the main access road or gate were blocked, the site would be isolated and

emergency vehicles could not respond in a timely manner. Therefore, to ensure emergency access to the site, Condition **WORKER SAFETY-6** requires the project owner to provide a secondary road and access gate for emergency vehicles and to equip the secondary gate with either a remote system or a keypad for fire department and other emergency personnel to open the gate. (Ex. 200, p. C.14-21.)

The evidence indicates that during operation, the project will meet the fire protection and suppression requirements of the California Fire Code, all applicable NFPA standards (including Standard 850 addressing fire protection at electric generating plants), and all Cal-OSHA requirements. Fire suppression elements will include both fixed and portable fire extinguishing systems located throughout the site. (Ex. 200, p. C.14-22.)

The fire water suppression system includes an onsite well and four water storage tanks with 300,000 gallons in each tank dedicated to fire protection. One electric and one diesel-fueled backup firewater pump at each tank ensures water supply to each fire protection loop with an electric jockey pump designed to maintain adequate water pressure in the system. (Ex. 1, § 5.18.3.2.)

Fire hydrants will be installed throughout the site per NFPA requirements and a sprinkler deluge system will be installed in areas of risk including each power unit's transformer as well as the HTF expansion tank and circulating pump area. A sprinkler system will be installed at the STGs and in administrative buildings. The solar fields will be protected by isolation valves that would allow only a finite amount of HTF to burn before extinguishing. (Ex. 1, § 5.18.3.2.)

The fire protection system also includes fire detection sensors and monitoring equipment that will trigger alarms and automatically actuate the suppression systems in accordance with applicable LORS. (Ex. 1, § 5.18.3.2.)

The Riverside County Fire Department (RCFD) is the "Authority Having Jurisdiction" and must provide initial fire protection support and respond to major hazardous materials incidents at the site. The nearest fire station is Blythe Air Base Station #45, located at 17280 W. Hobson Way, about three miles from the site. Response time from this station should be 2-3 minutes once dispatched. The next nearest station is Ripley Station #44, located at 13987 Main Street, about 12 miles away with a response time of 11-12 minutes after dispatch. RCFD fire stations are staffed full-time with a minimum of three personnel per shift, including trained paramedics. (Ex. 200, pp. C.14-5, C.14-24.)

According to Applicant, designated onsite plant personnel will be trained as a hazardous materials response team with access to spill response kits. (Ex. 1, § 5.6.4.2.) In the event of a large incident involving hazardous materials, backup support could be provided by the RCFD, which has a hazmat response unit capable of responding to any incident at the site. The RCFD hazmat unit is located in Palm Desert (about 100 miles away) with a response time of about 2 hours. (Ex. 200, p. C.14-5.)

Staff emphasized that hazmat spill response, and EMS response is critical to handling an emergency. We have therefore adopted Staff's proposed Condition **WORKER SAFETY-9,** which requires the project owner to participate in joint training exercises with the RCFD. The project owner must coordinate this training with other Energy Commission-licensed solar power plants in Riverside County so that Blythe Solar will only be required to host the annual training on a rotating basis with the other solar power plants. (Ex. 200, p. C14-9.)

Evidence reveals that the RCFD is not adequately equipped to respond to fire, hazmat, rescue, and EMS emergencies in a timely manner at the Blythe Solar site because the nearby stations are out-dated and poorly equipped to handle emergencies at power plants. (Ex. 200, pp. C14-22 to C.14-25.)

Blythe Solar and the other proposed solar power plants along the I-10 corridor (Palen and Genesis) are very different from the light industry and residential development in the Riverside County desert region. They are also different from the existing natural gas power plants in the Blythe area as well as the small solar plants located at Harper Lake and Kramer Junction in San Bernardino County. The new solar plants are much larger in scale and will have huge amounts of highly flammable HTF and large fuel storage depots onsite during construction and operations. The amount of highly flammable fuel stored and used onsite, combined with the remote locations of the new solar projects and the potential for escalation of a small fire into a large conflagration, presents an emergency response challenge never before experienced by the RCFD. (Ex. 200, pp. C14-22 to C.14-25.)

According to Staff, standard fire department responses for a fire and/or a hazmat spill require six engines and at least three firefighters on each engine. To fight a fire inside a structure, the RCFD must adhere to standard operating procedures and Cal-OSHA regulations that require "two men in", "two men out". Thus, a response of three firefighters from one station would require dispatch engines from at least three fire stations so that a minimum of nine firefighters could be sent to the scene. In the event of two or more fires at the same time, It would be

even more difficult to respond because the RCFD does not have a mutual aid agreement with other fire agencies in the area. Staff notes that current statewide budgetary shortfalls that impact fire services are common and Riverside County is no exception. (Ex. 200, pp. C14-22 to C.14-25.)

To mitigate this situation, the RCFD proposed that the solar plant developers contribute to "Development Impact Fee Programs" adopted by the Riverside County Board of Supervisors. We find this approach is reasonable because it allows the developers and the county to negotiate terms of the fee agreements. In this light, Condition **WORKER SAFETY-7** requires Blythe Solar to (1) Reach an agreement, either individually or in conjunction with a power generation industry association or group that negotiates on behalf of its members, with the Riverside County Fire Department (RCFD) regarding funding of its project-related share of capital and operating costs to build and operate new fire protection/response infrastructure and provide appropriate equipment as mitigation of project-related impacts on fire protection services within the jurisdiction OR fund its share of the capital costs in the amount of $850,000 and provide an annual payment of $375,000 to the RCFD for the support of new fire department staff and operations and maintenance commencing with the start of construction and continuing annually thereafter on the anniversary until the final date of power plant decommissioning. The project owner's compliance with Condition **WORKER SAFETY-7** ensures that the project's impacts on the RCFD will be mitigated to insignificant levels. (Ex. 200, pp. C.14-26 to C.14-27.)

Since Conditions **WORKER SAFETY-1** and **-2** require the fire authority's approval of the Construction and Operation Fire Prevention Plans prior to construction and operation of the project, it is necessary for the project owner to negotiate the fire services mitigation fee before submitting the Fire Prevention Plans and to make the first annual payment before construction begins. (Ex. 200, p. C.14-27.)

Condition **WORKER SAFETY-7** also addresses the project's contribution to cumulative impacts on the fire and emergency service demand presented by the large solar projects in the Blythe Solar vicinity. (Ex. 200, pp. C.14-31 to C.14-33.)

Finally, the evidence addresses the impacts of the Reconfigured, Reduced Acreage and No Project Alternatives regarding this topic. None of the alternatives would significantly alter the level of impacts posed by the project. Since Blythe Solar, if mitigated in accordance with the Conditions of Certification,

will not create significant adverse impacts in this topic area, it is not necessary to consider any of the alternatives to further reduce impacts to levels of insignificance. (Ex. 200, pp. C.14-28 to C.14-31.)

FINDINGS OF FACT

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

1. Industrial workers at the project site and along the linear corridors will be exposed to potential health and safety hazards on a daily basis.

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.

3. The Safety and Health Programs will include a Worker Heat Stress Protection Plan to address working conditions in the extreme desert heat and Best Management Practices to prevent worker exposure to herbicides used to remove vegetation at the site.

4. The Safety and Health Programs will include dust control and prevention measures to protect workers from exposure to Valley Fever.

5. The Safety and Health Programs will include measures to protect workers from exposure to unexploded ordnance and other munitions remnants that could be encountered at the site.

6. The project will employ an onsite professional Safety Monitor during construction and operation.

7. The project will include onsite fire protection and suppression systems as the first line of defense in the event of a fire.

8. The Riverside County Fire Department (RCFD) will provide fire protection, and emergency response services to the project and participate in annual training of solar plant personnel in hazmat emergency response.

9. To ensure that fire and emergency service resources are adequate to meet project needs, the project owner will negotiate a mitigation fee either individually or as part of a solar power plant group with the RCFD to pay for the capital costs of upgrading RCFD fire stations and to purchase necessary

equipment to address the demand of Blythe Solar and other large solar projects in Riverside County.

10. The mitigation fee agreement with the RCFD addresses the Blythe Solar Project's contribution to cumulative impacts on the RCFD's resources due to several large new solar projects in Riverside County.

11. The record addresses the impacts of the Reconfigured, Reduced Acreage and No Project Alternatives in regard to this topic area.

12. None of the alternatives discussed in the record would significantly affect the level of impacts posed by the project as mitigated in accordance with the Conditions of Certification.

CONCLUSIONS OF LAW

1. We therefore conclude that with implementation of the Conditions of Certification listed below and the mitigation measures described in the evidentiary record, the Blythe Solar Project will not cause significant health and safety impacts to workers.

2. We further conclude that the mitigated Blythe Solar Project, as described in the evidentiary record, will comply with all applicable laws, ordinances, regulations, and standards listed for Worker Safety and Fire Protection as set forth in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:

- A Construction Personal Protective Equipment Program;
- A Construction Exposure Monitoring Program;
- A Construction Injury and Illness Prevention Program;
- A Construction heat stress protection plan that implements and expands on existing Cal OSHA regulations as found in 8 CCR 3395;
- A Construction Emergency Action Plan; and
- A Construction Fire Prevention Plan that includes the concrete batch plant and the above-ground fuel depot.
- The Personal Protective Equipment Program, the Exposure Monitoring Program, the Injury and Illness Prevention Program, and the Heat Stress Protection Plan shall be submitted to the

CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Riverside County Fire Department for review and comment prior to submittal to the CPM for approval.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- An Operation Injury and Illness Prevention Plan;
- An Operation heat stress protection plan that implements and expands on existing Cal OSHA regulations (8 CCR 3395);
- A Best Management Practices (BMP) for the storage and application of herbicides;
- An Emergency Action Plan;
- Hazardous Materials Management Program;
- Fire Prevention Plan that includes the fuel depot should the project owner elect to maintain and operate the fuel depot during operations (8 Cal Code Regs. § 3221); and
- Personal Protective Equipment Program (8 Cal Code Regs, §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, Heat Stress Protection Plan, BMP for Herbicides, and Personal Protective Equipment, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Riverside County Fire Department for review and comment.

Verification: At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has

authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

- Have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- Assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- Assure that all construction and commissioning workers and supervisors receive adequate safety training;
- Complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and
- Assure that all the plans identified in Conditions of Certification Worker Safety-1 and -2 are implemented.
- The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:
- Record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- Summary report of safety management actions and safety-related incidents that occurred during the month;
- Report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- Report of accidents and injuries that occurred during the month.

Verification: At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement CSS shall be submitted to the CPM within one business day.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification Worker Safety-3, implements all appropriate Cal/OSHA and Energy Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least 60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall ensure that a portable automatic external defibrillator (AED) is located on site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in its use. The training program shall be submitted to the CPM for review and approval.

Verification: At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable automatic external defibrillator (AED) exists on site and a copy of the training and maintenance program for review and approval.

WORKER SAFETY-6 The project owner shall:

a. Provide a second access gate for emergency personnel to enter the site. This secondary access gate shall be at least one-quarter mile from the main gate.
b. Provide a second access road that comes to the site. This road shall be at a minimum an all-weather gravel road and at least 20 feet wide.
c. Maintain the main access road and the second road and provide a plan for implementation.

Plans for the secondary access gate, the method of gate operation, gravel road, and to maintain the roads shall be submitted to the Riverside County Fire Department for review and comment and to the CPM for review and approval.

Verification: At least sixty (60) days prior to the start of site mobilization, the project owner shall submit to the Riverside County Fire Department and the CPM preliminary plans showing the location of a second access gate to the site, a description of how the gate will be opened by the fire department, and a description and map showing the location, dimensions, and composition of the main road, and the gravel road to the second gate. At least thirty (30) days prior to the start of site mobilization, the project owner shall submit final plans plus the road maintenance plan to the CPM review and approval. The final plan submittal shall also include a letter containing comments from the Riverside County Fire Department or a statement that no comments were received.

WORKER SAFETY-7 The project owner shall either:

(1) Reach an agreement, either individually or in conjunction with a power generation industry association or group that negotiates on behalf of its members, with the Riverside County Fire Department (RCFD) regarding funding of its project-related share of capital and operating costs to build and operate new fire protection/response infrastructure and provide appropriate equipment as mitigation of project-related impacts on fire protection services within the jurisdiction; **or**

(2) Shall fund its share of the capital costs in the amount of $850,000 and provide an annual payment of $375,000 to the RCFD for the support of new fire department staff and operations and maintenance commencing with the start of construction and continuing annually thereafter on the anniversary until the final date of power plant decommissioning.

Verification: At least thirty (30) days prior to the start of site mobilization, the project owner shall provide to the CPM:

(1) A copy of the individual agreement with the RCFD or, if the owner joins a power generation industry association, a copy of the bylaws and group's agreement/contract with the RCFD.

or

(2) Documentation that a letter of credit in the amount of $850,000 has been provided to the RCFD and documentation that a letter of credit for the first annual payment of $375,000 has been provided to the RCFD.

The project owner shall also provide evidence in each January Monthly Compliance Report during construction and the Annual Compliance Report during operation that subsequent annual payments have been made.

WORKER SAFETY-8 The project owner shall develop and implement an enhanced Dust Control Plan that includes the requirements described in **AQ-SC3** and additionally requires:

i. Site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present;
ii. Implementation of methods equivalent to Rule 402 of the Kern County Air Pollution Control District (as amended Nov. 3, 2004); and
iii. Implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with **AQ-SC4**) immediately whenever visible dust

persists in the breathing zone of the workers, or when PM10 measurements obtained when implementing ii (above) indicate an increase in PM10 concentrations due to Project activities of 50 $\mu g/m^3$ or more.

Verification: At least 60 days prior to the commencement of site mobilization, the enhanced Dust control Plan shall be provided to the CPM for review and approval.

WORKER SAFETY-9 The project owner shall participate in annual joint training exercises with the Riverside County Fire Department (RCFD). The project owner shall coordinate this training with other Energy Commission-licensed solar power plants within Riverside County such that this project shall host the annual training on a rotating yearly basis with the other solar power plants.

Verification: At least 10 days prior to the start of commissioning, the project owner shall submit to the CPM proof that a joint training program with the RCFD is established. In each January Monthly Compliance Report during construction and the Annual Compliance Report during operation, the project owner shall include the date, list of participants, training protocol, and location of the annual joint training.

E. HAZARDOUS MATERIALS MANAGEMENT

This section considers whether the construction and operation of the Blythe Solar Project will create significant impacts to public health and safety resulting from the use, handling, transportation, or storage of hazardous materials.[27] The evidence contains analyses of plausible potential spills for the hazardous materials to be used at the proposed facility. The worst case plausible event, regardless of cause, is considered, and analyzed to see whether the risk to local populations is significant. Hazardous material handling and usage procedures are incorporated to reduce the likelihood of a spill, to reduce its potential size, and to prevent or reduce the potential migration of a spill off site to avoid significant off-site impacts. The analyses contained in the record look at potential direct contact from runoff of spills, air-borne plume concentrations, and the potential for spills to mix with runoff water and be carried off-site. The Applicant has proposed secondary containment basins for containing liquids, and determined that volatile chemicals would have a restricted exposure to the atmosphere after capture. [28] (7/15/10 RT 22; Ex. 200, pp. C.4-1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Potential Risks

The evidence chronicles the method used to assess risks posed by hazardous materials. This method included the following elements:

- A review of chemicals, the amounts proposed for on-site use, and a determination of the need and appropriateness of their use.
- Chemicals which would be used in small amounts, or whose physical state is such that there is virtually no chance that a spill would migrate off the site and impact the public, were removed from further consideration.
- Measures proposed to prevent spills were reviewed and evaluated. These included engineering controls such as automatic shut-off valves and different size transfer-hose couplings, as well as administrative controls such as worker training and safety management programs.
- Measures proposed to respond to accidents were reviewed and evaluated. These included engineering controls such as catchment basins and

[27] The **Worker Safety and Fire Protection** portion of this Decision addresses the protection of workers from such risks.

[28] In this instance, there are no sensitive receptors within a 3-mile radius of the project vicinity. (Ex. 200, p. C.4-6.)

methods to keep vapors from spreading, as well as administrative controls such as training emergency response crews.

- An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures in place. (Ex. 200, pp. C.4-2 to C.4-3.)

Hazardous materials used during construction will include gasoline, diesel fuel, motor oil, welding gases, lubricants, solvents, paint, and welding gasses. A concrete batch plant for the construction phase of the project would require the use of some additional hazardous materials such as fly ash and calcium chloride. All of these will be used in small quantities, and any spills or other releases will be confined to the site. No acutely toxic materials will be used on-site during construction. During operations, hazardous materials such as cleaning agents, water treatment chemicals, welding gasses, oils, activated carbon, and other chemicals will be used or stored only in small quantities; these present limited off-site dangers because of their low volatility and/or toxicity. (Ex. 200, pp. C.4-7.)

Attachment A (incorporated in Condition of Certification **HAZ-1** at the end of this section) lists the hazardous materials that will be used and stored on-site. Condition **HAZ-1** prohibits the project owner from using hazardous materials not listed in **Attachment A**, or storing them in greater quantities than specified, without prior approval of the Energy Commission's Compliance Project Manager (CPM). (Ex. 200, pp. C.4-20.) None of these materials, except for natural gas and Therminol VP-1^{TM}, the proposed heat transfer fluid (HTF) as discussed below, pose significant potential for off-site impacts as a result of the quantities on-site, their relative toxicity, their physical state, and/or their environmental mobility. (Ex. 200, pp. C.4-7 to C.4-8.)

a. Natural Gas

Natural gas at the proposed facility will only be used to fuel the auxiliary boilers and HTF heaters. It will not be stored on-site but delivered by the Southern California Gas Company via a new 10-mile pipeline that would connect to an existing main south of I-10. Approximately eight miles of pipeline would be installed within the site boundaries and two miles off-site (Ex. 1, Section 2.5.5.1).

The evidence shows that, while natural gas poses some risk of both fire and explosion, this risk will be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. For example, National Fire Protection Association

(NFPA) Code 85A requires both the use of double-block and bleed valves for gas shut-off and automated combustion controls. These measures significantly reduce the likelihood of an explosion in gas-fired equipment. The Safety Management Plan must address the handling and use of natural gas, and the evidence establishes that it will significantly reduce the potential for equipment failure because of either improper maintenance or human error. (Ex. 200, p. C.4-7.)

b. Therminol VP-1™

Therminol VP1 is the heat transfer fluid (HTF) that will be used in the solar panels to collect solar heat and transfer it in order to generate steam to run the steam turbines. Therminol is a mixture of 73.5 percent diphenyl ether and 26.5 percent biphenyl, and is a solid at temperatures below 54°F. While the risk of off-site migration is minimal, Therminol is highly flammable and fires have occurred at other solar generating stations that use it. Approximately 1,300,000 gallons of HTF will be stored at the Blythe Solar site contained in the pipes and heat exchanger. Isolation valves would be placed throughout the HTF piping system designed to automatically block off sections of the piping in which a loss of pressure is detected. (Ex. 1, § 5.6.3.3.) Condition of Certification **HAZ-4** would require the project owner to install a sufficient number of isolation valves that a maximum of 1,250 gallons of HTF would leak if all the fluid in the isolated loop should leak out. Applicant estimated that should this leak catch fire, it would burn a maximum of 15 minutes before exhausting the 1,250 gallons of HTF.

2. Risk Mitigation

a. Engineering and Administrative Controls

Engineering controls and administrative controls affect the significance of potential impacts from hazardous materials usage. Engineering controls are those physical or mechanical systems (such as storage tanks or automatic shut-off valves) which can prevent a hazardous material spill from occurring, which can limit the spill to a small amount, or which can confine it to a small area. Administrative controls are those rules and procedures that workers at the facility must follow. These are designed to help prevent accidents or keep them small if they do occur. Timely and adequate emergency spill response is also a crucial factor. (Ex.200, p. C.4-9.)

The engineered safety features which will be used at the Blythe Solar project include:

- Use of secondary containment areas, surrounding each of the hazardous materials storage areas, designed to contain accidental releases that might happen during storage; and
- Physical separation of stored chemicals in isolated containment areas with a non-combustible partition in order to prevent accidental mixing of incompatible materials which could result in the formation and release of toxic gases or fumes. (Ex. 200, p. C.4-9.)

Administrative controls, such as those required in Conditions of Certification **HAZ-1** (limitations on the use and storage of hazardous materials and their strength and volume) and Condition **HAZ-2** (development of a Hazardous Materials Business Plan) also help prevent accidents and spills from moving off-site and affecting neighboring communities. For example, the Business Plan will incorporate state requirements for the handling of hazardous materials. Condition of Certification **HAZ-2** also ensures that this Plan, which includes the Inventory and Site Map, Emergency Response Plan, Owner/Operator Identification, and Employee Training is provided to the Riverside County Fire Department (RCFD) so that it can better prepare emergency response personnel for handling potential emergencies at the facility. In accordance with Condition of Certification **HAZ-3**, the project owner must also develop and implement a Safety Management Plan for delivery of liquid hazardous materials. This Plan will include procedures, protective equipment requirements, training and a checklist, as well as a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials. The Safety Management Plan will be applicable during construction, commissioning, and operation of Blythe Solar. (Ex. 200, p. C.4-10.)

The Riverside County Environmental Health Department (RCEHD) and the RCFD are concurrently responsible for reviewing the Hazardous Materials Business Plans. (Ex. 200, p. C.4-20, **HAZ-2**.) Plant personnel would be trained as a hazardous materials response team which would be the first responder to hazardous materials incidents. In the event of a large incident involving hazardous materials, backup support would be provided by the Riverside County Fire Department which has a hazmat response unit capable of handling any incident at the proposed Blythe Solar facility and would respond in about 1.5-2 hours. (Ex. 1, § 5.6.4.2.) The evidence indicates that, given the remote location, this response time is acceptable and that the HazMat Team is adequately trained and equipped to respond to an emergency at Blythe Solar. The project's remote location eliminates the risk of off-site consequences to the public. (*Id.*)

Furthermore, worker training programs, process safety management programs, and compliance with all applicable health and safety laws, ordinances, and standards will reduce risks. The project owner's worker health and safety program will include (but not be limited to) the following elements:

- Worker training regarding chemical hazards, health and safety issues, and hazard communications;
- Procedures to ensure the proper use of personal protective equipment;
- Safety procedures for the operation and maintenance of systems utilizing hazardous materials;
- Fire safety and prevention; and
- Emergency response actions including facility evacuation, hazardous material spill clean-up, and fire prevention. (Ex. 200, p. C.4-9.)

b. Transportation

Containerized hazardous materials will be transported to the facility via truck. The evidence shows that transport of HTF poses the predominant risk associated with hazardous materials transport[29]. These materials can be released during a transportation accident, and the extent of their impact in the event of a release depends on the location of the accident and the rate of vapor dispersion from the surface of the spilled pool. The likelihood of an accidental release during transport is dependent upon three factors:

- The skill of the tanker truck driver;
- The type of vehicle used for transport; and
- Accident rates.

The evidence shows that the risk of an accidental transportation release in the project area was evaluated. The analysis focused on the project area after the delivery vehicle leaves the main Interstate highway. The evidence indicates that an extensive regulatory program applies to shipment of hazardous materials on California highways to ensure safe handling in general transportation. These regulations also address issues of driver competence, and compliance with the regulatory scheme suffices to alleviate significant concerns over transportation risks. (Ex. 200, p. C.4-11.)

[29] It should be noted that previous modeling of spills involving much larger quantities of more toxic materials such as aqueous ammonia (a hazardous material that *would not* be used, stored, or transported to the proposed Blythe Solar project) has demonstrated that less than significant airborne concentrations would occur at distances from the spill. (Ex. 200, C.4-10.)

In addition, Staff presented evidence regarding the risk of hazardous material spills resulting from an earthquake. (Ex. 200, pp. C.4-11 to C.4-12.) The record shows that based upon the historical record of hazardous material containment during both the earthquakes in Haiti (January 12, 2010; magnitude 7.0) and in Chile (February 27, 2010; magnitude 8.8) Staff determined that tank failures during seismic events are not probable and do not represent a significant risk to the public. (*Id*.)

3. Site Security

The evidence establishes that a minimum level of security measures is appropriate in order to protect California's electrical infrastructure from malicious mischief, vandalism, or terrorist attack. (Ex. 200, pp. 6.4-12 to 6.4-13.) The facility will thus use special site security measures during both the construction and operation phases to prevent unauthorized access. Conditions of Certification **HAZ-5** and **HAZ-6** address both construction security and operations security plans. These plans would require the implementation of site security measures that are consistent with both industry site security documents and Energy Commission guidelines. (See Ex. 200, C.4-12.)

Perimeter fencing and breach detectors will be used. Site personnel will undergo background checks and site access will be strictly controlled. Consistent with current state and federal regulations governing the transport of hazardous materials, hazardous materials vendors will have to maintain their transport vehicle fleet and employ only properly licensed and trained drivers. The project owner is required, through the use of contractual language with vendors, to ensure that the hazardous materials suppliers strictly adhere to the U.S. DOT requirements to prepare and implement security plans and to ensure that all hazardous materials drivers are in compliance through personnel background security checks. The compliance project manager (CPM) may authorize modifications to these measures or may require additional measures in response to guidance provided by the U.S. Department of Homeland Security, the U.S. DOE, or the NERC after consultation with both appropriate law enforcement agencies and the project owner. (Ex. 200, p. C.4-13.)

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The Blythe Solar project will use hazardous materials during construction and operation.

2. No acutely toxic hazardous materials will be used on site during construction.

3. The major public health and safety danger associated with the project from hazardous materials use is fire and explosion from natural gas, or fire from Therminol VP-1 heat transfer fluid.

4. The risk of fire and explosion from natural gas, or HTF will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.

5. Based on experience through recent seismic events, tank failures during earthquakes are not probable and do not represent a significant risk to the public.

6. Potential impacts from the other hazardous substances used on-site are not significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.

7. The hazardous materials transportation associated with the Blythe Solar project would not significantly increase the cumulative risks associated with regional hazardous materials transportation.

8. The risk of significant cumulative impacts originating from simultaneous releases of hazardous materials from the Blythe Solar project and nearby facilities is remote and presents no significant risk to the public.

9. The record contains an examination of several alternatives to the proposed project, none of which are preferable to the Blythe Solar project in terms of hazardous materials management.

10. Local emergency responders are adequately equipped and trained to deal with hazardous materials accidents at the Blythe Solar project.

11. Implementation of the mitigation measures described in the evidence and contained in the Conditions of Certification, below, ensures that the project will not cause significant impacts to public health and safety as the result of handling, use, storage, or transportation of hazardous materials.

12. With implementation of the Conditions of Certification, below, the Blythe Solar project will comply with all applicable laws, ordinances, regulations, and

CONCLUSIONS OF LAW

1. The Commission concludes, therefore, that the storage, use, handling, and transportation of hazardous materials associated with the Blythe Solar project will not result in any significant direct or cumulative adverse public health and safety impacts.

2. We conclude that with implementation of the Conditions of Certification below, construction and operation of the Blythe Solar project would be in compliance with all applicable laws, ordinances, regulations, and standards (LORS) regarding long-term and short-term project impacts in the area of hazardous materials management.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix A, below, or in greater quantities or strengths than those identified by chemical name in Appendix A, below, unless approved in advance by the Compliance Project Manager (CPM).

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

HAZ-2 The project owner shall concurrently provide a Hazardous Materials Business Plan (HMBP), a Spill Prevention, Control, and Countermeasure Plan (SPCC), and a Process Safety Management Plan (PSMP) to the Riverside County Environmental Health Department (RCEHD), the Riverside County Fire Department (RCFD), and the CPM for review. After receiving comments from the RCEHD, the RCFD, and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final HMBP shall then be provided to the RCEHD for information and to the CPM for approval.

Verification: At least 60 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Hazardous Materials Business Plan, a Spill Prevention, Control, and Countermeasure Plan, and a Process Safety Management Plan to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for the delivery and handling of liquid hazardous materials. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all

measures to be implemented to prevent mixing of incompatible hazardous materials. This plan shall be applicable during construction, commissioning, and operation of the power plant.

Verification: At least 60 days prior to the delivery of any liquid hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.

HAZ-4 The project owner shall place an adequate number of isolation valves in the Heat Transfer Fluid (HTF) pipe system for section and loop isolation in the event of a fluid leak such that the volume of a total loss of HTF from that isolated pipe system or loop will not exceed 1,250 gallons. These valves shall be actuated manually, remotely, or automatically. The engineering design drawings showing the number, location, and type of isolation valves shall be provided to the CPM for review and approval prior to the commencement of the solar array piping construction.

Verification: At least 30 days prior to the commencement of solar array piping construction, the project owner shall provide the design drawings as described above to the CPM for review and approval.

HAZ-5 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following:

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

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

HAZ-6 The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that will be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC 2002).

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence or wall, at least eight feet high around the Power Block and Solar Field;

2. Main entrance security gate, either hand operated or motorized;

3. Evacuation procedures;

4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;

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

6. A. a statement (refer to sample, **ATTACHMENT A**), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;

   B. a statement(s) (refer to sample, **ATTACHMENT B**), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;

7. Site access controls for employees, contractors, vendors, and visitors;

8. A statement(s) (refer to sample, **ATTACHMENT C**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.802, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;

9. Closed circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) with cameras able to pan, tilt, and zoom, have low-light capability, and are able to view the outside entrance to the control room, and the front gate; and

10. Additional measures to ensure adequate perimeter security consisting of either:

    A. security guard(s) present 24 hours per day, 7 days per week; **or**

    B. power plant personnel on site 24 hours per day, 7 days per week, **and**

    one of the following:

    perimeter breach detectors

    or

    CCTV able to view both site entrance gates and 100% of the power block area perimeter.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures such as protective barriers for critical power plant components depending upon circumstances unique to the facility or in response to industry-related standards, security concerns, cyber security, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Corporation, after consultation with both appropriate law enforcement agencies and the applicant.

Verification: At least 30 days prior to the initial receipt of hazardous materials on site, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. In the annual compliance report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a statement that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

SAMPLE CERTIFICATION (Attachment A)

Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit)(Title)

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

_____

(Company name)

for employment at

_____

(Project name and location)

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

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Contractors

I,

_____

(Name of person signing affidavit)(Title)

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

_____

(Company name)

for contract work at

_____

(Project name and location)

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

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit)(Title)

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

_____

(Company name)

for hazardous materials delivery to

_____

(Project name and location)

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

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

Hazardous Materials Appendix A
Hazardous Materials Proposed for Use at the BSPP

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Sulfuric Acid, 29.5% solution CAS No. 7664-93-9	High toxicity; Hazard class – Corrosive, water reactive	1,000 lbs	PEL: 1 milligram per cubic meter (mg/m^3)	Contained in batteries; 8,000 gal total inventory	Isolated from incompatible chemicals and secondary containment
Carbon Dioxide CAS No. 124-38-9	Low toxicity; Hazard class – Nonflammable gas	Not Applicable	TLV: 5,000 ppm (9,000 mg/m^3) TWA	Carbon steel tank; 60 tons maximum onsite inventory	Carbon steel tank with crash posts
Therminol VP-1 Biphenyl (26.5%) CAS No. 92-52-4 Diphenyl ether (73.5%) CAS No. 101-84-8	Moderate toxicity, Hazard class – Irritant; Combustible Liquid (Class III-B)	Biphenyl = 100 lbs (45.4 kg) Diphenyl ether = Not applicable	Biphenyl = PEL: 0.2 milliliters per cubic meter (ml/m^3) (8-hr TWA) TLV: 0.2 ml/m^3 (1 mg/m^3) (8-hr TWA) Diphenyl ether = TLV: 1 ml/m^3 (8-hr TWA) TLV: 2 ml/m^3 (15-min TWA) PEL: 1 ml/m^3 (7 mg/m^3) (15-min TWA)	8.8 million gal in system, no additional onsite storage.	Continuous monitoring of pressure in piping network; routine inspections (sight, sound, smell) by operations staff; isolation valves throughout piping network to minimize fluid loss in the event of a leak; prompt clean up and repair

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Lube Oil CAS No. 64742-65-0	Low toxicity Hazard class – NA	Not applicable	None established	Carbon steel tanks, 40,000 gallons in equipment and piping, additional maintenance inventory of up to 2,200 gallons in 55-gallon steel drums	Secondary containment area for each tank and for maintenance inventory
Mineral Insulating Oil CAS No. 8042-47-5	Low toxicity Hazard class – NA	Not applicable	None established	Carbon steel transformers; total onsite inventory of 144,000 gallons	Used only in transformers, secondary containment for each transformer
Diesel Fuel CAS No. 68476-34-6	Low toxicity; Hazard class – Combustible Liquid	Not applicable	PEL: none established TLV: 100 mg/m^3 (ACGIH)	Carbon steel tank (4,600 gallon [generator & fire water pump engine])	Stored only in fuel tank of emergency engine, secondary containment
Hydrogen	Low toxicity; Hazard class – Flammable gas	Not applicable	None Established	In generator cooling loop and “tube trailer”; piping system inventory 1,400 pounds; plus 2,600 lbs in storage trailer	Pressure safety tank, crash posts, pressure relief valves
Nitrogen CAS No. 7727-37-9	Low toxicity; Hazard class – Non-Flammable Gas	Not applicable	None established	Carbon steel tank; 30,000 lbs total inventory	Carbon steel tank with crash posts

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Hydraulic fluid CAS No. 64741-89-5	Low to moderate toxicity; Hazard class – Class IIIB Combustible Liquid	Not applicable	TWA (oil mist): 5 mg/m^3 STEL: 10 mg/m^3	Carbon steel tanks and sumps; 2000 gallons in equipment, maintenance inventory of 440 gallons in 55-gallon steel drums	Found only in equipment with a small maintenance inventory; maintenance inventory stored within secondary containment
Welding gas Acetylene CAS No. 74-86-2	Moderate toxicity; Hazard class – Toxic	10,000 lbs	PEL: none established	Steel cylinders; 200 cubic feet each, 3200 cubic feet total on site	Inventory management, isolated from incompatible chemicals
Welding gas Oxygen CAS No. 7782-44-7	Low toxicity; Hazard class – Oxidizer	Not applicable	PEL: none established	Steel cylinders; 200 cubic feet each, 3200 cubic feet total on site	Inventory management, isolated from incompatible chemicals
Welding gas Argon CAS No. 7440-37-1	Low toxicity; Hazard class – Non-flammable Gas	Not applicable	PEL: none established	Steel cylinders; 200 cubic feet each, 3200 cubic feet total on site	Inventory management

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Activated Carbon CAS No. 7440-44-0	Non-toxic (when unsaturated), low to moderate toxicity when saturated, depending on the adsorbed material; Hazard class – combustible solid	Not Applicable	TWA (total particulate): 15 mg/m^3 TWA (respirable fraction): 5 mg/m^3 TLV (graphite, all forms except graphite fibers): 2 mg/m3 TWA	Used in eight x 2,000-lb canisters, 16,000 lbs total inventory, no additional storage	No excess inventory stored on site, prompt disposal when spent
Calcium Hypochlorite 100% CAS No. 7778-54-3	Moderate toxicity; Hazard Class – Corrosive, Irritant	10 lbs	PEL: none established Acute oral toxicity (LD50): 850 mg/kg [Rat].	Minimal onsite storage for water treatment, not expected to exceed 200 lbs	Inventory management, isolated from incompatible chemicals
Water treatment chemical Sodium Carbonate (soda ash)	Low toxicity; Hazard class – Irritant	Not Applicable	TBD	40 tons	Stored in steel silos. Inventory management, isolated from incompatible chemicals
Water treatment chemical Lime (calcium oxide)	Moderate toxicity; Hazard class - Irritant	Not Applicable	TBD	40 tons	Stored in steel silos. Inventory management, isolated from incompatible chemicals

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Water treatment chemical Magnesium Chloride	Non-toxic; Hazard class – NA	Not Applicable	TBD	2000 gallons	Inventory management
Water treatment chemical Sodium Bisulfate (aka sodium hydrogen sulfate)	Low toxicity; Hazard class – Irritant	Not Applicable	Sodium bisulfite = PEL: none established: TLV: 5 mg/m^3 TWA	2000 gallons	Inventory management, isolated from incompatible chemicals
Boiler water treatment chemical Ferric Sulfate (35% solution) CAS Number 10028-22-5	Moderate toxicity; Hazard class - Irritant	1,000 lbs	TBD	40,000 gallons	Inventory management, isolated from incompatible chemicals and secondary containment

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Water treatment chemical NALCO Tri-Act 1800 *or equivalent* Cyclohexlyamine (5 – 10%) Monoehtanolamine (10 – 30%) Methoxyproplyamine (10 – 30%)	High toxicity; Hazard class – Corrosive, Class II Combustible liquid	Not Applicable	Cyclohexlyamine = TLV: 10 ppm (41 mg/m^3) Monoethanolamine = TLV: 3 ppm (7.5 mg/m^3) TWA: 3 ppm (7.5 mg/m^3) STEL: 6 ppm (15 mg/m^3) Methoxyproplyamine = TLV: 5 ppm TWA STEL: 15 ppm	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical NALCO Elimin-Ox Carbohydazide (5 - 10%) *or equivalent*	Moderate toxicity; Hazard class – Sensitizer	Not Applicable	Carbohydazide = PEL: none established	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical NALCO 3D Trasar 3DT185 Phosphoric Acid (60 -100%) *or equivalent*	High toxicity; Hazard class – Corrosive	Not Applicable	Phosphoric acid = PEL: 1 mg/m^3 (TWA) TLV: 1 mg/m^3 (TWA), STEL: 3 mg/m^3	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Water treatment chemical NALCO 3D Trasar 3DT177 *or equivalent* Phosphoric acid (30%)	Moderate toxicity; Hazard class – Irritant	Not Applicable	Phosphoric acid = PEL: 1 mg/m^3 (TWA) TLV: 1 mg/m^3 (TWA), STEL: 3 mg/m^3	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical NALCO 3D Trasar 3DT190 *or equivalent*	Low toxicity; Hazard class – Irritant	Not Applicable	None established for mixture	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical NALCO Acti-Brom (R) 7342 *or equivalent* Sodium bromide	Low toxicity; Hazard class – Irritant	Not Applicable	Sodium bromide = PEL: none established	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical NALCO pHreedom® 5200M *or equivalent* Sodium salt of phosphonomethylated diamine	Low to moderate toxicity; Hazard class – Irritant	Not Applicable	Sodium salt of phosphonomethylated diamine = PEL: none established	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Water treatment chemical NALCO PCL-1346	Low toxicity; Hazard class – Irritant	Not Applicable	None established for mixture	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical NALCO Permacare (R) PC-7408 Sodium bisulfite	Low toxicity; Hazard class – Irritant	Not Applicable	Sodium bisulfite = PEL: none established: TLV: 5 mg/m^3 TWA	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical NALCO BT-3000 *or equivalent* Sodium hydroxide Sodium tripolyphosphate	High toxicity; Hazard class – Corrosive	Not Applicable	Sodium hydroxide = PEL: 2 mg/m^3 Sodium tripolyphosphate = PEL: none established	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Boiler water treatment chemical, pH adjustment Sodium Hydroxide (50%) CAS Number 1310-73-2	High toxicity; Hazard class – Corrosive	1,000 lbs	Sodium hydroxide = PEL: 2 mg/m^3	40,000 gallons	Inventory management, isolated from incompatible chemicals and secondary containment

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Water treatment chemical NALCO 8338 *or equivalent* Sodium nitrite Sodium tolytriazole Sodium hydroxide	Moderate toxicity; Hazard class – Toxic	Not Applicable	Sodium nitrite = PEL: none established Sodium tolytriazole = PEL: none established Sodium hydroxide = PEL: 2 mg/m^3	Plastic totes, 8 x 400 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical 93%-98% sulfuric acid CAS No. 7664-93-9	High toxicity; Hazard class – Corrosive, water reactive	1,000 lbs	PEL: 1 mg/m^3	4,000 gallons	Inventory management, isolated from incompatible chemicals and secondary containment
Water treatment chemical Sodium Hypochlorite (13% solution) CAS No. 7689-52-9	High toxicity; Hazard class – Poison-B, Corrosive	100 lbs	Workplace Environmental Exposure Limit (WEEL) - STEL: 2 mg/m3 PEL: 0.5 ppm (TWA), STEL: 1 ppm as Chlorine TLV: 1 ppm (TWA), STEL: 3 ppm as Chlorine	4,000 gallons	Inventory management, isolated from incompatible chemicals

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Oxygen Scavenger Reagent Acetic Acid 60% CAS No. 64-19-7 Iodine 20% CAS No. 7553-56-2 De-ionized water 20% CAS No. 7732-18-5	Moderate toxicity; Hazard Class – Corrosive, Irritant	5,000 lbs	PEL: 10 ppm TWA PEL: 0.1 ppm N/A	Minimal onsite storage for water treatment, not expected to exceed 200 lbs	Inventory management, isolated from incompatible chemicals
Boiler water treatment oxygen scavenger Carbohydrazide CAS No. 497-18-7	High toxicity; Hazard class – Irritant	Not applicable	Carbohydazide = PEL: none established	2,400 gallons	Inventory management, isolated from incompatible chemicals
Herbicide Roundup® or equivalent CAS No. 38641-94-0	Low toxicity; Hazard class – Irritant	Not applicable	Isopropylamine salt of glyphosphate = no specific occupational exposure has been established	No onsite storage, brought on site by licensed contractor, used immediately	No excess inventory stored on site
Soil stabilizer Active ingredient: acrylic or vinyl acetate polymer or equivalent CAS No. Active ingredient is 'Not Hazardous'	Non-toxic; Hazard class – NA	Not applicable	None established	No onsite storage, supplied in 55-gallon drums or 400-gallon totes, used immediately	No excess inventory stored on site

Table 5.6-3R Summary of Special Handling Precautions for Large Quantity Hazardous Materials (Rev.2)

Hazardous Material and CAS No.[1]	Relative Toxicity[2] and Hazard Class[3]	RQ[4] pounds (kg)	Permissible Exposure Limit (PEL)	Storage Description; Capacity	Storage Practices and Special Handling Precautions	
				[1] CAS No. – Chemical Abstracts Service registry number. This number is unique for each chemical. [2] Low toxicity is used to describe materials with an NFPA Health rating of 0 or 1. Moderate toxicity is used describe materials with an NFPA rating of 2. High toxicity is used to describe materials with an NFPA rating of 3. Extreme toxicity is used to describe materials with an NFPA rating of 4. [3] NA denotes materials that do not meet the criteria for any hazard class defined in the 1997 Uniform Fire Code. [4] RQ - Reportable Quantity for hazardous substance as designated under section 102(a) defined under CERCLA. (To note: As previously discussed in the text, Table 5.6-3 includes those chemicals stored or used in excess of 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases. These quantities coincide with the thresholds for reporting under California's HMBP requirements).		

F. WASTE MANAGEMENT

Blythe Solar will generate nonhazardous and hazardous wastes during construction and operation. This section reviews the project's waste management plans for reducing the risks and environmental impacts associated with handling, storage, and disposal of project-related nonhazardous and hazardous wastes.

Hazardous waste consists of materials that exceed criteria for toxicity, corrosivity, ignitability, or reactivity as established by the California Department of Toxic Substances Control (DTSC).[30] State law requires hazardous waste generators to obtain U.S. EPA identification numbers and to contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.)

Nonhazardous wastes are degradable or inert materials, which do not contain concentrations of soluble pollutants that could degrade water quality and are therefore eligible for disposal at Class II or Class III disposal facilities. (Cal. Code Regs., tit. 14, § 17200 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Existing Site Conditions

The certification process requires a Phase I Environmental Site Assessment (ESA) to identify potential or existing releases of hazardous substances, or contamination at or adjacent to the project site, or within or adjacent to the project's linear corridors. (Ex. 200, p. C.13-7.)

The Applicant submitted an ESA in May 2009 which was prepared by its consultants in accordance with the American Society for Testing and Materials Standard Practice E 1527-05 for ESAs. (Ex.s 1, § 5.16.2.3, Appendix I; 200, p. C.13-8.) The ESA did not identify any recognized environmental conditions (RECs) at or near the project site or along the linear facility corridors.[31]

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[30] California Health and Safety Code, section 25100 et seq. (Hazardous Waste Control Act of 1972, as amended) and Title 22, California Code of Regulations, Section 66261.1 et seq.

[31] A recognized environmental condition is the presence or likely presence of any hazardous substances or petroleum products where conditions indicate an existing release, past release, or a material threat of a release of any hazardous substance or petroleum products into structures on the property or in the ground, groundwater, or surface water of the property.

We have adopted Conditions of Certification **WASTE-2** and **WASTE-3** to mitigate any potentially unrecognized RECs that may be encountered during demolition, excavation, and grading. These Conditions require the project to employ a registered geologist or engineer with experience in remedial investigation to oversee demolition and soil excavation activities. If potentially contaminated soil or underground storage tanks are identified during these activities, the geologist or engineer is required to submit the necessary reports and consult with appropriate regulatory agencies for remediation or other corrective action. (Exs. 1, §§ 5.16.2.3, 5.15.3.1; 200, p. C.13-10.)

During the ESA site reconnaissance, Applicant's consultants observed World War II-era unexploded ordnance (UXO) at the site. Historical information referenced by both Applicant and Staff indicates that the site and surrounding desert area were formerly used as a military training area.[32] (Exs. 9, WM-DR-253--258, pp. WM-1—WM-4; 200, p. C.13-9; 213.)

In 1987, the federal Defense Environmental Restoration Program (DERP) completed its investigation and UXO cleanup activities at the Blythe Army Airfield and the Poorman and Jeep target ranges adjacent to the project site. In 1999, the DERP's supplemental risk assessment for the Airfield and target ranges concluded that "based on site observations, there were no unexploded hazards on the surface, only spent bullets" resulting in an overall Hazard Probability Value within the "Remote" category. Further, according to Applicant and Staff, there is no credible evidence that firing and bombing ranges were located within the project site boundaries. Rather, the confirmed presence of debris from test/practice landmines observed during the ESA site reconnaissance indicates the site was used as a ground force maneuver area. (Ex. 213, p. 1.)

To ensure that onsite workers are protected from any UXO exposure, the Applicant proposed a mitigation plan for the removal and disposal of UXO and remnants of munitions that may be discovered during demolition and excavation.

The plan is incorporated in Condition **WASTE-1**, which requires the project owner to prepare an Identification, Training, and Reporting Plan to train site workers to identify and avoid UXO, to employ experts to conduct geophysical surveys for UXO, and to investigate, remove, and dispose of any UXO found at

[32] The former Blythe Army Airfield is located adjacent to the southern site boundary, and two small arms target ranges, Poorman and Jeep Range, are located directly east of the site's southern boundary right-of-way. Exs. 1, Appendix I; 200, p. C.13-9; 213, p. 2;.)

the site. (Exs. 1, Appendix I; 200, p. C.13-9; 213.) In addition, Condition **WORKER SAFETY-1** ensures that any risk to workers due to exposure to residual hazardous wastes or UXO in site soils will be minimized to insignificant levels.

2. Construction Impacts and Mitigation

Construction of all four phases of the solar facility and its associated facilities will generate both nonhazardous and hazardous wastes. With implementation of source reduction and recycling, the amount of waste generated during project construction is expected to be minimal.

During construction, the project will generate an estimated 70 cubic yards per week of nonhazardous solid wastes, consisting of scrap wood, concrete, steel, glass, plastic, paper, insulating materials, aluminum, and food waste. Recyclable materials will be separated and removed to recycling facilities and non-recyclable materials will be collected and deposited at Class III landfills in accordance with applicable LORS. (Exs. 1, § 5.16.3.1, Table 5.16-5; 200, p. C.13-10.)

In addition, ground surface improvement for SCE's Colorado River Substation expansion for the Blythe Solar interconnection will generate 20,000 cubic yards of soil and vegetation waste. Construction of the substation expansion will result in various waste materials that can be recycled and salvaged. Materials that cannot be recycled will be deposited at appropriate Class III landfills in accordance with applicable LORS. (Ex. 200, Appendix A, § 3.10, p. A-57.)

Nonhazardous liquid wastes include sanitary wastes and dust suppression, drainage, and equipment washwater. Sanitary wastes will be collected in portable, self-contained toilets and pumped periodically for disposal at an appropriate facility. Potentially contaminated equipment washwater will be contained at designated wash areas and transported to a sanitary wastewater treatment facility. See the **Soil and Water Resources** section of this Decision for a description of project wastewater management. (Ex. 200, p. C.13-10.)

Universal waste generated during construction will include about 70 spent batteries over a 5-year period (alkaline dry cell, nickel-cadmium, and lithium ion) and 8 drums of aerosol cans per year. Universal waste will be accumulated for less than one year and recycled by licensed universal waste handlers. Ex. 200, p. C.13-10.)

Hazardous wastes include approximately one cubic yard of empty hazardous material containers; 350 gallons of solvents, used oil, paint, and oily rags (every 90 days); 1,000 gallons of heat exchanger cleaning waste (once per power plant unit); and variable amounts of flushing and cleaning wash water. Hazardous materials that cannot be recycled or used for energy recovery will be properly manifested, transported to, and deposited at a Class I hazardous waste facility by licensed hazardous waste collection and disposal companies. The disposal methods described in the evidentiary record are consistent with applicable LORS. (Exs. 1, § 5.16.3.1, Table 5.16-5; 200, p. C.13-10.)

Condition **WASTE-4** requires the project owner to implement an approved Construction Waste Management Plan to ensure compliance with applicable LORS. Condition **WASTE-5** requires the project owner to obtain a hazardous waste generator identification number from the U.S. Environmental Protection Agency before generating any hazardous wastes during project construction and operation. Condition **WASTE-6** requires the project owner to notify BLM and the Energy Commission's Compliance Project Manager (CPM) whenever any waste management related enforcement action is initiated by a local, state, or federal authority concerning the project or its waste disposal contractors.

3. Operation Impacts and Mitigation

During operation the project will produce an estimated 200 pounds of dirty shop rags per month; 3,000 cubic yards per year of soil contaminated with heat transfer fluid (HTF) below hazardous threshold levels; 1,000 cubic feet of spent demineralizer resin every three years; 4,000 pounds of auxiliary cooling tower basin sludge per year; 2,000 cubic feet spent softener resin every three years; and variable amounts of damaged parabolic mirrors, used air filters, office paper, newsprint, aluminum cans, plastic and glass containers, and other miscellaneous domestic and office waste. (Exs. 1, § 5.16, Table 5.16-6; 200, pp. C.13-12—C.13-15.)

All nonhazardous wastes will be recycled to the extent feasible, and non-recyclable wastes will be regularly transported to a local solid waste disposal facility in accordance with applicable LORS. Management of nonhazardous liquid wastes is described in the **Soil and Water Resources** section of this Decision. Although spills may occur, proper hazardous material handling and good practices will keep spill wastes to a minimum. A septic tank and leach field system will handle domestic sewage. Other liquid waste streams will be either recycled or sent to the onsite evaporation ponds. (Ex. 200, p. C.13-15.)

Project operations will generate universal waste, including approximately 480 spent batteries (e.g., alkaline dry cell, nickel-cadmium, and lithium ion) and 200 spent fluorescent bulbs or high-intensity discharge lamps. Universal waste will be accumulated for less than one year and recycled as appropriate. Ex. 200, pp. C.13-15—C.13-16.)

Hazardous wastes will include an estimated 200,000 gallons per year of used hydraulic fluid, oils, and grease associated with the HTF system, turbine, and other hydraulic equipment; 12,000 gallons of effluent per year from the oily water separation system resulting from plant wash down; twenty 55-gallon drums of oil adsorbent and oil filters per month; 182,000 pounds per year of spent carbon from air pollution control of the HTF vent; 40 cubic yards of soil per year of contaminated with HTF as a result of solar array equipment leaks; and 80 spent lead acid batteries every two years. (Exs. 1, § 5.16.3.2, Table 5.16-6; 200, p. C.13-16.)

Hazardous wastes will be temporarily stored onsite up to 90 days and transported by licensed hazardous waste haulers to authorized disposal facilities in accordance with LORS applicable to generators of hazardous waste. (Ex. 200, pp. C.13-16—C.13-17.)

Occasional spills of heat transfer fluid (HTF) from either equipment failure or human error can result in contaminated soil. HTF spills typically spread laterally on the bare ground and soak down to a relatively shallow depth. Soil contaminated with HTF is regulated as a hazardous material. (Ex. 200, p. C.13-14.) Condition **WASTE-8** requires the project owner to comply with regulatory requirements for managing accidental discharges of HTF and to ensure that hazardous concentrations of contaminated HTF soils are not treated in the project's Land Treatment Unit (LTU), which is designed to only handle HTF soils that do not exceed hazardous threshold levels. (*Id.*)

Condition **WASTE-7** requires the project owner to develop and implement an Operation Waste Management Plan to identify all waste streams and the methods of managing each waste. To ensure proper cleanup and management of contamination due to unauthorized releases of hazardous wastes, Condition **WASTE-9** requires the project owner to report, clean up, and remediate as necessary, any hazardous materials spills or releases in accordance with applicable law. The **Hazardous Material Management** section of this Decision describes the requirements for hazardous material management, including spill

reporting, containment, spill control, and countermeasures. Condition **WASTE-5** (hazardous waste generator identification number), *supra*, and Condition **WASTE-6** (enforcement action)*, supra*, also apply to waste management during operations

4. Potential Impacts on Waste Disposal Facilities

Although Applicant and Staff agreed that there is no local requirement for the project to comply with the 50 percent waste diversion program established by the Integrated Waste Management Compliance Act, [33] the Energy Commission has an obligation to ensure that the large project footprint in Riverside County does not result in unnecessary or burdensome waste disposal. Therefore, we have included a requirement in Condition **WASTE-4** for the project owner to provide a reuse/recycling plan for construction and demolition materials that meets or exceeds the 50 percent waste diversion goal established by the Integrated Waste Management Compliance Act. Compliance with Condition **WASTE-4** will ensure that project wastes are managed properly and that the project's potential impacts on local landfills are maintained at insignificant levels. (Ex. 200, pp. C.13-9 to C,13-10.)

The Blythe Sanitary Landfill is the nearest Class III facility, about 20 miles from the project site, with remaining capacity of more than 2 million cubic yards. There are five other Class III landfills located in the project vicinity, including the Oasis Sanitary Landfill (in Oasis), Desert Center Landfill (in Desert Center), El Sobrante Landfill (in Corona), Monofill Facility (in Brawley), and Chiquita Canyon Sanitary Landfill (in Valencia). (Ex. 1, § 5.16.2.1, Table 5.16-4.) The evidence shows that with the exception of Oasis and Desert Center, there is sufficient capacity at these facilities to handle the project's construction and operation nonhazardous wastes, which would contribute to less than 1.0 percent of total capacity. (Ex. 200, pp. C.13-17—C.13-18.) To ensure that the project's impacts on landfill capacity will not be significant, Condition **WASTE-10** prohibits the project owner from depositing wastes at the Oasis and Desert Center Landfills.

Hazardous wastes will be transported to one of two available Class I landfills: Clean Harbors Buttonwillow Landfill in Kern County and Chemical Waste Management Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and III waste. Evidence indicates that the quantity of hazardous wastes will be approximately 0.1 percent of the combined capacity of

[33] Public Resources Code Section 40000 et seq.; Title 14, California Code of Regulations, Section 17387 et seq.

the two Class I landfills. There is sufficient remaining capacity at these facilities to handle the project's hazardous wastes during its operating lifetime. (Ex. 200, p. C.13-18; Ex. 1, § 5.16.2.2.)

5. Smaller Alternative or No Project Alternative

Since the evidence establishes that the four phases of the project as proposed by the Applicant would not result in any significant impacts on waste management, a smaller footprint would likely result in even fewer impacts. The "no project" alternative would not result in any project-related waste management impacts. (Ex. 200, pp. C.13-19--C.13-22.)

6. Cumulative Impacts and Mitigation

The evidence shows that there is potential for substantial future development of other solar and wind projects as well as other commercial/residential projects near Blythe in Riverside County and throughout the southern California desert region. As a result, the quantities of solid and hazardous wastes generated by this project will add to the total quantities of waste generated by new local and regional development. However, since this project's waste stream is relatively low, recycling efforts will be prioritized, and sufficient disposal capacity is available, the resulting contribution to cumulative impacts on disposal facilities will be insignificant for both nonhazardous and hazardous waste disposal. (Ex. 200, pp. C.13-22--C.13-24.)

7. Agency and Public Comment

There was no reported agency or public comment on waste management.

FINDINGS OF FACT

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

1. Applicant's Phase I Environmental Site Assessment (ESA) for the site and linear corridors did not identify any recognized environmental conditions (RECs).

2. Due to evidence of unexploded ordnance (UXO) on the site, the project owner will provide an Identification, Training, and Reporting Plan to train

site workers to identify UXO, to conduct geophysical surveys for UXO, and to investigate, remove, and dispose of any UXO found on the site.

3. The project will generate nonhazardous and hazardous wastes during excavation, construction, and operation.

4. The project owner will implement appropriate characterization, disposal, and remediation measures to ensure that the risk of exposure to contaminated soils at the site or along the linear corridors is reduced to insignificant levels.

5. The project will recycle nonhazardous and hazardous wastes to the extent feasible and in compliance with applicable law.

6. Hazardous wastes that cannot be recycled will be transported by registered hazardous waste transporters to appropriate Class I landfills.

7. Solid nonhazardous wastes that cannot be recycled will be deposited at Class II and III landfills in the local area, except for the Oasis and Desert Center Landfills.

8. Liquid wastes will be classified for appropriate disposal and managed in accordance with the Conditions of Certification listed in the **Soil and Water Resources** section of this Decision.

9. The project owner will comply with regulatory requirements for managing accidental discharges of Heat Transfer Fluid, which could result in contaminated soils.

10. Disposal of project wastes will not result in any significant direct, indirect, or cumulative impacts on existing waste disposal facilities.

CONCLUSIONS OF LAW

1. Implementation of the Conditions of Certification, below, and the waste management practices described in the evidentiary record will reduce potential adverse impacts to insignificant levels and ensure that project wastes are handled in an environmentally safe manner.

2. The management of project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management as identified in the pertinent portions of **Appendix A** of this Decision.

CONCLUSIONS OF CERTIFICATION

WASTE-1 The project owner shall prepare a UXO Identification, Training and Reporting Plan to properly train all site workers in the recognition, avoidance and reporting of military waste debris and ordnance. The project owner shall submit the plan to the CPM for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:

- A description of the training program outline and materials, and the qualifications of the trainers; and
- Identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not); and
- Work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near surface or buried ordnance in all proposed land disturbance areas.

The project owner shall provide documentation of the plan and provide survey results to the CPM.

Verification: The project owner shall submit the UXO Identification, Training and Reporting Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site. The results of geophysical surveys shall be submitted to the CPM within 30 days of completion of the surveys.

WASTE-2 The project owner shall provide the résumé of an experienced and qualified Professional Engineer or Professional Geologist to the CPM for review and approval. The résumé shall show experience in remedial investigation and feasibility studies. This Professional Engineer or Professional Geologist shall be available during site characterization (if needed), excavation, grading, and demolition activities. The Professional Engineer or Professional Geologist shall be given authority by the project owner to oversee any earth-moving activities that have the potential to disturb contaminated soil and impact public health, safety, and the environment.

Verification: At least 30 days prior to the start of site mobilization the project owner shall submit the resume to the CPM for review and approval.

WASTE-3 If potentially contaminated soil is identified during site characterization, excavation, grading, or demolition at either the proposed site or linear facilities—as evidenced by discoloration, odor, detection by handheld instruments, or other signs—the Professional Engineer or Professional Geologist shall inspect the site; determine the

need for sampling to confirm the nature and extent of contamination; and provide a written report to the project owner, representatives of Department of Toxic Substances Control (DTSC) or Regional Water Quality Control Board (RWQCB), the Compliance Project Manager (CPM) stating the recommended course of action.

Depending on the nature and extent of contamination, the Professional Engineer or Professional Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If in the opinion of the Professional Engineer or Professional Geologist significant remediation may be required, the project owner shall contact the CPM, and representatives of the DTSC or RWQCB for guidance and possible oversight.

Verification: The project owner shall submit any reports filed by the Professional Engineer or Professional Geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-4 The project owner shall submit a Construction Waste Management Plan to the CPM for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:

- a description of all construction waste streams, including projections of frequency, amounts generated and hazard classifications;
- a survey of structures to be demolished that identifies the types of waste to be managed; and
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods, and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: The project owner shall submit the Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site.

WASTE-5 The project owner shall obtain a hazardous waste generator identification number from the United States Environmental Protection Agency (USEPA) prior to generating any hazardous waste during project construction and operations.

Verification: The project owner shall keep a copy of the identification number on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of

the notification and issued number documentation to the CPM is only needed once unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM in the next scheduled compliance report.

WASTE-6 Upon notification of any impending waste management-related enforcement action related to project site activities by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts for the project, and describe the owner's response to the impending action or if a violation has been found, how the violation will be corrected.

Verification: The project owner shall notify the CPM in writing within 10 days of receiving written notice from authorities of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed as a result of a finalized action against the project.

WASTE-7 The project owner shall submit the Operation Waste Management Plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to ensure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;

- a detailed description of how facility wastes will be managed and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and
- a detailed description of how facility wastes will be managed and disposed upon closure of the facility.

Verification: The project owner shall submit the Operation Waste Management Plan to the CPM for approval no fewer than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary.

The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year, provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan, and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.

WASTE-8 The project owner shall submit to the CPM and DTSC for approval an assessment of whether the HTF contaminated soil is considered hazardous or non-hazardous under state regulations. HTF-contaminated soil that exceeds the hazardous waste levels must be disposed of in accordance with California Health and Safety Code (HSC) Section 25203. HTF-contaminated soil that does not exceed the hazardous waste levels may be discharged into the land treatment unit (LTU). For discharges into the LTU, the project owner shall comply with the Waste Discharge Requirements contained in the Soil & Water Resources section of this document.

The project owner shall document all releases and spills of HTF as described in Condition of Certification WASTE-9 and report only those that are 42 gallons or more, the CERCLA reportable quantity, as required in the Soil & Water Resources section of this document. Cleanup and temporary staging of HTF-contaminated soils shall be conducted in accordance with the approved Operation Waste Management Plan required in Condition of Certification of WASTE-8. The project owner shall sample HTF-contaminated soil from CERCLA reportable incidents involving 42 gallons or more in accordance with the United States Environmental Protection Agency's (USEPA) current version of "Test Methods for Evaluating Solid Waste" (SW-846). Samples shall be analyzed in accordance with USEPA Method 8015 or other method to be reviewed and approved by DTSC, the CPM.

If DTSC and the CPM - determine the HTF-contaminated soil is considered hazardous it shall be disposed of in accordance with California Health and Safety Code (HSC) Section 25203 and procedures outlined in the approved Operation Waste Management Plan required in Condition of Certification WASTE-7 and reported to the CPM in accordance with Condition of Certification WASTE-9.

If DTSC and the CPM determine the HTF-contaminated soil is considered non-hazardous it shall be retained in the LTU and treated on-site in accordance with the Waste Discharge Requirements contained within in the Soil & Water Resources section of this document.

Verification: Within 28 days of an HTF spill of 42 gallons or more the project owner shall provide the results of the analyses and their assessment of whether the HTF-contaminated soil is considered hazardous or non-hazardous to DTSC and the CPM for review and approval.

WASTE-9 The project owner shall ensure that all accidental spills or unauthorized releases of hazardous substances, hazardous materials, and hazardous waste are documented and remediated, and that wastes generated from accidental spills and unauthorized releases are properly managed and disposed of in accordance with all applicable federal, state, and local requirements. For the purpose of this Condition of Certification, "release" shall have the definition in Title 40 of the Code of Federal Regulations, Part 302.3.

The project owner shall document management of all accidental spills and unauthorized releases of hazardous substances, hazardous materials, and hazardous wastes that occur on the project property or related linear facilities. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; how release was managed and material cleaned up; amount of contaminated soil and/or cleanup wastes generated; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release.

Verification: A copy of the accidental spill or unauthorized release documentation shall be provided to the CPM within 30 days of the date the release was discovered.

WASTE-10 The project owner shall ensure that all non-hazardous, non-recyclable, and non-reusable construction and operation waste is not diverted to Desert Center Landfill or Oasis Sanitary Landfill.

Verification: The project owner shall document all project-related solid waste disposal actions to the Compliance Project Manager annually.

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

This section addresses the biological resources associated with the Blythe Solar Power Project (BSPP), including potential impacts related to Project construction, operation and decommissioning. The following analysis describes the biological resources at the Project site and applicable off-site areas; identifies potential Project-related direct, indirect and cumulative impacts; and provides appropriate mitigation. Specifically, mitigation measures are included in the Conditions of Certification to ensure that the Project will have no significant impacts to biological resources and will comply with all applicable LORS.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The Applicant, Palo Verde Solar I, LLC (PVSI), proposes to develop and operate a 1,000 megawatt (MW) solar energy facility called BSPP (or Project) in eastern Riverside County, approximately eight miles northwest of the City of Blythe, two miles north of U.S. Interstate 10 (I-10), and 13 miles west of the Colorado River. (Exhibit 1; Executive Summary Figure 1-1.)

The Project consists of a concentrated solar thermal electric generating facility with four identical and independent solar plants (units), each of which would have a nominal capacity of 250 MW. The proposed Project includes a right-of-way (ROW) area of approximately 9,400 aces on lands administered by the U.S. Bureau of Land Management (BLM). The total area of disturbance associated with the proposed Project is approximately 7,205 acres, including 7,082 acres from activities related to the Project site, and 123 acres within associated linear facility corridors and a planned substation. Electricity produced by all four proposed units will be distributed from a central switchyard via a new, approximately 10-mile long, 230-kV transmission line (gen-tie line). The proposed gen-tie line will extend south and southwest to a planned substation that will be constructed by Southern California Edison as a separate project. The majority of the gen-tie line corridor will also encompass proposed telecommunications facilities and an access route, as well as a new natural gas pipeline (that will tie into an existing line approximately two miles south of the Project site). The remaining portions of the telecommunications facilities, access

route, and gas line will be located in a separate (parallel) corridor. (Exhibit 202; Appendix A, Figure 1.) Environmental effects from the substation and related gen-tie connection area are considered indirect impacts of the proposed Project, and are therefore included in the following assessment of Project-related impacts and mitigation. Because the substation and gen-tie connection area will be subject to independent environmental review and mitigation requirements, however, mitigation calculations for the proposed Project do not include acreages from these facilities. (Exhibit 200; p. C.2-3.)

The Project site is located in the eastern Colorado Desert, which is a sub-section of the Sonoran Desert. The Sonoran Desert is an expansive desert region that encircles the Gulf of California and incorporates portions of northwestern Mexico (including much of Baja California), southwestern Arizona, and southeastern California. The Colorado Desert is referred to as the California "Low Desert" and receives more summer precipitation than the northern deserts, with most of this rainfall occurring during thunderstorms in August and September.

The Project site is situated within an alluvial-filled basin on Palo Verde Mesa, with surface drainage on the mesa (including the Project site) generally to the southeast towards the Colorado River. Runoff within the Project site occurs as as sheet flow and through a number of dry (ephemeral) washes that extend into, through and downstream of the site. A branch of McCoy Wash occurs in the northeastern ROW corner, with this drainage continuing east-southeast to the Colorado River. The ephemeral washes within the Project disturbance area abate into the landscape prior to any surface hydrological connection with McCoy Wash or the Colorado River. (Exhibit 200; p. C.2-13.) Local groundwater resources are associated with the Palo Verde Mesa Groundwater Basin, which encompasses approximately 280 square miles and includes the Project site.

2. Existing Biological Resources

The assessment of biological resources includes the approximately 7,025-acre Project disturbance area and an associated one-mile buffer, with a combined Biological Resources Study Area (BRSA) of 24,593 acres. Five vegetation communities occur within the Study Area, including desert dry wash woodland, vegetated ephemeral swales, unvegetated ephemeral dry wash, Sonoran creosote bush scrub, and stabilized and partially stabilized desert dunes. All five of these habitats also occur within the Project disturbance area, with Sonoran creosote bush scrub the most prevalent. In addition, several of the noted communities within the Study Area (including the Project disturbance area) also

encompass broad expanses of desert pavement, a distinctive but largely unvegetated habitat. (Exhibit 200; p. C.2-13.) **Table** 1 summarizes the occurrence of the five vegetation communities (and other cover types) within the Project disturbance area, associated one- mile buffer zone, and combined Study Area. Two of the five identified communities, desert dry wash woodland and vegetated ephemeral swales/creosote bush-big galleta association, are considered sensitive by the California Natural Diversity Database (CNDDB), with brief descriptions of all five on-site vegetation communities provided below.

Biological Resources Table 1
Natural Communities/Cover Types

Vegetation Communities/Cover Type within Biological Resources Study Area	Project Disturbance Area	One-mile Buffer	BRSA
Riparian			
Desert dry wash woodland	213	658	871
Unvegetated ephemeral dry wash	9	2	11
Vegetated ephemeral swales (creosote bush-big galleta association)	371	103	474
Subtotal Riparian	*593*	*763*	*1,356*
Upland			
Sonoran creosote bush scrub	6,365	13,026	19,391
Stabilized and partially stabilized desert dunes	58	2605	2663
Subtotal Upland	*6,423*	*15,631*	*22,054*
Other Cover Types			
Agricultural Land	4	1,622	1,626
Developed	5	147	152
Disturbed	0	16	16
Subtotal Other Cover Types	*9*	*1,785*	*1,794*
Total Acres	**7,025**	**18,179**	**25,204**

Sources: (Exs. 60; 200, p. C.2-14; 202, Biological Resources, p.10.)

Riparian Communities

All three of the identified riparian communities are identified as "Waters of the State" and are therefore under the jurisdiction of the California Department of Fish and Game (CDFG). Because these ephemeral washes are considered isolated waters, however, they are not designated as "Waters of the U.S." and are thus not under the jurisdiction of the U.S. Army Corps of Engineers (USACE). All of the ephemeral washes within the Project disturbance area provide important hydrologic and biological functions and values, including groundwater recharge, surface water quality enhancement (e.g., through particulate

filtering/retention), provision of "sinks" for materials such as nutrients, increased/enhanced habitat diversity, and provision of wildlife habitat/movement corridors. (Exhibit 200; pp. C.2-17 to C.2-20.)

No site-specific information is available regarding the presence of ephemeral washes, desert dry wash woodland and/or other Waters of the State in the planned substation site/gen-tie connection area. Specifically, while no State Waters were observed during preliminary review of topographic maps and aerial imagery, field delineations would be required to substantiate this condition. (Exhibit 202; Appendix A, p. A-23.) That project is within the jurisdiction of the California Public Utilities Commission and we expect that appropriate environmental review will be conducted by or on behalf of Southern California Edison, the project owner.

Desert Dry wash Woodland

Desert dry wash woodland is identified as a sensitive vegetation community by the CNDDB and the BLM. This community consists of open to densely covered, drought-deciduous, microphyll (small-leaved) riparian scrub woodland, and often supports braided wash channels that change patterns and flow directions following surface flow events. Indicator plants include blue palo verde (*Parkinsonia florida*), cheesebush (*Hymenoclea salsola*), smoke tree (*Psorothamnus spinosus*), sweetbush (*Bebbia juncea* var. *aspera*), tamarisk (*Tamarisk* spp.), and catclaw acacia (*Acacia gregii*). Desert dry wash woodland provides value to various species of wildlife in the form of food, cover, dispersal, and refuge habitat (Exhibit 200; pp. C.2-17 to C.2-18.)

Vegetated Ephemeral Washes of Creosote Bush-Big Galleta Grass Association

This vegetation community is relatively uncommon in California deserts, and is defined by CDFG and CNDDB as a rare natural community. Within the Study Area, the creosote bush-big galleta grass community occurs as an understory component in washes within desert dry wash woodland habitat and continues along the drier reaches of ephemeral desert washes. Dominant and indicator plants include creosote bush (*Larrea tridentata*), big galleta grass (*Pleuraphis rigida*), and cheesebush. This community often occurs as the only vegetated habitat in broad expanses of desert pavement, which increases its value to wildlife. (Exhibit 200; p. C.2-18.)

Unvegetated Ephemeral Dry Wash

This community occurs in the transition zone between desert dry wash woodland in higher elevation areas and creosote bush-big galleta grass communities in flatter areas. Unvegetated dry washes provide movement corridors for small and large mammals and provide a seasonal water source not available in the surrounding dry uplands. Dry washes are defined by shelving and/or scour resulting in an established bed, bank, and channel, with ephemeral washes in the Project area generally composed of multiple, sinuous subchannels of varying sizes. Upland Sonoran creosote bush scrub habitat often occurs between the channels of the dry washes, with these areas not considered jurisdictional. (Exhibit 200; pp. C.2-19 and C.2-19.)

Upland Communities

- **Sonoran Creosote Bush Scrub**

Sonoran creosote bush scrub occurs on well-drained slopes, fans, and valleys, and is the dominant vegetation community throughout the Study Area (including the Project disturbance area, refer to **Table 1**). The indicator plant species within this community are creosote bush, white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), ocotillo (*Fouqueria splendens*), and cheesebush (Exhibit 200; p. C.2-14.).

- **Stabilized and Partially Stabilized Desert Dunes**

These dune systems are stabilized or partially stabilized by evergreen and/or deciduous shrubs and grasses, and typically retain water just below the sand surface which allows deep-rooted, perennial vegetation to survive during longer drought periods. The dominant plant species include four-wing saltbush (*Atriplex canescens*), desert croton (*Croton californicus*), and Colorado Desert buckwheat (*Eriogonum deserticola*). The western portion of the gen-tie line corridor and the substation site/gen-tie connection area are inferred to include stabilized and partially stabilized desert dunes associated with the Chuckwalla-Palen dune system, with no dunes or sand fields present within the proposed solar plant site. (Exhibit 202; Appendix A, pp. A-22 and A-23.) The described dunes are an important habitat type for a number of local sensitive and common species, with additional discussion of sensitive floral and faunal species provided below. (Exhibit 200; p C.2-15.)

Non-native Habitats and Noxious Weeds

Non-native habitats within the Study Area include agricultural, developed and disturbed areas, with these habitats limited to approximately one acre of agricultural land within the Project disturbance area (refer to **Table 1**). These areas often create favorable conditions for the occurrence and spread of noxious weeds, generally defined to include non-native plants included on the weed lists of the California Department of Food and Agriculture (CDFA) and California Invasive Plant Council (Cal-IPC), or weeds of special concern identified by the BLM. They are of particular concern in wild lands because of their potential to degrade habitat and disrupt the ecological functions of an area. Five noxious weed species were observed within the Study Area, including Sahara mustard (*Brassica tournefortii*), Russian thistle (*Salsola sp.*), Mediterranean tamarisk (or salt cedar, *Tamarix ramosissima*), Mediterranean grass (*Schismus arabicus*), and red brome (*Bromus madritensis ssp*). (Exhibit 200; pp. C.2-15 to C.2-17.)

Special-status Species

Special-status species are plant and wildlife species that have been afforded special recognition by federal, state, or local resource agencies or organizations. **Table 2** lists all special-status species evaluated during the Project analysis that are known to occur or could potentially occur in the Project area and vicinity. Special-status species observed during the 2009 and 2010 field surveys are indicated by **bold-face type**.

Biological Resources Table 2
Special-Status Species Known to or With Potential to Occur in the Blythe Solar Power Project Biological Resources Study Area

PLANTS		
Common Name	**Scientific Name**	**Status State/Fed/CNPS/BLM/ Global Rank/State Rank**
Chaparral sand verbena	*Abronia villosa var. aurita*	__/__/1B.1/__/G5T3T4/2.1
Angel trumpets	*Acleisanthes longiflora*	__/__/2.3/__/G5/S1.3
Desert sand parsley	*Ammoselinum giganteum*	__/__/2.3/__/G2G3/SH
Small-flowered androstephium	*Androstephium breviflorum*	__/__/2.2/__/G5/S2[34]

[34]As defined by the California Native Plant Protection Act, a plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish and Game Code §1901).

PLANTS		
Common Name	**Scientific Name**	**Status State/Fed/CNPS/BLM/ Global Rank/State Rank**
Harwood's milk-vetch	***Astragalus insularis var. harwoodii***	**__/__/2.2/__/G5T3/S2.?**
Coachella Valley milk-vetch	*Astragalus lentiginosus var. coachellae*	__/FE/1B.2./S/G5T2/S2.1
California ayenia	*Ayenia compacta*	E/__/2.3/__/G4/S3.3
Pink fairy duster	*Calliandra eriophylla*	__/__/2.3/__/G5/S2.3
Sand evening-primrose	*Camissonia arenaria*	__/__/2.2/__/G4?/S2
Crucifixion thorn	*Castela emoryi*	__/__/2.3/__/G3/S2.2
Abram's spurge	*Chamaesyce abramsiana*	__/__/2.2/__/G4/S1.2
Arizona spurge	*Chamaesyce arizonica*	R/__/2.3/__/G5/S1.3
Flat-seeded spurge	*Chamaesyce platysperma*	__/__/1B.2/S/G3/S1.2?
Las Animas colubrina	***Colubrina californica***	**__/__/2.3/__/G4/S2S3.3**
Spiny abrojo/Bitter snakeweed	*Condalia globosa var. pubescens*	__/__/4.2/__/G5T3T4/S3.2
Foxtail cactus	*Coryphantha alversonii*	__/__/4.3/__/G3/S3.2
Ribbed cryptantha	***Cryptantha costata***	**__/__/4.3/__/G4G5/S3.3**
Winged cryptantha	***Cryptantha holoptera***	**__/__/4.3/__/G3G4/S3?**
Wiggins' cholla	*Cylindropuntia wigginsii (syn=Opuntia wigginsii)*	__/__/3.3/__/G3?Q/S1.2?
Utah milkvine	***Cynanchum utahense***	**__/__/4.2/__/G4/S3.2**
Glandular ditaxis	*Ditaxis claryana*	__/__/2.2/__/G4G5/S1S2
California ditaxis	*Ditaxis serrata var. californica*	__/__/3.2/__/G5T2T3/S2.2
Harwood's eriastrum	***Eriastrum harwoodii***	**__/__/1B.2/BLM/G2/S2**
California satintail	*Imperata brevifolia*	__/__/2.1__/G2/S2.1
Cottontop cactus	***Echinocactus polycephalus* var. *polycephalus***	**__/__/__/__/__/__**
Pinvelvet mallow	*Horsfordia alata*	__/__/4.3/__/G4/S3.3
Bitter hymenoxys	*Hymenoxys odorata*	__/__/2/__/G5/S2
Spearleaf	*Matelea parvifolia*	__/__/2.3/__/G5?/S2.2
Argus blazing star[35]	*Mentzelia puberula*	__/__/__/__/__/__
Slender woolly-heads	*Nemacaulis denudata var. gracilis*	__/__/2.2/__/G3G4T3?/S2S3
White-margined penstemon	*Penstemon albomarginatus*	__/_ /1B.1/S/G2/S1
Lobed cherry	*Physalis lobata*	__/__/2.3/__/G5/S1.3
Desert portulaca	*Portulaca halimoides*	__/__/4.2/__/G5/S3
Desert unicorn plant	***Proboscidea althaeifolia***	**__/__/4.3/__/G5/S3.3**
Orocopia sage	*Salvia greatae*	__/__/1B.3./S/G2/S2.2
Desert spikemoss	*Selaginella eremophila*	__/__/2.2./__/G4/S2.2?
Cove's cassia	*Senna covesii*	__/__/2.2/__/G5?/S2.2
Mesquite nest straw	*Stylocline sonorensis*	__/__/1A/__/G3G5/SX

[35] Proposed new addition to the CNPS Inventory

PLANTS		
Common Name	**Scientific Name**	**Status State/Fed/CNPS/BLM/ Global Rank/State Rank**
Dwarf germander	*Teucrium cubense ssp. depressum*	__/__/2.2/__/G4G5T3T4/S2
Jackass clover	*Wislizenia refracta ssp. refracta*	__/__/2.2/__/G5T5?/S1.2?
Palmer's jackass clover[36]	*Wislizenia refracta ssp. palmeri*	__/__/?/__/__/__
WILDLIFE		
Common Name	**Scientific Name**	**Status State/Federal**
Reptiles/Amphibians		
Desert tortoise	***Gopherus agassizii***	**ST/FT**
Couch's spadefoot toad	*Scaphiopus couchii*	CSC/__/BLM Sensitive
Mojave fringe-toed lizard	***Uma scoparia***	**CSC/BLM Sensitive**
Desert rosy boa	*Charina (Lichanura) trivirgata*	__/__
Chuckwalla	***Sauromalus obesus***	__/__
Birds		
Western burrowing owl	***Athene cunicularia hypugaea***	**CSC/BCC/BLM Sensitive**
Golden eagle	*Aquila chrysaetos*	CFP/__/BLM Sensitive
Short-eared owl	*Asio flammeus*	CSC
Ferruginous hawk	***Buteo regalis***	**WL/BLM Sensitive**
Swainson's hawk	***Buteo swainsoni***	**ST**
Prairie falcon	*Falco mexicanus*	WL
American peregrine falcon	*Falco peregrinus anatum*	SFP
Vaux's swift	*Chaetura vauxi*	CSC
Mountain plover	*Charadrius montanus*	CSC/__/BLM Sensitive
Northern harrier	*Circus cyaneus*	CSC
Gilded flicker	*Colaptes chrysoides*	SE
Yellow warbler	***Dendroica petechia sonorana***	**CSC**
California horned lark	*Eremophila alpestris actia*	WL
Yellow-breasted chat	*Icteria virens*	CSC

[36] Proposed new addition to the CNPS Inventory

PLANTS		
Common Name	**Scientific Name**	**Status State/Fed/CNPS/BLM/ Global Rank/State Rank**
Loggerhead shrike	***Lanius ludovicianus***	**CSC/BCC**
Gila woodpecker	*Melanerpes uropygialis*	SE
Black-tailed gnatcatcher	***Polioptila melanura***	__/__
Purple martin	*Progne subis*	CSC
Vermilion flycatcher	*Pyrocephalus rubinus*	CSC
Bendire's thrasher	*Toxostoma bendirei*	CSC/__/BLM Sensitive
Crissal thrasher	*Toxostoma crissale*	CSC
Le Conte's thrasher	*Toxostoma lecontei*	WL/BCC/Sensitive
Mammals		
Pallid bat	*Antrozous pallidus*	CSC/__ /BLM Sensitive
Townsend's big-eared bat	*Corynorhinus townsendii*	CSC/__/BLM Sensitive
Burro	*Equus asinus*	__/__
Spotted bat	*Euderma maculatum*	CSC/__/ BLM Sensitive
Western mastiff bat	*Eumops perotis californicus*	CSC/__/ BLM Sensitive
Hoary bat	*Lasiurus cinereus*	__/__
California leaf-nosed bat	*Macrotus californicus*	CSC/__/ BLM Sensitive
Arizona myotis	*Myotis occultus*	CSC
Cave myotis	*Myotis velifer*	CSC/__/ BLM Sensitive
Yuma myotis	*Myotis yumanensis*	__/__/BLM Sensitive
Colorado Valley woodrat	*Neotoma albigula venusta*	__/__
Pocket free-tailed bat	*Nyctinomops femorosaccus*	CSC
Big free-tailed bat	*Nyctinomops macrotis*	CSC
Burro deer *	*Odocoileus hemionus eremicus*	__/__/__
Nelson's bighorn sheep*	*Ovis canadensis nelson*	__/BLM Sensitive
Yuma mountain lion	*Puma concolor browni*	CSC
American badger	***Taxidea taxus***	**CSC**
Desert kit fox	***Vulpes macrotis arsipus***	__/__

* Potential deer or bighorn scat was found during 2009 field surveys, but could not be differentiated to species. Staff concluded that scat was more likely to be deer.

Source: (Exhibit 200; pp.C.2-21 to C.2-24.), (Exhibit 202; Appendix A, pp. A-25 to A-27.)

Status Codes:

Federal FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

BCC: Fish and Wildlife Service: Birds of Conservation Concern: Identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities <www.fws.gov/migratorybirds/reports/BCC2002.pdf>

State CSC = California Species of Special Concern Species of concern to CDFG because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

SE = State listed as endangered

ST = State listed as threatened

WL = State watch list

California Native Plant Society

List 1B = Rare, threatened, or endangered in California and elsewhere

List 2 = Rare, threatened, or endangered in California but more common elsewhere

List 3 = Plants which need more information

List 4 = Limited distribution – a watch list

0.1 = Seriously threatened in California (high degree/immediacy of threat)

0.2 = Fairly threatened in California (moderate degree/immediacy of threat)

0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)

Bureau of Land Management

BLM Sensitive = Species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. BLM Sensitive species also include all Federal Candidate species and Federal Delisted species which were so designated within the last 5 years and CNPS List 1B plant species that occur on BLM lands. http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.43545.File.dat/6840.pdf.

Global Rank/State Rank

Global rank (G-rank) is a reflection of the overall condition of an element throughout its global range. Subspecies are denoted by a T-Rank; multiple rankings indicate a range of values

G1 or S1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals

G2 or S2 = 6-20 EOs OR 1,000-3,000 individuals

G3 or S3 = 21-100 EOs OR 3,000-10,000 individuals

G4 or S4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5 or S5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

State rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank. An H-rank indicates that all sites are historical

.1 = very threatened

.2 = threatened

.3 = no current threats known

The Revised Staff Assessment provides descriptions of the special-status floral and faunal species observed within the Project Study Area, including ranges, observed locations, quantified population data, and physical characteristics. (Exhibit 200; pp. C.2-24 to C.2-52.)

3. Direct/Indirect Impacts and Mitigation

The evidence indicates that the proposed Project would result in significant direct and indirect impacts to biological resources. Specifically, these impacts would encompass several native habitats and associated floral and faunal species (including several with sensitive or special-status designations), as well as waters of the state. Direct impacts are those resulting directly from project activities (e.g., excavation and grading), and occur at the same time and location as those activities. Indirect impacts are also caused by a project, but can occur later in time and/or at more distant locations, while still resulting from project activities. The potential impacts discussed in this analysis are those most likely to be associated with construction and operation of the Project. Due to the slow recovery rates of plant communities in desert ecosystems, Project-related impacts are considered temporary only if there is evidence to indicate that pre-disturbance levels of biomass, cover, density, community structure, and soil characteristics could be achieved within five years. (Exhibit 200; p. C.2-53.)

A summary of direct and indirect impacts associated with the proposed Project is provided in **Table 3**, followed by discussions of impacts to Waters of the State and special-status species. A separate discussion of cumulative impacts is provided below under Item 4.

Biological Resources Table 3
Summary of Impacts and Mitigation

Biological Resource	Impact/Mitigation
Sonoran Creosote Bush Scrub & Associated Wildlife	**Direct Impacts**: Permanent loss of 6365 acres and fragmentation of adjacent wildlife habitat and native plant communities. **Indirect Impacts**: Disturbance (noise, lights, dust) to surrounding plant and animal communities; spread of non-native invasive weeds; changes in drainage patterns downslope of Project; erosion and sedimentation of disturbed soils. **Mitigation**: Off-site habitat acquisition and enhancement (**BIO-12**); implement impact avoidance and minimization measures (**BIO-8)** and weed control plan (**BIO-14**).
Stabilized and Partially Stabilized Dunes	**Direct impacts**: Permanent loss of 103 acres for construction of Colorado River Substation/ gen-tie line connection area (45

Biological Resource	Impact/Mitigation
	acres) and associated gen-tie line and access roads (58 acres)*; potential accidental direct impacts to adjacent preserved habitat during construction and operation. **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; fragmentation and degradation of remaining habitat. **Mitigation**: Implement **BIO-20**, Sand Dune Community Impact Mitigation.
Waters of the State/ Sensitive Plant Communities Source: June revised BRTR Tables 4, 5, 17	**Direct Impacts**: Permanent loss of hydrological, geomorphic, and biological functions and values of 593 acres of State waters, including: • 213 acres desert dry wash woodland • 371 acres of vegetated ephemeral streams (creosote bush-big galleta grass association • 9 acres of unvegetated ephemeral dry wash **Indirect Impacts**: Loss of hydrological connectivity downstream of the Project, including: • 138 acres desert dry wash woodland • 45 acres of vegetated ephemeral swales (creosote bush-big galleta grass association • 0.33 acres of unvegetated ephemeral wash Other indirect impacts include head-cutting on drainages upslope and erosion/sedimentation downslope. **Mitigation**: Acquisition and enhancement of 1,384 acres of ephemeral desert washes, implementation of avoidance and minimization measures to protect state waters (**BIO-22**); implement weed plan (**BIO-14**).
Desert Tortoise	**Direct Impacts**: Potential take of individuals during operation and construction; permanent loss of 6,958 acres of low to moderate desert tortoise habitat and fragmentation of surrounding habitat. **Indirect Impacts**: Increased risk of predation from ravens, coyotes, feral dogs; disturbance from increased noise and lighting; introduction and spread of weeds; increased road kill hazard. **Mitigation**: Implement avoidance and minimization measures (**BIO-6** through **BIO-11**) and acquire off-site desert tortoise habitat and implement enhancement measures (**BIO-12**).
Mojave Fringe-Toed Lizard	**Direct impacts**: Mortality to individuals during construction of Transmission line and substation; permanent loss of 58 acres* of fringe-toed lizard habitat (dune habitat) for construction associated with gen-tie line construction; potential accidental direct impacts to adjacent preserved habitat during construction and operation. **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; fragmentation and degradation of remaining habitat; increased road kill hazard from

Biological Resource	Impact/Mitigation
	construction and operations traffic; harm from accidental spraying/drift of herbicides and dust suppression chemicals. **Mitigation**: Implement **BIO-20**, Sand dune/Mojave fringe-toed lizard mitigation.
Western Burrowing Owl	**Direct Impacts**: Permanent loss of breeding and foraging habitat; potential loss of eggs and young; degradation and fragmentation of remaining adjacent habitat from edge effects; disturbance of nesting and foraging activities for nesting pairs near the plant site and linear facilities (1 active western burrowing owl burrow and habitat for 1 individual detected in Project Disturbance Area during 2009 and 2010 burrowing owl surveys; during 2009 vegetation surveys, an additional burrowing owl was observed within the BRSA). **Indirect Impacts**: increased road kill hazard from operations traffic and collision with mirrors; increased predation from ravens; disturbance of nesting activities from operations. **Mitigation:** Implement burrowing owl impact avoidance and mitigation measures (**BIO 18**).
Golden Eagle	**Direct/Indirect Impact**: Loss of foraging habitat; No active golden eagle nests were detected within 10 miles of the Project boundaries during protocol surveys conducted in 2010.
Special-Status Birds & Migratory Birds	**Direct Impacts**: Permanent loss of breeding and foraging habitat, including loss of 6365 acres of Sonoran creosote bush scrub and 213 acres of desert dry wash scrub; potential loss of eggs and young; disturbance of nesting and foraging activities for populations on and near the plant site and linear facilities; degradation and fragmentation of remaining adjacent habitat from edge effects; hazards from evaporation ponds. **Indirect Impacts**: increased road kill hazard from operations traffic and collision with mirrors; increased predation from ravens; disturbance from operations. **Mitigation**: Implement impact avoidance and minimization measures (**BIO-6** through **BIO-8**); Avian Protection Plan (**BIO-15**); pre-construction nest surveys (**BIO-16**); off-site habitat acquisition and enhancement (**BIO-12**); netting for evaporation ponds (**BIO-25**).
Desert Kit Fox & American Badger	**Direct Impacts**: Permanent loss of 7020 acres of occupied habitat; fragmentation and degradation of remaining habitat; loss of foraging grounds, crushing or entombing of animals during construction; increased risk of road kill hazard from construction traffic. **Indirect Impacts**: Disturbance from increased noise and lighting; introduction and spread of weeds; increased risk of road kill from operations traffic. **Mitigation:** Implementation of avoidance and minimization measures (**BIO-17**); off-site habitat acquisition and enhancement (**BIO-12**).

Biological Resource	Impact/Mitigation
Nelson's Bighorn Sheep	**Direct Impact**: Loss of spring foraging habitat **Indirect Impact**: Potential future impairment to connectivity. **Mitigation:** Creation of water source in McCoy Mountains, or off-site habitat acquisition (**BIO-21**).
Couch's spadefoot toad	**Direct Impacts:** loss of breeding and upland habitat; mortality of individuals; disturbance to breeding ponds. **Indirect Impacts:** reduced flow to breeding areas; increased flow to upland habitat; construction noise could trigger emergence when conditions are not favorable. **Mitigation**: Conduct surveys and implement impact avoidance and minimization measures, avoidance and protection of breeding habitat **BIO-27**.
Special Wildlife Management Areas	**Desert Wildlife Management Areas**: None **Areas of Critical Environmental Concern**: None **Wildlife Habitat Management Areas**: None **Desert Tortoise Critical Habitat**: None **Mitigation**: None proposed.
Las Animas colubrina	**Direct Impacts**: Permanent loss of 55 plants within the Disturbance Area (141 plants in buffer area on drainage upslope of Project); possible additional loss of plants from construction of perimeter channel and bank stabilization on drainages upslope; accidental impacts to plants adjacent to construction. **Indirect impacts**: Head-cutting (erosion) of channels upslope containing additional plants; introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; population fragmentation; impacts to pollinators and gene flow; risk of fire. **Mitigation:** Implement weed management plan (**BIO-14**); Best Management Practices (**BIO-8**); special-status plant compensatory mitigation and impact avoidance and minimization measures (**BIO-19**).
Harwood's milk-vetch	**Direct Impacts**: Harwood's milk-vetch was found throughout the eastern plant site disturbance area (total of 637 in the disturbance area, 2281 in the buffer), linear facilities route, proposed secondary access route, and along Black Rock Road; potential accidental direct impacts during construction and operation. **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils, potential disruption of sand transport systems that maintain habitat below the Project; alteration of drainage patterns; herbicide drift; disruption of photosynthesis and other metabolic processes from dust. **Mitigation**: Implement weed management plan (**BIO-14**); Best Management Practices (**BIO-8**); special-status plant compensatory mitigation and impact avoidance and minimization measures (**BIO-19**).
Harwood's woollystar	**Direct Impacts**: Harwood's woollystar were found throughout the eastern gen-tie line route and substation site (total of 13 in the disturbance area, 1287 in the buffer); potential accidental direct impacts during construction and operation.

Biological Resource	Impact/Mitigation
	Indirect impacts: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; potential disruption of sand transport systems that maintain habitat below the Project; alteration of drainage patterns; herbicide drift; disruption of photosynthesis and other metabolic processes from dust. **Mitigation**: Implement weed management plan (**BIO-14**); Best Management Practices (**BIO-8**); special-status plant impact avoidance and minimization measures (**BIO 19**).

Southern California Edison will need to construct a 65-acre substation and gen-tie connection area in order for the BSPP and other power plants proposed in the region to interconnect to the electrical grid. Staff has analyzed the potential impacts resulting from construction of the substation and related facilities. These impacts of the Colorado Substation/gen-tie connection area, which are considered indirect impacts of the proposed Project, as well as recommended mitigation that would reduce the substation/connection area impacts to less than significant, are included in the analysis. Because Southern California Edison would construct the substation/connection area and undertake mitigation for related biological resource impacts, however, mitigation calculations do not include acreages from the substation/connection area facilities. The California Public Utilities Commission, not the Energy Commission, has jurisdiction and responsibility over Southern California Edison facilities. Construction and operation of the substation/connection area can and should include mitigation to reduce related impacts to less than significant levels. Source: (Exs 60;200, pp.C.2-53 to C.2-57; 202, Biological Resources p. 10 and Appendix A, pp. A-22 to A-31; 7/15/10 RT, 31:21 - 56:12.)

Waters of the State

Grading within the Project Disturbance Area and related ephemeral drainages would directly impact approximately 593 acres of State jurisdictional waters, and would eliminate the associated functions and values. Approximately 133 acres of State waters associated with desert washes located downstream from the Project area would be indirectly impacted as a result of changes to upstream hydrology. Specifically, the evidence indicates that downslope vegetation in these washes would receive lower or higher volumes and velocities of water than current conditions, which could significantly alter the related hydrology and wash-dependent vegetation. Other potential indirect effects include erosion and resulting root exposure leading to the eventual death of vegetation in downslope areas, and head-cutting and erosion in upstream washes. Additional discussion

of the hydrological conditions and related implications of the proposed Project is provided in the **SOIL AND WATER RESOURCES** section of this Decision.

Based on the above discussion, the evidence indicates that direct Project impacts to approximately 593 acres, and indirect impacts to as much as 133 acres, of State jurisdictional waters would be significant. Proposed mitigation includes the acquisition and management of 1,384 acres of State waters (or other applicable acreage based on the area of State waters impacted by the final Project footprint), as outlined in Condition of Certification **BIO-22**. The evidence indicates that implementation of Condition of Certification **BIO-22** would reduce Project impacts to state waters to less than significant levels. (Exhibit 200; pp. C.2-57 to C.2-59.)

As previously described, no site-specific information is available regarding the presence of Waters of the State in the planned substation site/gen-tie connection area. Accordingly, field delineations would be required to determine the presence of State Waters, with such investigations (and related mitigation, if applicable) to be implemented as part of the separate substation/gen-tie connection area environmental review. (Exhibit 202; Appendix A, pp. A-23 and A-28 to A-29.)

Special-status and Sensitive Wildlife Species

Desert Tortoise

Direct Impacts

Potential direct impacts to the desert tortoise from the proposed Project include: (1) the permanent loss of 6,958 acres of occupied habitat; (2) fragmentation/disturbance of adjacent habitat; (3) mortality to individuals during Project clearing, grading and trenching, as well as from vehicle/equipment use/access; (4) illegal collection or vandalism; (5) disruption of behavior during construction and operation of facilities; (6) disturbance by noise or vibration; (7) encounters with worker's or visitor's pets; and (8) effects from relocation/translocation efforts, such as injury or death from improper capture or handling techniques, as well as inherent risks and uncertainties in moving desert tortoises. (Exs 60; 200, pp. C.2-60 to C.2-66; 202. Biological Resources p. 10.)
A number of measures have been identified to address potential direct impacts to the desert tortoise, including Conditions of Certification **BIO-1** through **BIO-12**. Proposed Conditions of Certification **BIO-1** through **BIO-8** are general measures

that would benefit all biological resources, including the desert tortoise and associated habitat areas. Specifically, Conditions of Certification **BIO-1** through **BIO-5** require qualified biologists, with authority to implement mitigation measures necessary to prevent impacts to biological resources, to be on site during all construction activities. Condition of Certification **BIO-6** requires the development and implementation of a Worker Environmental Awareness Program to train all workers to avoid impacts to sensitive species and their habitats. Condition of Certification **BIO-7** requires the Project owner to prepare and implement a Biological Resources Mitigation Implementation and Monitoring Plan that incorporates the mitigation and compliance measures required by local, state, and federal LORS regarding biological resources. Condition of Certification **BIO-8** describes Best Management Practices requirements and other impact avoidance and minimization measures. Conditions of Certification **BIO-9** through **BIO-12** are specific to the desert tortoise, with **BIO-9** involving the installation of security and desert tortoise exclusionary fencing around the entire Project Disturbance Area (including access roads). **BIO-10** involves the development and implementation of a desert tortoise relocation/translocation plan to move tortoises currently within the Project Disturbance Area to identified relocation or translocation sites. **BIO-11** requires verification that all desert tortoise impact avoidance, minimization, and compensation measures have been implemented. **BIO-12** requires the acquisition and preservation of 6,958 acres of desert tortoise habitat within the Colorado Desert Recovery Unit, to provide a 1:1 replacement ratio for areas directly impacted by the proposed Project. Condition of Certification **BIO-27** provides a potential option to satisfy the requirements of Condition of Certification **BIO-12**, through provision of appropriate funding to the Renewable Energy Action Team (REAT) in lieu of direct property acquisition by the Project owner. In addition, Conditions of Certification **BIO-16** and **BIO-18** provide related benefits to the desert tortoise by mandating that surveys related to avian species be conducted separately from tortoise surveys.

Indirect Impacts

Potential indirect impacts to the desert tortoise include: (1) increased predation from ravens, coyotes, feral/pet dogs and/or other predators; (2) increased mortality from operational vehicle traffic; and (3) impacts from the spread of noxious weeds. Specifically, Project construction and operation activities could attract tortoise predators due to the presence of water and food sources such as trash and road kill. Additionally, the presence of worker or visitor pets could result in tortoise injury or mortality, particularly if allowed off-leash. The increase of traffic on local roadways from Project-related activities would generate the

potential for associated tortoise injury or mortality. Finally, the Project-related spread of noxious weeds could reduce the quality of tortoise habitat (e.g., by replacing native plants that provide tortoise forage), increase the danger of wildfires, restrict tortoise movements, and/or produce toxic effects in tortoises if consumed. These potential impacts would be addressed through the previously noted Conditions of Certification **BIO-6** and **BIO-8**, as well as **BIO-13 and BIO-14**. Specifically, **BIO-13** requires the implementation of a Raven Monitoring and Control Plan in conformance with applicable federal guidelines, while **BIO-14** entails implementing an approved Weed Management Plan.

The evidence indicates that implementation of the listed Conditions of Certification would reduce all identified direct and indirect Project impacts to the desert tortoise to less than significant levels. (Exhibit 200; pp. C.2-60 to C.2-68.)

Mojave Fringe-toed Lizard

The only habitat for Mojave fringe-toed lizard in the Project Disturbance Area is the 123 acres of stabilized and partially stabilized sand dune habitat south of I-10 at the proposed substation site and along the proposed transmission line corridor. During October 2009 protocol desert tortoise surveys, 57 Mojave fringe-toed lizards were observed; 15 of these were found within the proposed substation footprint.

Direct Impacts

Direct impacts to the Mojave fringe-toed lizard during construction of the transmission line, substation, and associated access road would result from a permanent loss of 123 acres of occupied habitat, accidental disturbance to protected habitat adjacent to the Project site, and mortality from vehicle strikes.

Indirect Impacts

Indirect impacts include the introduction and spread of invasive plants, erosion and sedimentation of disturbed soils, fragmentation and degradation of remaining habitat, increased road kill hazard from operations traffic, harm from accidental spraying or drift of herbicides and dust suppression chemicals, and an increase in access for avian predators (such as loggerhead shrikes) due to new perching structures. These impacts would be addressed through the previously described Conditions of Certification **BIO-1** through **BIO-8**, as well as **BIO-20**. Specifically, **BIO-20** requires the acquisition, improvement and long-term management of

stabilized or partially stabilized desert dune habitat at a 3:1 ratio for Project-related impacts to 58 acres of this habitat (or the area of dune habitat impacted by the final Project footprint). The evidence indicates that implementation of the noted measures would reduce identified potential Project-related direct and indirect impacts to the Mojave fringe-toed lizard to less than significant levels. (Exhibit 200; p. C.2-69.)

Couch's Spadefoot Toad

Direct Impacts

Direct effects to Couch's spadefoot toads could include the loss of breeding habitat and direct mortality during grading or construction. Disturbance to breeding ponds, including to new ponds incidentally created during construction activities, could also impact this species. In addition, construction, maintenance, and operation traffic could result in direct mortality on Project area roads, particularly Black Rock Road, where three ponds encompassing potential breeding habitat are located.

Indirect Impacts

Indirect impacts could result from hydrology changes that reduce flow to breeding areas. In addition, construction noise could trigger emergence when conditions are not favorable. These potential impacts would be addressed through the previously described Conditions of Certification **BIO-1** through **BIO-8**, as well as **BIO-26**. Specifically, **BIO-26** requires the development and implementation of a Couch's Spadefoot Toad Protection and Mitigation Plan, which requires avoiding impacts to all spadefoot toad breeding habitat, or construction of replacement habitat if impacts are unavoidable. The evidence indicates that implementation of the noted measures would reduce Project impacts to Couch's spadefoot toad to less than significant levels.

Western Burrowing Owl

Direct Impacts

Potential direct impacts to burrowing owls include the loss of nest sites, eggs, and/or young; the permanent loss of breeding and foraging habitat; and disturbance of nesting and foraging activities for burrowing owl pairs within the site or surrounding areas.

Indirect Impacts

Indirect impacts to burrowing owls during construction and operation can include increased road kill hazards, modifications to foraging and breeding activities, and loss of prey items and food sources due to a decreased number of fossorial (burrowing or digging) mammals. These impacts would be addressed through the previously described Conditions of Certification **BIO-1** through **BIO-8**, as well as **BIO-18**. Specifically, **BIO-18** requires the Applicant to prepare and implement a Burrowing Owl Mitigation Plan that would include a description of suitable burrowing owl relocation/translocation sites, provide guidelines for creation or enhancement of at least two natural or artificial burrows per relocated owl, provide detailed methods and guidance for passive relocation of burrowing owls, and describe proposed maintenance monitoring, reporting, and management of the relocated burrowing owls. **BIO-18** also requires acquisition and enhancement of a minimum of 39 acres of off-site suitable nesting and foraging burrowing owl habitat to mitigate for displacement of at least two owls. The evidence indicates that implementation of the noted measures would reduce Project impacts to burrowing owls to less than significant levels. (Exhibit 200; pp. C.2-70 to C.2-72.)

Golden Eagle

Indirect Impacts

Potential Project-related impacts to golden eagles would be associated the loss of foraging habitat, as well as construction activities that could potentially injure or disturb golden eagles if nests were established sufficiently close to Project boundaries to be affected by the sights and sounds of construction. While potential construction impacts are considered unlikely because suitable nesting areas (i.e., cliff ledges, rocky outcrops, or large trees) do not occur within one mile of the proposed Project area, such effects could occur if active golden eagle nests were established within 10 miles of the Project boundaries. The identified potential impacts to golden eagles would be addressed through implementation of the previously described Conditions of Certification **BIO-1** through **BIO-8** and **BIO-12** (which requires habitat acquisition and preservation), as well as **BIO-24**. Specifically, **BIO-24** requires that, during construction, golden eagle nest surveys be conducted in accordance with applicable guidelines to verify the status of golden eagle nesting territories within 10 miles of the Project boundaries. If active nests are detected, **BIO-24** provides monitoring guidelines, performance standards, and adaptive management measures to avoid adverse impacts to

golden eagles from Project construction. The evidence indicates that implementation of the noted measures would reduce potential impacts of Project construction on nesting golden eagles to less than significant levels. (Exhibit 200; pp. C.2-72 and C.2-73, (Exhibit 202; Biological Resources, pp. 1 and 2.))

Migratory/Special-status Bird Species

Direct Impacts

Project-related impacts to avian species would include adverse effects to resident breeding birds at the site, including (among other species) loggerhead shrike, California horned lark, and black-tailed gnatcatcher. These species would be directly affected by the loss of 213 acres of desert dry wash woodland, 371 acres of vegetated ephemeral swales, and 6365 acres of Sonoran creosote bush scrub. Additional potential direct effects would include the loss of eggs and young, disturbance of nesting and foraging activities, degradation/fragmentation of adjacent habitat, and mortality associated with Project evaporation ponds (e.g., from the presence of contaminants such as selenium in wastewater). The Project area does not provide breeding habitat for Swainson's hawks, northern harriers, ferruginous hawks, or yellow warblers although these species could be present locally during migration or in the winter. However, Swainson's hawks were observed along the western portion of the proposed secondary access road during 2009/2010 wildlife surveys. (Ex. 202 p. 3.) Project impacts to Sonoran creosote bush scrub and desert dry wash woodland would contribute to the loss of foraging habitat, cover, and roost sites for these species on their migratory or wintering grounds, but would not contribute to loss of breeding habitat.

Indirect Impacts

Potential indirect impacts to all resident and migratory bird species would include construction and operation noise (which could affect breeding/nesting activities, refer to the **NOISE and VIBRATION** section of this Decision for additional information), nocturnal lighting/collisions, electrocution hazards (i.e., from transmission facilities), glare from solar mirrors, and collisions with "invisible" structures such as guy wires, and/or as a result of reflective glare or light refraction/reflection.

Several Conditions of Certification would address identified potential direct and indirect impacts to migratory/special-status bird species, including: (1) the previously described **BIO-1** through **BIO-8**, **BIO-12**, and **BIO-22**; (2) **BIO-15**,

which requires the implementation of an approved Avian Protection Plan; (3) **BIO-16**, which requires appropriate pre-construction nest surveys; (4) **BIO-25**, which requires installation of netting over the proposed evaporation ponds; and (5) **VIS-3** and **VIS-4**, which address effects related to lighting and glare (refer to the **VISUAL RESOURCES** section of this Decision for additional information). The evidence indicates that implementation of the noted measures would reduce potential Project-related direct and indirect impacts to migratory/special-status bird species to less than significant levels. (Exhibit 200; pp. C.2-73 and C.2-74, and pp. C.2-76 to C.2-81, (Exhibit 202; Biological Resources, p. 3.).)

American Badger and Desert Kit Fox

Direct Impacts

Potential direct impacts to the American badger and desert kit fox from the proposed Project would include the loss of 6,958 acres of occupied habitat, fragmentation and degradation of adjacent habitat, loss of foraging grounds, crushing or entombing of animal in dens, and increased risk of mortality from vehicular activity on local roadways.

Indirect Impacts

Potential indirect impacts to these species include noise- and lighting-related disturbance, and the spread of noxious weeds. These potential impacts would be addressed through proposed Conditions of Certification, including the previously described **BIO-12** and **BIO-22,** as well as **BIO-17**. Specifically, **BIO-17** requires that a qualified biologist conduct pre-construction surveys for badger and kit fox dens concurrent with desert tortoise surveys (including areas within 250 feet of all Project facilities, utility corridors, and access roads). The evidence indicates that implementation of the noted measures would reduce potential Project-related direct and indirect impacts to American badgers and desert kit foxes to less than significant levels. (Exhibit 200; pp. C.2-74 and C.2-75, (Exhibit 202; Biological Resources, p. 3.).)

Nelson's Bighorn Sheep

Direct and Indirect Impacts

The evidence shows that potential direct impacts to bighorn sheep from the proposed Project include the loss of spring foraging habitat, while indirect impacts would involve loss of habitat connectivity. Applicant's and Staff's

witnesses were in disagreement about the importance of this habitat to the sheep, but all appeared to agree that the proposed Project would result in the loss of potential habitat. (7/15/10 RT 31:16 to 55:13.) We find that this loss of potential foraging habitat and connectivity is a significant impact that must be mitigated.

The proposed Project is sited at the base of the McCoy Mountains. The one-mile buffer zone around the project site is partially within a bighorn sheep WHMA. There is no evidence in the record about any specific current plans to re-introduce this species. However, the evidence does show that the proposed Project could significantly contribute to the loss of foraging habitat associated with any potential future efforts to re-introduce bighorn sheep into the McCoy Mountains. If bighorn sheep were re-established there, the Blythe Project would occupy spring foraging habitat. The Little Maria Mountains may potentially be occupied by bighorn sheep. The McCoy Mountains, just west of the Project, are still considered unoccupied (extirpated); however, this does not preclude occupancy, and if the linkage between the ranges is lost or disrupted by solar development north of the Project, it could preclude successful re-introduction into the McCoy Mountains. (Exhibit 200, pp. C.2-120 and C.2-121; 7/15/10 RT, 31:21 - 56:12.)

These potential impacts would be addressed through proposed Condition of Certification **BIO-21**, which would require the creation of a new water source in the McCoy Mountains or require the Applicant to purchase compensation lands. The artificial water source would attract bighorn sheep and expand foraging opportunities in the lower elevations of the mountains to replace spring foraging habitat lost to Project facilities. The water source would also serve to attract bighorn during seasonal movements and keep them in the mountainous portion of the wildlife corridor. The evidence indicates that implementation of **BIO-21** would reduce potential Project-related direct and indirect impacts to bighorn sheep to less than significant levels. (Exhibit 200; pp. C.2-75 and C.2-76.)

Special-status Plant Species

Direct and Indirect Impacts

Based on spring 2009 and 2010 surveys of the Project disturbance area (including the proposed substation site), the evidence indicates that construction of the Project would result in significant direct and indirect impacts to the following three special-status plant species, Harwood's woollystar (also

sometimes referred to as Harwood's eriastrum or phlox), Harwood's milk-vetch, and Las Animas colubrine (refer to **Table 2** for scientific nomenclature and listing status). Direct impacts would consist of the permanent loss of individual plants during Project construction and operation, while indirect impacts would be associated with effects such as drainage alteration/erosion, habitat fragmentation, spread of noxious weeds, herbicide drift and dust. The evidence further concludes that potential impacts to four other special-status plant species observed during Project surveys, desert unicorn plant, ribbed cryptantha, winged cryptantha, and Utah vining milkweed, would be less than significant.

Potentially significant impacts to special-status plants could be missed unless additional late season surveys are conducted. Late-season plants regarded as having a moderate to high potential for occurrence in the Project area (including the proposed substation site) include Abram's spurge, flat-seeded spurge and lobed ground cherry. Several additional late-season species were identified with potential to occur, although their bloom seasons overlap the spring survey window and it is expected that they could have been detected during a spring survey, if present. Despite this condition, summer-fall surveys could potentially encounter additional special-status species, including glandular ditaxis, California ditaxis, jack-ass clover, and Palmer's jack-ass clover. The evidence also suggests that, based on the under-surveyed and poorly-understood nature of the region, unanticipated finds are likely, including Arizona species not currently known to occur in California. (Exhibit 200; pp. C.2-82 to C.2-85.)

The identified potential direct and indirect impacts to special-status plant species would be addressed through proposed Conditions of Certification, including the previously described **BIO-1** to **BIO-8**, **BIO-14**, **BIO-20** and **BIO-22,** as well as **BIO-19**. Specifically, **BIO-19** (Special-Status Plant Mitigation) includes a requirement to conduct late-season surveys in summer-fall 2010 to ensure that any plants missed during the spring surveys would be detected and any impacts mitigated. Triggers and performance standards for mitigation of impacts are also included to ensure that impacts to any special-status plants found during the late season surveys are appropriately addressed. The evidence indicates that implementation of the noted measures would reduce potential Project-related direct and indirect impacts to special-status plant species to less than significant levels. (Exhibit 200; pp. C.2-82 to C.2-100.)

Cacti, Yucca and Native Trees

Direct and Indirect Impacts

The 2009 and 2010 surveys also included an inventory of native cacti, succulents and trees that are not designated as special-status or rare species, but are regulated to prevent unlawful harvesting. Several species of non-listed cactus and native desert trees were observed within the study area including California barrel cactus (*Ferocactus cylindraceus* var. *cylindraceus*), cottontop cactus, common fishhook cactus (*Mammillaria tetrancistra*), beavertail cactus (*Opuntia basilaris*), silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), catclaw acacia (*Acacia gregii*), blue palo verde (*Cercidium floridium* ssp. *floridium*), ironwood (*Olneya tesota*), mesquite (*Prosopis glandulosa*), smoketree (*Psorothamnus spinosum*), and ocotillo (*Fouquieria splendens* ssp. *splendens*). Potential Project-related impacts to these (and other applicable) non-listed plant species would be addressed through Condition of Certification **BIO-23**, which requires the implementation of a Revegetation Plan involving topsoil and native plant salvage to aid in the revegetation of temporarily disturbed areas following Project construction. The evidence indicates that implementation of the noted measures would reduce potential Project-related direct and indirect impacts to non-special-status cactus, succulent and tree species to less than significant levels. (Exhibit 200; pp. C.2-218 to C.2-222.)

Project Closure and Decommissioning

Potential impacts to biological resources from Project closure and decommissioning involve residual disturbance of developed areas and altered hydrologic conditions, as well as similar impacts from vehicle/equipment access and employees as noted for Project construction. While a Draft Conceptual Decommissioning Plan has been prepared by the Project Applicant, Staff has determined that additional information will be required to meet applicable LORS (including 43 CFR 3809 and related BLM policies). Accordingly, Condition of Certification **BIO-23** is included to address potential concerns related to Project closure and decommissioning. Specifically, this Condition requires the Applicant to prepare a Decommissioning and Reclamation Plan and cost estimate that meets all applicable LORS. The evidence indicates that implementation of the noted measure would reduce potential impacts from Project closure and decommissioning to less than significant levels. (Exhibit 200; pp. C.2-218 to C.2-222.)

4. Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (14 Cal. Code Regs., § 15065[A] [3].) The discussion of cumulative impacts should be guided by standards of practicality and reasonableness. (14 Cal. Code Regs., 14, § 15130[b].)

The following assessment of cumulative impacts is based primarily on a regional, quantitative (Geographical Information System (GIS)-based) evaluation of past, present and future foreseeable projects (including the proposed Project) within the geographic scope of the BLM's Northern and Eastern Colorado Desert Coordinated Management Plan (NECO). The NECO planning area is primarily in the Sonoran Desert region, but includes smaller portions of the adjacent southern Mojave Desert. Because NECO data used for the cumulative analysis is regional in scope and incorporates different methodologies than Project site investigations (e.g., aerial photo interpretation versus field surveys), acreages identified for cumulative impacts differ from those identified for the Project-specific evaluations. For certain resources, a different geographic scope (i.e., other than NECO) was warranted, such as the use of watershed boundaries to analyze cumulative effects to desert washes. Additionally, a qualitative approach was used for certain impact assessments, such as habitat fragmentation, as these effects are not readily subject to direct measurement from GIS data. (Exhibit 200; pp. C.2-109 to C.2-113.)

It should also be noted that, for a number of resources, the combined residual effects of cumulative project impacts (i.e., after mitigation) could be considerable. Such residual cumulative effects can only be addressed through coordinated multi-agency efforts aimed at regional actions, such as preserving and enhancing large/intact expanses of habitat and related linkages, and minimizing indirect effects including fragmentation and the spread of invasive weeds. Within the context of the cumulative projects (including the proposed Project), this assessment is particularly applicable to the desert tortoise, golden eagle, Mojave fringe-toed lizard, Harwood's milk-vetch, Harwood's woollystar and several natural communities.

A number of past, present and future foreseeable projects (cumulative projects) were identified for the assessment of potential cumulative impacts, including the

proposed BSPP Project. The cumulative projects are listed in Staff's **Table 9** of the RSA, Ex. 200, pp. C.2-114 to C.2-115. A summary of potential cumulative impacts to biological resources is provided below.

Waters of the State

Implementation of the proposed Project would contribute to significant cumulative impacts to waters of the State, with approximately 18 percent of all such stream reaches to be impacted by the cumulative projects (including 2.7 percent from the proposed Project). The proposed Project would implement appropriate measures to address potential impacts to waters of the State, including Condition of Certification **BIO-22** (acquisition of desert washes within or adjacent to the Palo Verde watershed); **BIO-7** (monitoring and reporting requirements); and **BIO-8** (avoidance and minimization measures). Staff has concluded that with implementation of these measures the Project's contribution to cumulative impacts to waters of the State in the Palo Verde watershed is not cumulatively considerable. (Exhibit 200; pp. C.2-115 to .2-117.)

Special-Status and Sensitive Wildlife Species

Desert Tortoise

The proposed Project would contribute impacts of approximately 6,958 acres to low and moderate quality desert tortoise habitat, representing between 0.05 and 6.1 percent of impacts to associated habitat quality levels from the cumulative projects (Exhibit 200; p. C.2-119, Biological Resources **Table 12**.) These impacts would involve the loss of habitat and individuals, as well as effects to connectivity between established desert tortoise populations and management areas. A number of measures were identified to address Project-related impacts to desert tortoise, including Conditions of Certification **BIO-12** (acquisition of compensation lands), **BIO-22** (acquisition and permanent protection of drainages and desert washes), **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), **BIO-9** through **BIO-11** (desert tortoise clearance surveys and relocation techniques), and **BIO-13** (Raven Monitoring and Control Plan). The evidence indicates that, with the incorporation of mitigation measures, the Project's contribution to desert tortoise habitat loss impacts would not be cumulatively considerable.

Mojave Fringe-toed Lizard

The proposed Project would contribute to the cumulative loss of Mojave fringe-toed lizard habitat, through impacts to 123 acres of stabilized and partially stabilized dune habitat (including 65 acres associated with the proposed substation site/gen-tie connection area which, as previously discussed, would be evaluated and mitigated as a separate project). A number of measures were identified to address Project-related impacts to Mojave fringe-toed lizard habitat, including Conditions of Certification **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), and **BIO-20** (habitat acquisition, improvement and management). The evidence indicates that, with the incorporation of these mitigation measures, the Project's contribution to Mojave fringe-toed lizard habitat loss impacts would not be cumulatively considerable. (Exhibit 200; pp. C.2-122 to C.2-124.)

Couch's Spadefoot Toad

The proposed Project would contribute impacts of approximately 5,952 acres to Couch's spadefoot toad habitat, representing 5.3 percent of habitat impacts from the cumulative projects (Exhibit 200; p. C.2-123 and C.2-124, Biological Resources **Table 14**.) A number of measures were identified to address Project-related impacts to Couch's spadefoot toad habitat, including Conditions of Certification **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), and **BIO-26** (breeding pond avoidance). The evidence indicates that, with the incorporation of these mitigation measures, the Project's contribution to Couch's spadefoot toad habitat loss impacts would not be cumulatively considerable. (Exhibit 200; pp. C.2-130 and C.2-131.)

Western Burrowing Owl

The proposed Project would impact approximately 5,952 acres of burrowing owl habitat, representing 1.9 percent of habitat impacts from the cumulative projects (Exhibit 200; p. C.2-123, Biological Resources Table 14.) A number of measures were identified to address Project-related impacts to burrowing owl habitat, including Conditions of Certification **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), **BIO-12** (acquisition of 6,958 acres of desert tortoise habitat), **BIO-22** (acquisition of 1,384 acres of ephemeral washes), and **BIO-18** (burrowing owl avoidance/minimization measures). The evidence indicates that, with the

incorporation of these mitigation measures, the Project's contribution to burrowing owl habitat loss impacts would not be cumulatively considerable. (Exhibit 200; pp. C.2-128 and C.2-129.)

Golden Eagle

The proposed Project would impact approximately 5,988 acres of golden eagle foraging habitat within the NECO area (and 5,952 acres within a 140-mile radius of the Project site), representing between 0.2 and 66.1 percent of impacts to varied habitats from the cumulative projects (Exhibit 200; pp. C.2-126 and C.2-127, Biological Resources **Table 15**.) A number of measures were identified to address Project-related impacts to golden eagle foraging habitat, including Conditions of Certification **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), **BIO-12** (acquisition of 6,958 acres of desert tortoise habitat), and **BIO-24** (golden eagle nest monitoring). The evidence indicates that, with the incorporation of these mitigation measures, the Project's contribution to golden eagle foraging habitat impacts would not be cumulatively considerable. (Exhibit 200; pp. C.2-124 to C.2-127.)

Le Conte's Thrasher

The proposed Project would impact approximately 5,952 acres of Le Conte's thrasher habitat, representing 1.9 percent of habitat impacts from the cumulative projects (Exhibit 200; p. C.2-123, Biological Resources Table 14.) Similar effects could also occur to other special-status bird species considered vulnerable, including black-throated sparrow, Costa's hummingbird, and black-tailed gnatcatcher. A number of measures were identified that would address Project-related impacts to Le Conte's thrasher habitat, including Conditions of Certification **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), **BIO-12** (acquisition of 6,958 acres of desert tortoise habitat), **BIO-22** (acquisition of 1,384 acres of desert washes), and **BIO-16** (pre-construction nesting bird surveys). The evidence indicates that, with the incorporation of these mitigation measures, the Project's contribution to Le Conte's thrasher habitat impacts would not be cumulatively considerable. (Exhibit 200; pp. C.2-129 and C.2-130.)

American Badger and Desert Kit Fox

The proposed Project would impact approximately 5,952 acres of American badger and desert kit fox habitat, representing 1.9 percent of habitat impacts from the cumulative projects (Exhibit 200; p. C.2-123, Biological Resources **Table 14**.) A number of measures were identified to address Project-related impacts to American badger and desert kit fox habitat, including Conditions of Certification **BIO-1** through **BIO-7** (Project monitoring, reporting and worker training), **BIO-12** (acquisition of 6,958 acres of desert tortoise habitat), **BIO-22** (acquisition of 1,384 acres of desert washes), and **BIO-17** (badger/kit fox avoidance and minimization measures). The evidence indicates that, with the incorporation of these mitigation measures, the Project's contribution to American badger and desert kit fox habitat impacts would not be cumulatively considerable. (Exhibit 200; pp. C.2-127 and C.2-128.)

Nelson's Bighorn Sheep

The distribution and extent of the NECO designated bighorn sheep Wildlife Habitat Management Areas (WHMAs) and connectivity corridors, overlaid with past and foreseeable future projects within the NECO planning area, are quantified in Staff's **Biological Resources Table 13** .(Ex. 200, p. C.2-122) and illustrated in Staff's **Biological Resources Figure 7**. (Ex. 200, Appendix B.)

Potential impacts to bighorn sheep from the cumulative projects primarily affect connectivity corridors between sheep populations and management areas, with the resultant potential to restrict gene flow between populations and preclude re-establishment of bighorn sheep in areas of suitable habitat. The one-mile buffer zone around the project site is partially within a bighorn sheep WHMA. There is no evidence in the record about any specific current plans to re-introduce this species. However, the evidence does show that the proposed Project could significantly contribute to the cumulative loss of foraging habitat associated with any potential future efforts to re-introduce bighorn sheep into the McCoy Mountains. The proposed Project is sited at the base of the McCoy Mountains; another large solar project is proposed at the base of the Little Maria Mountains north of the Project. If bighorn sheep were re-established here, the Blythe Project would occupy spring foraging habitat. The Little Maria Mountains may potentially be occupied by bighorn sheep. The McCoy Mountains, just west of the Project, are still considered unoccupied (extirpated); however, this does not preclude occupancy, and if the linkage between the ranges is lost or disrupted by solar development north of the Project, it could preclude successful re-

introduction into the McCoy Mountains. (Exhibit 200, pp. C.2-120 and C.2-121; 7/15/10 RT, 31:21 - 56:12.)

Burro Deer

Burro deer is a subspecies of mule deer found in the Colorado Desert of Southern California, primarily along the Colorado River and in Desert Wash Woodland communities. While Project-related impacts to burro deer habitat loss would be limited to approximately 102 acres (0.2 percent of the cumulative total), the Project would incrementally contribute to a significant cumulative effect. (Exhibit 200; p. C.2-123 and C.2-124, Biological Resources **Table 14**.) The proposed Project would incorporate a number of measures that would address impacts to burro deer habitat, including Conditions of Certification **BIO-22** (acquisition of 1,320 acres of ephemeral washes), **BIO-12** (acquisition of Sonoran creosote bush scrub habitat), and **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization). Based on the inclusion of these measures, the evidence indicates that the Project's contribution to burro deer habitat impacts would not be cumulatively considerable. (Exhibit 200; p. C.2-130.)

Bats

The Project site supports foraging and roosting habitat for several special-status bat species. Bat roosts are known to occur in the Project area, and bats likely utilize habitats throughout the study area for foraging (although foraging most commonly occurs when water is present in desert washes and insects are more abundant). Staff considers the proposed Project to be a substantial contributor to the cumulative loss of habitat for special-status bat species within the NECO area. Proposed Conditions of Certification **BIO-12** (acquisition of 6,958 acres of desert tortoise habitat), and **BIO-22** (acquisition of 1,384 acres of desert washes), would offset the cumulative loss of habitat for these species. (Exhibit 200; p. C.2-74.)

Wildlife Movement and Connectivity

Connectivity refers to the degree to which organisms can move among habitat patches and populations. Individuals must be able to move between patches to meet their resource needs, while populations must be connected to allow for dispersion, gene flow, and re-colonization. The Project site does not overlap with designated wildlife of habitat management areas, and has not been proposed for

designation as wilderness. In addition, the eastern portion of the Project site was included in the Solar Programmatic EIS recommendations for the Riverside East Solar Energy Study Areas (SESA) by the Wilderness Society and Natural Resources Defense Council, because of its low potential for significant resource conflicts relative to other sites.

Impacts to wildlife movement and connectivity from the cumulative projects are likely to remain significant after mitigation, even after project-specific mitigation to less than significant levels is considered. The significant cumulative impact is due to the residual effects of fragmentation, impaired connectivity, degradation of the function and values of remaining habitat from predators, invasive plants, fire, and disease. With the incorporation of proposed mitigation measures, however, the Project's contribution to the cumulative effect to wildlife movement and connectivity would not be cumulatively considerable. Specifically, these measures include Conditions of Certification **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), **BIO-12** (acquisition of 6,958 acres of desert tortoise habitat), **BIO-22** (acquisition of 1,384 acres of desert washes), and **BIO-24 (**golden eagle nest monitoring). (Exhibit 200; pp. C.2-131 to C.2-133.)

Natural Communities

The proposed Project would incrementally contribute to the cumulative loss of Sonoran creosote bush scrub (5,850 acres, or 2.6 percent) and desert dry wash woodland (101 acres, or 0.2 percent), with dune habitat discussed separately below. Staff has concluded that, with implementation of proposed mitigation measures, Project-related impacts to natural communities would not be cumulatively considerable. Specifically, these measures include Conditions of Certification **BIO-12** (acquisition of 6,958 acres of desert tortoise habitat), **BIO-22** (acquisition of 1,384 acres of desert washes), **BIO-14** (weed management), and **BIO-7** (BMPs, impact avoidance and mitigation monitoring/reporting). (Exhibit 200; pp. C.2-133 to C. 2-136.)

Active Dune Habitat in Chuckwalla Valley

Dunes provide habitat for a variety of special-status plants and animals, including Mojave fringe-toed lizard and Harwood's milk-vetch in the Project vicinity. The proposed Project would contribute 123 acres (or 0.73 percent) to the cumulative loss of dune habitat, with the Project impacts limited to the planned substation/gen-tine connection area and related gen-tie line. As previously

described, the 65-acre substation/gen-tie connection would be constructed (and mitigated) as a separate project, but is included in this analysis. Staff has concluded that the construction of a 65-acre substation/gen-tie connection facility within the active wind transport corridor, and the reasonably anticipated downwind loss of habitat from obstruction of the dune-maintaining processes, is a significant effect. Based on this conclusion, a mitigation ratio of 3:1 (consistent with the NECO plan) has been recommended for the substation/gen-tie connection facility footprint and the downwind effect. Staff has also concluded that substation/gen-tie connection area construction will render the habitat vulnerable to infestation by Sahara mustard, and recommends that a weed management plan be prepared, consistent with that described in the Project Condition of Certification **BIO-14**.

Based on the above discussion, the proposed Project would incrementally contribute to a significant cumulative effect on active dune habitat, although the Project's direct contribution (58 acres) would not be cumulatively considerable with implementation of Condition of Certification **BIO-20 (**acquisition of dune habitat and Mojave fringe-toed lizard mitigation). Other recommended mitigation measures that would minimize indirect effects of the Project on dunes and dune-dependent wildlife and plants include **BIO-13** (raven management plan), **BIO-14** (weed management plan), **BIO-6** (mitigation monitoring), and **BIO-8** (impact avoidance/minimization and revegetation). (Exhibit 200; pp. C.2-136 and C.2-137.)

Special-Status Plants

The analysis of cumulative impacts to special-status plants is focused on three species: las animas colubrine, Harwood's milk-vetch and Harwood's woollystar. Based on the associated evidence, Staff has provided the following impact conclusion for these three species:

- The Project would incrementally contribute to significant cumulative impacts on las animas colubrine and its associated habitat. With implementation of proposed mitigation measures, Project-related impacts to this species would not be cumulatively considerable. Specifically, these measures include Conditions of Certification **BIO-1** through **BIO-8** (Project monitoring, reporting and worker training; and impact avoidance and minimization), **BIO-14** (weed management plan), and **BIO-19** (special-status plant avoidance/minimization/compensation, and late-season surveys). (Exhibit 200; p. C.2-138.)

- The Project-related contribution to impacts on Harwood's milk-vetch and Harwood's woollystar and related habitats would be cumulatively considerable. With implementation of Conditions of Certification **BIO-19** (special-status plant avoidance/minimization/compensation and late-season surveys), **BIO-14** (weed management plan), **BIO-20 (**acquisition of dune habitat and Mojave fringe-toed lizard mitigation), and **BIO-22** (acquisition of 1,384 acres of desert washes), Projects impacts would be reduced to less-than-significant levels. (Exhibit 200; pp. C.2-138 to C.2-140.)

5. Public Comment

A number of public and agency comments were received on the Biological Resources section of the proposed Project Staff Assessment/Draft Environmental Impact Statement (SA/DEIS), and on the November 23, 2009 Notice of Intent to Prepare an Environmental Impact Statement. Pertinent information from these comments has been incorporated into the Revised Staff Assessment, including appropriate impact discussions and related mitigation measures. These comments, and Staff responses, are set forth in the RSA, Ex. 200; pp. C.2-144 to C.2-162.

FINDINGS OF FACT

Based on the evidence, we find the following:

1. The total area of disturbance with the proposed 9,400-acre Project ROW is approximately 7,025 acres, including 7,082 acres from activities related to the Project site, and 123 acres within associated linear facility corridors and a planned substation/gen-tie connection area.
2. The 7,025-acre Project disturbance area consists almost entirely of native habitats, including 213 acres of desert dry wash woodland, 371 acres of vegetated ephemeral swales (creosote bush-big galleta grass association), 9 acres of unvegetated ephemeral dry wash, 6365 acres of Sonoran creosote bush scrub, and 58 acres of stabilized and partially stabilized desert dunes.
3. Electricity produced by the BSSP Project will be distributed via a new, approximately 7-mile long, 500-kV gen-tie line extending south and southwest to a planned substation/gen-tie connection area that will be constructed by Southern California Edison as a separate project.

4. Twenty special status species were detected during Project surveys, including eight plant species, three reptile species (including the desert tortoise), six bird species, and three mammal species.
5. Construction and operation of the proposed BSSP Project would result in potentially significant direct and/or indirect impacts to Biological Resources, including waters of the State, sensitive plant communities, special-status plant and wildlife species, and other native vegetation.
6. Conditions of Certification **BIO-22** and **BIO-14** would reduce Project-related direct and indirect impacts to waters of the State and associated sensitive plant communities below a level of significance.
7. Conditions of Certification **BIO-1** through **BIO-14**, and (potentially) **BIO-27**, would reduce Project-related direct and indirect impacts to the desert tortoise below a level of significance.
8. Conditions of Certification **BIO-1** through **BIO-8**, and **BIO-20**, would reduce Project-related direct and indirect impacts to the Mojave fringe-toed lizard below a level of significance.
9. Conditions of Certification **BIO-1** through **BIO-8**, and **BIO-26**, would reduce Project-related direct and indirect impacts to Couch's spadefoot toad below a level of significance.
10. Conditions of Certification **BIO-1** through **BIO-8**, and **BIO-18**, would reduce Project-related direct and indirect impacts to the western burrowing owl below a level of significance.
11. Conditions of Certification **BIO-1** through **BIO-8**, **BIO-12** and **BIO-24**, would reduce Project-related direct and indirect impacts to the golden eagle below a level of significance.
12. Conditions of Certification **BIO-1** through **BIO-8**, **BIO-12**, **BIO-15**, **BIO-16**, **BIO-22**, and **BIO-25**, as well as **VIS-3** and **VIS-4**, would reduce Project-related direct and indirect impacts to migratory/special-status bird species below a level of significance.
13. Conditions of Certification **BIO-12**, **BIO-17**, and **BIO-22** would reduce Project-related direct and indirect impacts to the American badger and desert kit fox below a level of significance.
14. Condition of Certification **BIO-21** would reduce Project-related direct and indirect impacts to Nelson's bighorn sheep below a level of significance.
15. Conditions of Certification **BIO-1** through **BIO-8**, **BIO-14**, **BIO-19**, **BIO-20** and **BIO-22** would reduce Project-related direct and indirect impacts to special-status plant species below a level of significance.
16. While it is anticipated that Conditions of Certification such as **BIO-1** through **BIO-8**, **BIO-14**, **BIO-19**, **BIO-20** and **BIO-22** would reduce direct and indirect impacts to special-status plant species from the planned 65-acre SCE substation/gen-tie connection area below a level of significance, site-specific

investigation of the substation/connection area sites would be required to verify this conclusion. We expect that appropriate environmental review of this project, which is under the jurisdiction of the California Public Utilities Commission, will be conducted by or on behalf of SCE, which will be responsible for implementing appropriate measures to mitigate any project-related impacts.

17. Condition of Certification **BIO-23** would reduce Project-related direct and indirect impacts to native (but non-special-status) cacti, succulents and trees below a level of significance.

18. Condition of Certification **BIO-23** would reduce direct and indirect impacts related to Project decommissioning below a level of significance.

19. Condition of Certification BIO-27 gives the project owner the option to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision.

20. Condition of Certification BIO-28 gives the project owner the option to satisfy its mitigation obligations in three phases.

21. Construction and operation of the proposed BSSP Project, in concert with identified cumulative projects, would result in and/or contribute to potentially significant cumulative impacts to Biological Resources, including waters of the State, sensitive plant communities, special-status plant and wildlife species, wildlife movement/habitat connectivity and natural communities. With implementation of the Project-specific Conditions of Certification, the generation of/contribution to related potential cumulative impacts from the BSSP Project would not be cumulatively considerable.

CONCLUSIONS OF LAW

1. With implementation of the Conditions of Certification listed below, the BSPP Project will comply with all applicable LORS, and will not result in any unmitigated and significant direct, indirect or cumulative adverse impacts related to Biological Resources.

2. With implementation of mitigation measures as appropriate, construction and operation of the planned substation and associated gen-tie connection area project would be expected to comply with all applicable LORS, and would not be expected to result in any significant adverse direct, indirect, or cumulative impacts to biological resources.

3. By paying an in lieu fee pursuant to Condition of Certification **BIO-27** Applicant will meet the mitigation obligations we have established in this Decision.

CONDITIONS OF CERTIFICATION

Designated Biologist Selection and Qualifications[37]

BIO-1 The Project owner shall assign at least one Designated Biologist to the Project. The Project owner shall submit the resume of the proposed Designated Biologist(s), with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval in consultation with CDFG and USFWS.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. Have at least one year of field experience with biological resources found in or near the Project area;
4. Meet the current USFWS Authorized Biologist qualifications criteria (www.fws.gov/ventura/speciesinfo/protocols_guidelines), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS; and
5. Possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.
6. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, in consultation with CDFG and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.

Verification: No fewer than 45 days prior to the start of site mobilization or construction-related ground disturbance, the Project Owner shall submit the names of the Designated Biologist (s) along with completed USFWS Desert Tortoise Authorized Biologist Request Form

[37] USFWS <www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt> designates biologists who are approved to handle tortoises as "Authorized Biologists." Such biologists have demonstrated to the USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately, and have received USFWS approval. Authorized Biologists are responsible for the implementation of all desert tortoise measures for which a project is approved and are permitted to then approve specific monitors to handle tortoises, at their discretion. The California Department of Fish and Game (CDFG) must also approve such biologists, potentially including individual approvals for Biological Monitors approved by the Authorized Biologist. **Designated Biologists are the equivalent of Authorized Biologists.** Only Designated Biologists and certain Biological Monitors who have been approved by the Designated Biologist would be allowed to handle desert tortoises.

(www.fws.gov/ventura/speciesinfo/protocols_guidelines) to the USFWS and the CPM for review and final approval.

No construction-related ground disturbance, grading, boring, or trenching shall commence until an approved Designated Biologist is available to be on site.
If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the Project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM and for consideration.

Designated Biologist Duties

BIO-2 The Project owner shall ensure that the Designated Biologist performs the activities described below during any site mobilization activities, construction-related ground disturbance, grading, boring or trenching activities. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the Project owner and the CPM. The Designated Biologist Duties shall include the following:

1. Advise the Project owner's Construction and Operation Managers on the implementation of the biological resources conditions of certification;
2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the Project owner;
3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;
4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way;
6. Notify the Project owner and the CPM of any non-compliance with any biological resources condition of certification;
7. Respond directly to inquiries of the CPM regarding biological resource issues;
8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be

submitted in the Monthly Compliance Report and the Annual Compliance Report;

9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines>; and
10. Maintain the ability to be in regular, direct communication with representatives of CDFG, USFWS, and the CPM, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Data Base.
11.

Verification: The Designated Biologist shall provide copies of all written reports and summaries that document biological resources compliance activities in the Monthly Compliance Reports submitted to the CPM. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During Project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his or her duties cease, as approved by the CPM.

Biological Monitor SELECTION AND Qualifications

BIO-3 The Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the CPM. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS designated Desert Tortoise Monitor (USFWS 2008).

Biological Monitor(s) training by the Designated Biologist shall include familiarity with the conditions of certification, BRMIMP, WEAP, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines>.

Verification: The Project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any site mobilization or construction-related ground disturbance, grading, boring and trenching. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) has been trained including the date when training was completed. If additional biological monitors are needed during construction the specified information shall be submitted to the CPM and for approval at least 10 days prior to their first day of monitoring activities.

BIOLOGICAL MONITOR Duties

BIO-4 The Biological Monitors shall assist the Designated Biologist in conducting surveys and in monitoring of site mobilization activities,

construction-related ground disturbance, grading, boring or trenching. The Designated Biologist shall remain the contact for the Project owner and the CPM.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM and copies of all written reports and summaries that document biological resources compliance activities, including those conducted by Biological Monitors. If actions may affect biological resources during operation a Biological Monitor, under the supervision of the Designated Biologist, shall be available for monitoring and reporting. During Project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties cease, as approved by the CPM.

Designated Biologist and Biological Monitor Authority

BIO-5 The Project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification. The Designated Biologist shall have the authority to immediately stop any activity that is not in compliance with these conditions and/or order any reasonable measure to avoid take of an individual of a listed species. If required by the Designated Biologist and Biological Monitor(s) the Project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, boring, trenching and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the Project owner and the construction/operation manager when to resume activities; and
3. Notify the CPM and if there is a halt of any activities and advise them of any corrective actions that have been taken or would be instituted as a result of the work stoppage.

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

Verification: The Project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The Project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the Project owner, a determination of success or failure would be made by the CPM within five working days after receipt of notice that corrective action is completed, or the Project owner would

be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

Worker Environmental Awareness Program (WEAP)

BIO-6 The Project owner shall develop and implement a Blythe Project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the CPM. The WEAP shall be administered to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site preconstruction, construction, operation, and closure. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes, reptiles, or other wildlife shall be harmed;
3. Place special emphasis on desert tortoise, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
4. Include a discussion of fire prevention measures to be implemented by workers during Project activities; request workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;
5. Describe the temporary and permanent habitat protection measures to be implemented at the Project site;
6. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
7. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

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

Verification: No fewer than 30 days prior to construction-related ground disturbance the Project owner shall provide to the CPM a copy of the final WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The Project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to construction-related ground disturbance activities the Project owner shall submit two copies of the BLM- and CPM-approved final WEAP.

Training acknowledgement forms signed during construction shall be kept on file by the Project owner for at least six months after the start of commercial operation.

Throughout the life of the Project, the WEAP shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the Project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the Project owner and shall be made available to the CPM and upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training.

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

Biological Resources Mitigation Implementation and Monitoring Plan

BIO-7 The Project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), and shall submit two copies of the proposed BRMIMP to the CPM for review and approval. The Project owner shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Desert Tortoise Relocation Translocation Plan, the Raven Management Plan, the Closure, Conceptual Restoration Plan, the Burrowing Owl Mitigation and Monitoring Plan, the Weed Management Plan, and all other biological mitigation and/or monitoring plans associated with the Project.

The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or permanent protection during construction and operation. The BRMIMP shall include complete and detailed descriptions of the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the Project owner;
2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts;

3. All biological resource mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
4. All sensitive biological resources to be impacted, avoided, or mitigated by Project construction, operation, and closure;
5. All required mitigation measures for each sensitive biological resource;
6. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
7. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
8. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
9. All performance standards and remedial measures to be implemented if performance standards are not met;
10. Biological resources-related facility closure measures including a description of funding mechanism(s);
11. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
12. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the Project site, or during Project surveys, to the California Natural Diversity Data Base (CNDDB) per CDFG requirements.
13.

Verification: The Project owner shall submit the final BRMIMP to the CPM at least 30 days prior to start of any preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching. The BRMIMP shall contain all of the required measures included in all biological Conditions of Certification. No construction-related ground disturbance, grading, boring or trenching may occur prior to approval of the final BRMIMP by the CPM.

If any permits have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition within at least 10 days of their receipt by the Project owner. Ten days prior to site and related facilities mobilization the revised BRMIMP shall be resubmitted to the CPM.

To verify that the extent of construction disturbance does not exceed that described in this analysis, the Project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM. The first set of aerial photographs shall reflect site conditions prior to any preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching, and shall be submitted at least 60 days prior to initiation of such activities. The second set of aerial photographs shall be taken subsequent to completion of construction, and shall be submitted to the CPM no later than 90

days after completion of construction. The Project owner shall also provide a final accounting in whole acres of the areas of vegetation communities/cover types present before and after construction.

Any changes to the approved BRMIMP must be approved by the CPM and in consultation with CDFG and USFWS.

Implementation of BRMIMP measures (for example, construction activities that were monitored, species observed) shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the Project's preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching, and which mitigation and monitoring items are still outstanding.

Impact Avoidance AND MINIMIZATION MEASURES

BIO-8 The Project owner shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Limit Disturbance Areas. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special-status species. Parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, Project vehicles and equipment shall be confined to the flagged areas.
2. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.
3. Minimize Traffic Impacts. Vehicular traffic during Project construction and operation shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 25 miles per hour within the

Project area, on maintenance roads for linear facilities, or on access roads to the Project site.

4. Monitor During Construction. In areas that have not been fenced with desert tortoise exclusion fencing and cleared, the Designated Biologist shall be present at the construction site during all Project activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall walk immediately ahead of equipment during brushing and grading activities.
5. Minimize Impacts of Transmission/Pipeline Alignments, Roads, Staging Areas. Staging areas for construction on the plant site shall be within the area that has been fenced with desert tortoise exclusion fencing and cleared. For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) S*uggested Practices for Avian Protection on Power Lines* (APLIC 1994) and *Mitigating Bird Collisions with Power Lines* (APLIC 2004) to reduce the likelihood of large bird electrocutions and collisions.
6. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.
7. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.
8. Minimize Noise Impacts A continuous low-pressure technique shall be used for steam blows, to the extent possible, in order to reduce noise levels in sensitive habitat proximate to the Blythe Project. Loud construction activities (e.g., unsilenced high pressure steam blowing and pile driving, or other) shall be avoided from February 15 to April 15 when it would result in noise levels over 65 dBA in nesting habitat (excluding noise from passing vehicles). Loud construction activities may be permitted from February 15 to April 15 only if:
    a. the Designated Biologist provides documentation (i.e., nesting bird data collected using methods described in BIO-15 and maps depicting location of the nest survey area in relation to noisy construction) to the CPM indicating that no active nests would be subject to 65 dBA noise, OR
    b. the Designated Biologist or Biological Monitor monitors active nests within the range of construction-related noise exceeding 65 dBA. The monitoring shall be conducted in accordance with Nesting Bird Monitoring and Management Plan approved by the

CPM. The Plan shall include adaptive management measures to prevent disturbance to nesting birds from construction related noise. Triggers for adaptive management shall be evidence of Project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Bird Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of disturbance to the nesting bird.

9. Avoid Vehicle Impacts to Desert Tortoise. Parking and storage shall occur within the area enclosed by desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed, it would be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist's direct supervision may remove and relocate the animal to a safe location if temperatures are within the range described in the USFWS' 2009 *Desert Tortoise Field Manual* (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines
10. Avoid Wildlife Pitfalls:
    a. Backfill Trenches. At the end of each work day, the Designated Biologist shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the area fenced with desert tortoise exclusion fencing have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically throughout the day, at the end of each workday and at the beginning of each day by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the individual as described in the Desert Tortoise Relocation/Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.

b. Avoid Entrapment of Desert Tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.

11. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. A Biological Monitor shall patrol these areas to ensure water does not puddle and shall take appropriate action to reduce water application where necessary.
12. Dispose of Road-killed Animals. Road killed animals or other carcasses detected on roads near the Project area shall be picked up immediately and delivered to the Biological Monitor. For special-status species roadkill, the Biological Monitor shall contact CDFG and USFWS within 1 working day of receipt of the carcass for guidance on disposal or storage of the carcass. The Biological Monitor shall report the special-status species record as described in **BIO-11** below.
13. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the Project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.
14. Worker Guidelines. During construction all trash and food-related waste shall be placed in self-closing containers and removed daily from the site. Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons. Vehicular traffic shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit when

traveling on dirt access routes within desert tortoise habitat shall not exceed 25 miles per hour.

15. Implement Erosion Control Measures. Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter "Waters of the State". Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential.
16. Monitor Ground Disturbing Activities Prior to Pre-Construction Site Mobilization. If pre-construction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.
17. Revegetation of Temporarily Disturbed Areas. The Project owner shall prepare and implement a Revegetation Plan to restore all areas subject to temporary disturbance to pre-Project grade and conditions. Temporarily disturbed areas within the Project area include, but are not limited to: all proposed locations for linear facilities, temporary access roads, berms, areas surrounding the drainage diffusers, construction work temporary lay-down areas, and construction equipment staging areas. The Revegetation Plan shall include a description of topsoil salvage and seeding techniques and a monitoring and reporting plan, and the following performance standards by the end of monitoring year 2:
    a. at least 80 percent of the species observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and
    b. relative cover and density of plant species within the temporarily disturbed areas shall equal at least 60 percent.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures would be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

No less than 30 days following the publication of the Energy Commission License Decision or the Record of Decision/ROW Issuance, whichever comes first, the Project owner shall submit to the CPM a final agency-approved Revegetation

Plan that has been reviewed and approved by the CPM. All modifications to the Revegetation Plan shall be made only after approval from the CPM.

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 Revegetation Plan have been completed, a summary of all modifications to mitigation measures made during the Project's construction phase, and which items are still outstanding.

As part of the Annual Compliance Report, each year following construction until the completion of the revegetation monitoring specified in the Revegetation Plan, the Designated Biologist shall provide a report to the CPM that includes: a summary of revegetation activities for the year, a discussion of whether revegetation performance standards for the year were met; and recommendations for revegetation remedial action, if warranted, are planned for the upcoming year.
If loud construction activities are proposed between February 15 to April 15 which would result in noise levels over 65 dBA in nesting habitat, the Project owner shall submit nest survey results (as described in 8a) to the CPM no more than 7 days before initiating such construction. If an active nest is detected within this survey area the Project owner shall submit a Nesting Bird Monitoring and Management Plan to the CPM for review and approval no more than 7 days before initiating noisy construction.

DESERT TORTOISE CLEARANCE SURVEYS AND FENCING

BIO-9 The Project owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling and other procedures shall be consistent with those described in the USFWS' 2009 *Desert Tortoise Field Manual* <http://www.fws.gov/ventura/speciesinfo/protocols_guidelines> or more current guidance provided by CDFG and USFWS. The Project owner shall also implement all terms and conditions described in the Biological Opinion prepared by USFWS. The Project owner shall implement the following measures:

1. Desert Tortoise Exclusion Fence Installation. To avoid impacts to desert tortoises, permanent exclusion fencing shall be installed along the permanent perimeter security fence (boundaries) as phases are constructed. Temporary fencing shall be installed along linear features or any subset of the plant site phasing that does not correspond to permanent perimeter fencing. All fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the desert tortoise exclusionary

fence and utility rights-of-way alignments shall be conducted by the Designated Biologist(s) using techniques outlined in the USFWS' 2009 *Desert Tortoise Field Manual* and may be conducted in any season with USFWS and CDFG approval. Biological Monitors may assist the Designated Biologist under his or her supervision. These fence clearance surveys shall provide 100-percent coverage of all areas to be disturbed and an additional transect along both sides of the fence line. Disturbance associated with desert tortoise exclusionary fence construction shall not exceed 30 feet on either side of the proposed fence alignment. Prior to the surveys the project owner shall provide to the CPM, CDFG and USFWS a figure clearly depicting the limits of construction disturbance for the proposed fence installation. The fence line survey area shall be 90 feet wide centered on the fence alignment. Where construction disturbance for fence line installation can be limited to 15 feet on either side of the fence line, this fence line survey area may be reduced to an area approximately 60 feet wide centered on the fence alignment.. Transects shall be no greater than 15 feet apart. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 *Desert Tortoise Field Manual*. Any desert tortoise located during fence clearance surveys shall be handled by the Designated Biologist(s) in accordance with the USFWS' 2009 *Desert Tortoise Field Manual*.

a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed in any area subject to disturbance prior to the onset of site clearing and grubbing in that area. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.
b. Fence Material and Installation. All desert tortoise exclusionary fencing shall be constructed in accordance with the USFWS' 2009 *Desert Tortoise Field Manual* (Chapter 8 – Desert Tortoise Exclusion Fence).
c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time.
d. Fence Inspections. Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing in the utility corridors, the fencing shall be regularly inspected. If tortoise were moved out of harm's way during fence construction, permanent and

temporary fencing shall be inspected at least two times a day for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and during and within 24 hours following all major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of permanent site fencing shall occur for the life of the Project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.

2. Desert Tortoise Clearance Surveys within the Plant Site. Clearance surveys shall be conducted in accordance with the USFWS' 2009 *Desert Tortoise Field Manual* (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) and shall consist of two surveys covering 100 percent the Project area by walking transects no more than 15-feet apart. If a desert tortoise is located on the second survey, a third survey shall be conducted. Each separate survey shall be walked in a different direction to allow opposing angles of observation. Clearance surveys for non-linear areas of Phase 1A may be conducted outside the active season. Clearance surveys of the remaining portions of the power plant site may only be conducted when tortoises are most active (April through May or September through October). Clearance surveys of linear features may be conducted during anytime of the year. Surveys outside of the active season in areas other than Phase 1A require approval by USFWS and CDFG. Any tortoise located during clearance surveys of the power plant site and linear features shall be relocated and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan:
    a. Burrow Searches. During clearance surveys all desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 *Desert Tortoise Field Manual*. To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined. Tortoises taken from burrows and from elsewhere on the power plant site shall be

relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.

b. Burrow Excavation/Handling. All potential desert tortoise burrows located during clearance surveys would be excavated by hand, tortoises removed, and collapsed or blocked to prevent occupation by desert tortoises. All desert tortoise handling and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, w*ho may be assisted by a Biolo*gical Monitor in accordance with the USFWS' 2009 *Desert Tortoise Field Manual.*

3. Monitoring Following Clearing. Following the desert tortoise clearance and removal from the power plant site and utility corridors, workers and heavy equipment shall be allowed to enter the Project site to perform clearing, grubbing, leveling, and trenching. A Designated Biologist shall monitor clearing and grading activities to find and move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.
4. Reporting. The Designated Biologist shall record the following information for any desert t*ortoises handled: a) the locat*ions (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert tortoise as described in the paragraph below. Desert tortoise moved from within Project areas shall be marked and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of desert tortoise clearance surveys the Designated Biologist shall submit a report toBLM, the CPM, USFWS, and CDFG describing implementation of each of the mitigation measures listed above. The report shall include the desert tortoise survey results, capture and release locations of any relocated desert tortoises, and any other information needed to demonstrate compliance with the measures described above.

DESERT TORTOISE RELOCATION/TRANSLOCATION PLAN

BIO-10 The Project owner shall develop and implement a final Desert Tortoise Relocation/Translocation Plan (Plan) that is consistent with

current USFWS approved guidelines, and meets the approval of the CPM. The Plan shall include guidance specific to each of the three phases of Project construction, as described in **BIO-28** (Phasing), and shall include measures to minimize the potential for repeated translocations of individual desert tortoises. The final Plan shall be based on the draft Desert Tortoise Relocation/Translocation Plan prepared by the Applicant (AECOM 2010t) and shall include all revisions deemed necessary by BLM, USFWS, CDFG and the Energy Commission staff.

Verification: No fewer than 30 days prior to site mobilization the Project owner shall provide the CPM with the final version of a Desert Tortoise Relocation/Translocation Plan that has been reviewed and approved by the CPM in consultation with BLM, USFWS and CDFG. All modifications to the approved Plan shall be made only after approval by the CPM, in consultation with BLM, USFWS and CDFG.

Within 30 days after initiation of relocation and/or translocation activities, the Designated Biologist shall provide to the CPM for review and approval, a written report identifying which items of the Plan have been completed, and a summary of all modifications to measures made during implementation of the Plan.

Desert Tortoise Compliance VERIFICATION

BIO-11 The Project owner shall provide Energy Commission and BLM staff with reasonable access to the Project site and compensation lands under the control of the Project owner and shall otherwise fully cooperate with the Energy Commission's and BLM's efforts to verify the Project owner's compliance with, or the effectiveness of, mitigation measures set forth in the conditions of certification. The Designated Biologist shall do all of the following:

1. Notification. Notify the CPM and at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify the CPM in writing if the Project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification;
2. Monitoring During Grubbing and Grading. Remain onsite daily while vegetation salvage, grubbing, grading and other ground-disturbance construction activities are taking place to avoid or minimize take of listed species, to check for compliance with all impact avoidance and minimization measures, and to check all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.
3. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly compliance report to

the CPM, USFWS and CDFG during construction, as required under **Compliance-6**.

4. Notification of Injured, Dead, or Relocated Listed Species. In the event of a sighting in an active construction area (e.g., with equipment, vehicles, or workers), injury, kill, or relocation of any listed species, the CPM, CDFG, and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:
    a. Injured Desert Tortoise. If a desert tortoise is injured as a result of Project-related activities during construction, the Designated Biologist shall immediately take it to a CDFG-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the Project owner. Following phone notification as required above, the CPM, CDFG, and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, circumstances of the incident, and the name of the facility where the animal was taken.
    b. Desert Tortoise Fatality. If a desert tortoise is killed by Project-related activities during construction or operation, submit a written report with the same information as an injury report. These desert tortoises shall be salvaged according to guidelines described in *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise* (Berry 2001). The Project owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.
5. Stop Work Order. The CPM may issue the Project owner a written stop work order to suspend any activity related to the construction or operation of the Project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. The Project owner shall comply with the stop work order immediately upon receipt thereof.

Verification: No later than 2 days following the above required notification of a sighting, kill, or relocation of a listed species, the Project owner shall deliver to the CPM, CDFG, and USFWS via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of injury,

kill, or relocation of a listed species, identifying who was notified, and explaining when the incidents occurred. In the case of a sighting in an active construction area, the Project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM, CDFG and USFWS.

No later than 45 days after initiation of Project operation the Designated Biologist shall provide the CPM a Final Listed Species Mitigation Report that includes, at a minimum: 1) a copy of the table in the BRMIMP with notes showing when each of the mitigation measures was implemented; 2) all available information about Project-related incidental take of listed species; 3) information about other Project impacts on the listed species; 4) construction dates; 5) an assessment of the effectiveness of conditions of certification in minimizing and compensating for Project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future Projects on the listed species; and 7) any other pertinent information, including the level of take of the listed species associated with the Project.

DESERT TORTOISE COMPENSATORY MITIGATION

BIO-12 To fully mitigate for habitat loss and potential take of desert tortoise, the Project owner shall provide compensatory mitigation at a 1:1 ratio for impacts to 6,958 acres, adjusted to reflect the final Project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the Blythe Project, including all linears, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. To satisfy this condition, the Project owner shall acquire, protect and transfer 1 acre of desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. Condition **BIO-27** may provide the Project owner with another option for satisfying some or all of the requirements in this condition. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as provided below in section 3.i. of this condition.

The timing of the mitigation shall correspond with the timing of the site disturbance activities as stated in BIO-28 (phasing). If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:

1. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition in fee title or in easement shall:

a. be within the Colorado Desert Recovery Unit, with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;
b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;
c. be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
d. be connected to lands with desert tortoise habitat equal to or better quality than the Project Site, ideally with populations that are stable, recovering, or likely to recover;
e. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;
f. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
h. have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFG, BLM and USFWS, agrees in writing to the acceptability of land.

2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM, CDFG, USFWS, and BLM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the CPM and CDFG, in consultation with BLM and the USFWS, shall be required for acquisition of all compensatory mitigation parcels.
3. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM and CDFG, in consultation with BLM and the USFWS, have approved the proposed compensation lands:
    a. Preliminary Report. The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed

compensation land to the CPM and CDFG. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM and CDFG, in consultation with BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.

b. Title/Conveyance. The Project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM and CDFG. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM under terms approved by the CPM and CDFG. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFG in a form approved by CDFG. If an approved non-profit holds a conservation easement, CDFG shall be named a third party beneficiary.

c. Initial Habitat Improvement Fund. The Project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if it meets the approval of CDFG and the CPM. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee.

d. Property Analysis Record. Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.

e. Long-term Maintenance and Management Fund. In accordance with BIO-28 (phasing), the Project owner shall deposit in NFWF's REAT Account a non-wasting capital long-term maintenance and management fee in the amount

determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.

The CPM, in consultation with CDFG, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFG takes fee title to the compensation lands, CDFG shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFG and with CDFG supervision.

f. Interest, Principal, and Pooling of Funds. The Project owner, the CPM and CDFG shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

   i. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFG designed to protect or improve the habitat values of the compensation lands.

   ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFG or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFG takes fee title to the compensation lands, monies received by CDFG pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFG designates NFWF or another entity to manage the long-term maintenance and management fee for CDFG.

   iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFG, or a CPM-and CDFG-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation,

management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFG and CPM.

g. Other expenses. In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFG or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.

h. Mitigation Security. The Project owner shall provide financial assurances in accordance with BIO-28 (phasing) to the CPM and CDFG with copies of the document(s) to BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described in this condition. These funds shall be used solely for implementation of the measures associated with the Project in the event the Project owner fails to comply with the requirements specified in this condition, or shall be returned to the Project owner upon successful compliance with the requirements in this condition. The CPM's or CDFG's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Financial assurance can be provided to the CPM and CDFG in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's and CDFG's approval, in consultation with BLM and the USFWS, of the form of the Security. Security shall be provided in the amounts calculated as follows:

    i. land acquisition costs for compensation land, calculated at $500/acre.
    ii. initial protection and improvement activities on the compensation land, calculated at $330/acre.
    iii. Long term maintenance and management fee, calculated at $1,450 an acre.

    Security required for Phase 1A equals $1,753,320.
    Security required for Phase 1B equals $6,828,600.
    Security required for Phase 2 equals $7,280,040.

The amount of security shall be adjusted for any change in the Project footprints for each phase as described above.

i. The Project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required in section 3.h., above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than $500 an acre, the excess money deposited in the REAT Account shall be returned to the Project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Project owner.

   The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission and CDFG. Such delegation shall be subject to approval by the CPM and CDFG, in consultation with BLM and USFWS, prior to land acquisition, initial protection or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented with 18 months of the Energy Commission's approval.

Verification: If the mitigation actions required under this condition are not completed prior to the start of ground-disturbing activities, the Project owner shall provide the CPM and CDFG with an approved form of Security in accordance with this condition of certification no later than 30 days prior to beginning Project ground-disturbing activities. Actual Security shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities. If Security is provided, the Project owner, or an approved third party, shall complete and provide written verification to the CPM, CDFG, BLM and USFWS of the compensation lands acquisition and transfer within 18 months of the start of Project ground-disturbing activities.

The Project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF or other approved third party by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the Security required in section

3.h. of this condition. Payment of the initial funds for acquisition and initial improvement must be made at least 30 days prior to the start of ground-disturbing activities.

No fewer than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFG, USFWS, and BLM describing the parcels intended for purchase and shall obtain approval from the CPM and CDFG prior to the acquisition.

No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section 3e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.

The Project owner, or an approved third party, shall provide the CPM, CDFG, BLM and USFWS with a management plan for the compensation lands within180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFG, BLM and the USFWS.

Within 90 days after completion of all project related ground disturbance, the Project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction. This shall be the basis for the final number of acres required to be acquired.

RAVEN MANAGEMENT PLAN

BIO-13 The Project owner shall implement a Raven Monitoring and Control Plan that is consistent with the most current USFWS-approved raven management guidelines, and which meets the approval of the CMP, in consultation with BLM, USFWS and CDFG. The draft Common Raven Management Plan submitted by the Applicant (AECOM 10a, Attachment DR-BIO-49) shall provide the basis for the final plan, subject to review, revisions and approval fromBLM, the CPM, CDFG and USFWS. The Common Raven Monitoring and Control Plan shall include but not be limited to a program to monitor raven presence in the Project vicinity, determine if raven numbers are increasing, and to implement raven control measures as needed based on that monitoring. The purpose of the plan is to avoid any Project-related increases in raven numbers during construction, operation, and decommissioning. In addition to monitoring at the Project site, the Plan shall address raven monitoring and control at the new water source proposed in the McCoy Mountains in staff's proposed Condition of Certification **BIO-21.**The Project owner shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below.

The Raven Plan shall:

a. Identify conditions associated with the Project that might provide raven subsidies or attractants;
b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
c. Describe control practices for ravens;
d. Establish thresholds that would trigger implementation of control practices;
e. Address monitoring and nest removal during construction and for the life of the Project, and;
f. Discuss reporting requirements.

USFWS Regional Raven Management Program. The Project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the USFWS Regional Raven Management Program. The one time fee shall be as described in the cost allocation methodology (Exhibit ___, *Renewable Energy Development And Common Raven Predation on the Desert Tortoise – Summary*, dated May 2010; *Cost Allocation Methodology for Implementation of the Regional Raven Management Plan*, dated July 9, 2010) or more current guidance as provided by USFWS or CDFG.

Verification: No less than 10 days prior to start of any Project-related ground disturbance activities, the Project owner shall provideBLM, the CPM, USFWS, and CDFG with the final version of a Common Raven Management Plan. The CPM would determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Raven Management Plan shall be made only with approval of CPM in consultation with BLM, USFWS and CDFG.

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 Raven Monitoring and Control Plan have been completed, a summary of all modifications to mitigation measures made during the Project's construction phase, and which items are still outstanding.

As part of the annual compliance report, each year following construction the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of raven management and control activities for the year; a discussion of whether raven control and management goals for the year were met; and recommendations for raven management activities for the upcoming year.

WEED MANAGEMENT PLAN

BIO-14 The Project owner shall implement a Weed Management Plan that meets the approval of the CPM. The objective of the Weed Management Plan shall be to prevent the introduction of any new

weeds and the spread of existing weeds as a result of Project construction, operation, and decommissioning. The Weed Management Plan shall include at a minimum the following information: specific weed management objectives and measures for each target non-native weed species; baseline conditions; a map of the Weed Management Areas; weed risk assessment and measures to prevent the introduction and spread of weeds; monitoring and surveying methods; and reporting requirements. The draft Weed Management Plan submitted by the Applicant (AECOM 2010a, Attachment DR-BIO-97) shall provide the basis for the final plan, subject to review and revisions from the CPM.

Verification: No less than 10 days prior to start of any Project-related ground disturbance activities, the Project owner shall provide the CPM with the final version of a Weed Management Plan that has been reviewed and approved by BLM, and Energy Commission staff, USFWS, and CDFG. Modifications to the approved Weed Control Plan shall be made only after consultation with the Energy Commission staff, BLM, USFWS, and CDFG.

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 Weed Management Plan have been completed, a summary of all modifications to mitigation measures made during the Project's construction phase, and which items are still outstanding.

As part of the annual compliance report, each year following construction the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of noxious weeds surveys and management activities for the year; a discussion of whether weed management goals for the year were met; and recommendations for weed management activities for the upcoming year.

Avian prOtection plan

BIO-15 The Project owner shall prepare and implement an Avian Protection Plan to monitor the death and injury of birds from collisions with facility features such as transmission lines, reflective mirror-like surfaces and from heat, and bright light from concentrating sunlight. The monitoring data shall be used to inform an adaptive management program that would avoid and minimize Project-related avian impacts. The study design shall be approved by the CPM in consultation with CDFG and USFWS, and shall be incorporated into the Project's BRMIMP and implemented. The Avian Protection Plan shall include detailed specifications on data and carcass collection protocol and a rationale justifying the proposed schedule of carcass searches. The plan shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias.

Verification: No fewer than 30 days prior to commercial operation of any of the power plant units, the Project owner shall submit to the CPM, USFWS, and CDFG a final Avian Protection Plan. Modifications to the Avian Protection Plan shall be made only after approval from the CPM.

For one year following the beginning of power plant operation the Designated Biologist shall submit quarterly reports to the CPM, CDFG, and USFWS describing the dates, durations, and results of monitoring. The quarterly reports shall provide a detailed description of any Project-related bird or wildlife deaths or injuries detected during the monitoring study or at any other time, and describe adaptive management measures implemented to avoid or minimize deaths or injuries. Following the completion of the fourth quarter of monitoring the Designated Biologist shall prepare an Annual Report that summarizes the year's data, analyzes any Project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed. The Annual Report shall be provided to the CPM,, CDFG, and USFWS. Quarterly reporting shall continue until the CPM, in consultation with CDFG and USFWS determine whether more years of monitoring are needed, and whether mitigation and adaptive management measures are necessary.

PRE-CONSTRUCTION NEST SURVEYS

BIO-16 Pre-construction nest surveys shall be conducted if construction activities would occur from February 1 through July 31. The Designated Biologist or Biological Monitor conducting the surveys shall be experienced bird surveyors familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). The goal of the nesting surveys shall be to identify the general location of the nest sites, sufficient to establish a protective buffer zone around the potential nest site, and need not include identification of the precise nest locations. Surveyors performing nest surveys shall not concurrently be conducting desert tortoise surveys. The bird surveyors shall perform surveys in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat areas that could be disturbed by each phase of construction, as described in BIO-28 (Phasing). Surveys shall also include areas within 500 feet of the boundaries of the active construction areas (including linear facilities);
2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys shall be conducted within a 14-day period preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed three weeks, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;
3. If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size

of which is to be determined by the Designated Biologist in consultation with CDFG) and monitoring plan shall be developed. Nest locations shall be mapped and submitted, along with a report stating the survey results, to the CPM; and

4. The Designated Biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed; activities that might, in the opinion of the Designated Biologist, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.

Verification: At least 10 days prior to the start of any Project-related ground disturbance activities, the Project owner shall provide the CPM a letter-report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity and qualifications of the surveyor (s); and a list of species observed. If active or suspected active nests are detected during the survey, the report shall include a map or aerial photo identifying the location of the nest or suspected nest location and shall depict the boundaries of the no-disturbance buffer zone around the nest(s) that would be avoided during Project construction.

AMERICAN BADGER AND DESERT KIT FOX IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-17 To avoid direct impacts to American badgers and desert kit fox, pre-construction surveys shall be conducted for these species concurrent with the desert tortoise surveys. Surveys shall be conducted as described below:

1. Biological Monitors shall perform pre-construction surveys for badger and kit fox dens in the Project disturbance area, including a 20 foot swath beyond the disturbed area, utility corridors, and access roads. If dens are detected each den shall be classified as inactive, potentially active, or definitely active.
2. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox.
3. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance.
4. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand.
5. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den

is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. BLM approval may be required prior to release of badgers on public lands.

Verification: The Project owner shall submit a report to the CPM and CDFG within 30 days of completion of badger and kit fox surveys. The report shall describe survey methods, results, impact avoidance and minimization measures implemented, and the results of those measures.

Burrowing Owl Impact Avoidance, Minimization, AND COMPENSATION Measures

BIO-18 The Project owner shall implement the following measures to avoid, minimize and offset impacts to burrowing owls:

1. Pre-Construction Surveys. The Designated Biologist or Biological Monitor shall conduct pre-construction surveys for burrowing owls no more than 30 days prior to initiation of construction activities. Surveys shall be focused exclusively on detecting burrowing owls, and shall be conducted from two hours before sunset to one hour after or from one hour before to two hours after sunrise. The survey area shall include the Project Disturbance Area and surrounding 500 foot survey buffer for each phase of construction in accordance with BIO-28 (phasing).
2. Implement Burrowing Owl Mitigation Plan. The Project owner shall implement measures described in the final Burrowing Owl Mitigation Plan. The final Burrowing Owl Mitigation Plan shall be approved by the CPM, in consultation with BLM, USFWS and CDFG, and shall::
    a. identify suitable sites within 1 mile of the Project Disturbance Areas for creation or enhancement of burrows prior to passive relocation efforts;
    b. provide guidelines for creation or enhancement of at least two natural or artificial burrows per relocated owl;
    c. provide detailed methods and guidance for passive relocation of burrowing owls occurring within the Project Disturbance Area; and
    d. describe monitoring and management of the passive relocation effort, including the created or enhanced burrow location and the project area where WBO were relocated from and provide a reporting plan.
3. Implement Avoidance Measures. If an active burrowing owl burrow is detected within 500 feet from the Project Disturbance Area the following avoidance and minimization measures shall be implemented:
    a. Establish Non-Disturbance Buffer. Fencing shall be installed at a 250-foot radius from the occupied burrow to create a

non-disturbance buffer around the burrow. The non-disturbance buffer and fence line may be reduced to 160 feet if all Project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1st through January 31st). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer.

b. Monitoring: If construction activities would occur within 500 feet of the occupied burrow during the nesting season (February 1 – August 31st) the Designated Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance.

4. Acquire 39 Acres of Burrowing Owl Habitat. The Project owner shall acquire, in fee or in easement 39 acres of land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term management of these compensation lands. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with BLM, CDFG and USFWS prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat.

   a. Criteria for Burrowing Owl Mitigation Lands. The terms and conditions of this acquisition or easement shall be as described in **BIO-12** [Desert Tortoise Compensatory Mitigation], with the additional criteria to include: 1) the 39 acres of mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands must either currently support burrowing owls or be no farther than 5 miles from an active burrowing owl nesting territory. The 39 acres of burrowing owl mitigation lands may be included with the desert tortoise mitigation lands ONLY if these two burrowing owl criteria are met. If the 39 acres of burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands, the Project owner shall fulfill the requirements described below in this condition.

   b. Security. If the 39 acres of burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands, the Project owner or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this

acquisition (see the verification section at the end of this condition). Alternatively, financial assurance can be provided by the Project owner to the CPM and CDFG, according to the measures outlined in **BIO-12**. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") prior to initiating ground-disturbing Project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with BLM, CDFG and the USFWS, to ensure funding. The final amount due will be determined by an updated appraisal and PAR analysis conducted as described in **BIO-12**.

Verification: If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, at least 10 days prior to the start of any Project-related site disturbance activities the Designated Biologist shall provide to the CPM documentation indicating that non-disturbance buffer fencing has been installed. The Project owner shall report monthly to BLM, the CPM, CDFG and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures. Within 30 days after completion of construction the Project owner shall provide to the CDFG and CPM a report identifying how mitigation measures described in the plan have been completed.

If pre-construction surveys detect burrowing owls within the Project Disturbance Area and relocation of the owls is required, the Project owner shall do the following:

a. Within 30 days of completion of the burrowing owl pre-construction surveys, submit toBLM, the CPM, CDFG and USFWS a Burrowing Owl Mitigation Plan.
b. No less than 90 days prior to acquisition of the burrowing owl compensation lands, the Project owner, or an approved third party, shall submit a formal acquisition proposal to the CPM, BLM, CDFG, and USFWS describing the parcels intended for purchase. At the same time the Project owner shall submit a PAR or PAR-like analysis for the parcels for review and approval by the CPM, BLM, CDFG and USFWS.
c. Within 90 days of the land or easement purchase, as determined by the date on the title, the Project owner shall provide the CPM with a management plan for review and approval, in consultation with BLM, CDFG and USFWS, for the compensation lands and associated funds.
d. No later than 30 days prior to beginning Project ground-disturbing activities, the Project owner shall provide a form of Security in accordance with this condition of certification. No later than 7 days

prior to beginning Project ground-disturbing activities, the Project owner shall provide written verification of the actual Security.

e. No later than 18 months from a initiation of construction the Project owner shall provide written verification toBLM, the CPM, and CDFG that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

f. As part of the Annual Compliance Report, each year following construction for a period of five years, the Designated Biologist shall provide a report to the CPM, BLM, USFWS and CDFG that describes the results of monitoring and management of the burrowing owl relocation area.

SPECIAL-STATUS PLANT impact avoidance, minimization and compensation

BIO-19 This condition contains the following four sections:

- **Section A: Special-Status Plant Impact Avoidance and Minimization Measures** contains the Best Management Practices and other measures designed to avoid accidental impacts to plants occurring outside of the Project Disturbance Area and within 100 feet of the Project Disturbance Area during construction, operation, and closure.
- **Section B: Conduct Late Season Botanical Surveys** describes guidelines for conducting summer-fall 2010 surveys to detect special-status plants that would have been missed during the spring 2010 surveys.
- **Section C: Avoidance Requirements for Special-Status Plants** Detected **in the Summer/Fall 2010 Surveys** outlines the level of avoidance required for plants detected during the summer-fall surveys, based on the species' rarity and status codes.
- **Section D: Off-Site Compensatory Mitigation for Special-Status Plants** describes performance standards for mitigation for a range of options for compensatory mitigation through acquisition, restoration/enhancement, or a combination of acquisition and restoration/enhancement.

"Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the Project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation.

The Project owner shall implement the following measures in Section A, B, C, and D to avoid, minimize, and compensate for impacts to special-status plant species:

Section A: Special-Status Plant Impact Avoidance and Minimization Measures

To protect all special-status plants[38] located outside of the Project Disturbance Area and within 100 feet of the permitted Project Disturbance Area from accidental and indirect impacts during construction, operation, and closure, the Project owner shall implement the following measures:

1. Designated Botanist. An experienced botanist who meets the qualifications described in Section **B-2** below shall oversee compliance with all special-status plant avoidance, minimization, and compensation measures described in this condition throughout construction and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. During operation of the Project, the Designated Biologist shall be responsible for protecting special-status plant occurrences within 100 feet of the Project boundaries.
2. Special-Status Plant Impact Avoidance and Minimization Measures. The Project owner shall incorporate all measures for protecting special-status plants in close proximity to the site into the BRMIMP (**BIO-7**). These measures shall include the following elements:
   a. Site Design Modifications: Incorporate site design modifications to minimize impacts to special-status plants along the Project linears: limiting the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads to preserve the seed bank, and minor adjustments to the alignment of the roads and pipelines within the constraints of the ROW. Design the engineered channel discharge points to maintain the natural surface drainage patterns between the engineered channel and the outlet of the natural washes that flow toward the south and east, downstream of the Project These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.
   b. Establish Environmentally Sensitive Areas (ESAs). Prior to the start of any ground- or vegetation-disturbing activities, the Designated Botanist shall establish ESAs to protect avoided special-status plants that occur outside of the Project Disturbance Areas and within 100 feet of Project Disturbance Areas. This includes plant occurrences identified during the spring 2009-2010 surveys and the late season 2010 surveys. The locations of ESAs shall be clearly depicted on construction

[38] Staff defines special-status plants as described in *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (California Natural Resources Agency, Department of Fish and Game, issued November 24, 2009).

drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall be placed a minimum of 20 feet from the uphill side of the occurrence and 10 feet from the downhill side. Where this is not possible due to construction constraints, other protection measures, such as silt-fencing and sediment controls, may be employed to protect the occurrences. Equipment and vehicle maintenance areas, and wash areas, shall be located 100 feet from the uphill side of any ESAs. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be clearly identified (with signage or by mapping on site plans) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure.

c. Special-Status Plant Worker Environmental Awareness Program (WEAP). The WEAP **(BIO-6)** shall include training components specific to protection of special-status plants as outlined in this condition.
d. Herbicide and Soil Stabilizer Drift Control Measures. **S**pecial-status plant occurrences within 100 feet of the Project Disturbance Area shall be protected from herbicide and soil stabilizer drift. The Weed Control Program (**BIO-14**) shall include measures to avoid chemical drift or residual toxicity to special-status plants consistent with guidelines such as those provided by the Nature Conservancy's *The Global Invasive Species Team*[39] , the U.S. Environmental Protection Agency, and the Pesticide Action Network Database[40].
e. Erosion and Sediment Control Measures. Erosion and sediment control measures shall not inadvertently impact special-status plants (e.g., by using invasive or non-native plants in seed mixes, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under **SOIL&WATER-1**.
f. Avoid Special-Status Plant Occurrences. Areas for spoils, equipment, vehicles, and materials storage areas; parking; equipment and vehicle maintenance areas, and wash areas shall be placed at least 100 feet from any ESAs.

[39] Hillmer, J. & D. Liedtke. 2003. Safe herbicide handling: a guide for land stewards and volunteer stewards. Ohio Chapter, The Nature Conservancy, Dublin, OH. 20 pp. Online: <http://www.invasive.org/gist/products.html.

[40] Pesticide Action Network of North America. Kegley, S.E., Hill, B.R., Orme S., Choi A.H., PAN Pesticide Database, Pesticide Action Network, North America. San Francisco, CA, 2010 <http://www.pesticideinfo.org>

g. Monitoring and Reporting Requirements. The Designated Botanist shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction and decommissioning activities.

Section B: Conduct Late-Season Botanical Surveys

The Project owner shall conduct late-summer/fall botanical surveys for late-season special-status plants prior to start of construction or by the end of 2010, as described below:

1. Survey Timing. Surveys shall be timed to detect: a) summer annuals triggered to germinate by the warm, tropical summer storms (which may occur any time between June and October). Fall-blooming perennials that respond to the cooler, later season storms (typically beginning in September or October) shall only be required if blooms and seeds are necessary for identification or the species are summer-deciduous and require leaves for identification. The surveys shall not be timed to coincide with the statistical peak bloom period of the target species but shall instead be based on plant phenology and the timing of a significant storm event (i.e., a 10mm or greater rain or multiple storm events of sufficient volume to trigger germination, as measured at or within 1 mile of the Project site). Surveys shall occur at the appropriate time to capture the characteristics necessary to identify the taxon. Construction of Phase 1A as outlined in Condition of Certification **BIO-28** is authorized to commence following a September survey.
2. Surveyor Qualifications and Training. Surveys shall be conducted by a qualified botanist knowledgeable in the complex biology of the local flora, and consistent with CDFG protocols (CDFG 2009). Each surveyor shall be equipped with a GPS unit and record a complete tracklog; these data shall be compiled and submitted along with the Summer-Fall Survey Botanical Report (described below). Prior to the start of surveys, all crew members shall, at a minimum, visit reference sites (where available) and/or review herbarium specimens of all BLM Sensitive plants, CNPS List 1B or 2 (Nature Serve rank S1 and S2) or proposed List 1B or 2 taxa, and any new reported or documented taxa, to obtain a search image. Because the potential for range extensions is unknown, the list of potentially occurring special-status plants shall include all special-status taxa known to occur within the Sonoran Desert region and the eastern portion of the Mojave in California. The list shall also include taxa with bloom seasons that begin in fall and extend into the early spring as many of these are reported to be easier to detect in fall, following the start of the fall rains.

3. Survey Coverage. The survey coverage or intensity shall be in accordance with BLM Survey Protocols (issued July 2009)[41], which specify that intuitive controlled surveys shall only be accomplished by botanists familiar with the habitats and species that may reasonably be expected to occur in the project area.
4. Documenting Occurrences. If a special-status plant is detected, the full extent of the population onsite shall be recorded using GPS in accordance with BLM survey protocols. Additionally, the extent of the population within one mile of Project boundaries shall be assessed at least qualitatively to facilitate an accurate estimation of the proportion of the population affected by the Project. For populations that are very dense or very large, the population size may be estimated by simple sampling techniques. When populations are very extensive or locally abundant, the surveyor must provide some basis for this assertion and roughly map the extent on a topographic map. All but the smallest populations (e.g., a population occupying less than 100 square feet) shall be recorded as area polygons; the smallest populations may be recorded as point features. All GPS-recorded occurrences shall include: the number of plants, phenology, observed threats (e.g., OHV or invasive exotics), and habitat or community type. The map of occurrences submitted with the final botanical report shall be prepared to ensure consistency with definition of an occurrence by CNDDB, i.e., occurrences found within 0.25 miles of another occurrence of the same taxon, and not separated by significant habitat discontinuities, shall be combined into a single 'occurrence'. The Project owner shall also submit the raw GPS shape files and metadata, and completed CNDDB forms for each 'occurrence' (as defined by CNDDB).
5. Reporting. Raw GPS data, metadata, and CNDDB field forms shall be provided to the CPM within two weeks of the completion of each survey. If surveys are split into two or more periods (e.g., a late summer survey and a fall survey), then a summary letter shall be submitted following each survey period.

   The Final Summer-Fall Botanical Survey Report shall be prepared consistent with CDFG guidelines (CDFG 2009), and BLM 2009 guidelines and shall include all of the following components:
   a. the BLM designation, NatureServe Global and State Rank of each species or taxon found (or proposed rank, or CNPS List);
   b. the number or percent of the occurrence that will be directly affected, and indirectly affected by changes in drainage patterns or altered geomorphic processes;

[41] Bureau of Land Management (BLM), California State Office. *Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species*. Issued July 2009.

c. the habitat or plant community that supports the occurrence and the total acres of that habitat or community type that occurs in the Project Disturbance Area;
d. an indication of whether the occurrence has any local or regional significance (e.g., if it exhibits any unusual morphology, occurs at the periphery of its range in California, represents a significant range extension or disjunct occurrence, or occurs in an atypical habitat or substrate);
e. a completed CNDDB field form for every occurrence (occurrences of the same species within one-quarter mile or less of each other combined as one occurrence, consistent with CNDDB methodology), and
f. two maps: one that depicts the raw GPS data (as collected in the field) on a topographic base map with Project features; and a second map that follows the CNDDB protocol for occurrence mapping.

Section C: Avoidance Requirements for Special-Status Plants Detected in the Summer/Fall 2010 Surveys

The Project owner shall apply the following avoidance standards to late blooming special-status plants that might be detected during late summer/fall season surveys. Avoidance and/or the mitigation measures described in Section D below would reduce impacts to these special-status plant species to less than significant levels.

1. Mitigation for CNDDB Rank 1 Plants (Critically Imperiled) - Avoidance Required: If late blooming species with a CNDDB rank of 1 are detected within the Project Disturbance Area the Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). The goal of the Plan shall be to retain at least 75% of the local population of the affected species. Compensatory mitigation, as described in Section D of this condition, and at a mitigation ratio of 3:1, shall be required for the 25% or portion that is not avoided. The Plan shall include, at a minimum, the following components and definitions:
   a. A description of the occurrences of the CNDDB rank 1 species on the Project, ecological characteristics such as micro-habitat requirements, ecosystem processes required for maintenance of the habitat, reproduction and dispersal mechanisms, pollinators, local distribution, a description of the extent of the population off-site, the percentage of the local population affected, and a description of how these occurrences would be impacted by the Project, including direct and indirect effects. The “local population” shall include the number of individuals occurring within the Palo Verde Watershed boundaries. Occurrences shall be considered impacted if they are within the Project footprint, and if they would be affected by Project-related

hydrologic changes or changes to the local sand transport system.

b. A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the Project linears and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g. Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles).
c. A description of the measures that would be implemented to avoid or minimize impacts to occurrences on the solar facility. Avoidance is generally considered not feasible if the species is located within the Permanent Project Disturbance Area (bounded by the permanent tortoise exclusion fence and the drainage channels).
d. If avoidance on the linears, construction laydown areas, and solar facility combined protect less than 75% of the local population of the affected species, the project owner shall implement offsite mitigation that demonstrates that the impacts will not cause a loss of viability for that species. Implementation of the compensatory offsite mitigation must meet the performance standards described in section D of this Condition, and may include land acquisition or implementation of a restoration/enhancement program for the species.
e. "Avoidance" shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence. For all but one of the late blooming plant species with potential to occur, the plant species are annuals that depend on a viable seed bank to maintain population health and persistence. The primary goal of avoidance for these annual species will be protection of the soil integrity and the seed bank that is closely associated with undisturbed soils. Any impacts to the soil structure or surface features will be considered an impact, but measures like temporary mowing or brush removal that does not disturb the soil will not be considered impacts to the population. Isolated 'islands' of protected plants disconnected by the Project from natural fluvial, aeolian (wind), or other processes essential for maintenance of the species, shall not be considered to be protected and shall not be credited as contributing to the 75% avoidance requirement because such isolated populations are not sustainable.

2. Mitigation for CNDDB Rank 2 Plants (Imperiled) –Avoidance on Linears Required: If species with a CNDDB rank of 2 are detected within the Project Disturbance Area, the Project owner shall prepare and implement a Special-Status Plant Mitigation Plan

(Plan) that describes measures to achieve complete avoidance of occurrences on the Project linears and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g. Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles). The Project owner shall provide compensatory mitigation, at a ratio of 2:1, as described below in Section D for impacts to Rank 2 plants that could not be avoided. The content of the Plan and definitions shall be as described above in subsection C.1.

3. Mitigation for CNDDB Rank 3 Plants – No On-Site Avoidance Required Unless Local or Regional Significance: If species with a CNDDB rank of 3 are detected within the Project Disturbance Area, no onsite avoidance or compensatory mitigation shall be required unless the occurrence has local or regional significance, in which case the plant occurrence shall be treated as a CNDDB rank 2 plant species. A plant occurrence would be considered to have local or regional significance if:
   a. It occurs at the outermost periphery of its range in California;
   b. It occurs in an atypical habitat, region, or elevation for the taxon that suggests that the occurrence may have genetic significance (e.g., that may increase its ability to survive future threats), or;
   c. It exhibits any unusual morphology that is not clearly attributable to environmental factors that may indicate a potential new variety or sub-species.
4. Pre-Construction Notification for State- or Federal-Listed Species, or BLM Sensitive Species. If a state or federal-listed species or BLM Sensitive species is detected, the Project owner shall immediately notify the CDFG, USFWS, BLM, and the CPM.

6. Preservation of the Germplasm of Affected Special-Status Plants. For all significant impacts to special-status plants, regardless of whether compensatory mitigation is required, mitigation shall include seed collection from the affected special-status plants on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. The seed shall be collected under the supervision or guidance of a reputable seed storage facility such as the Rancho Santa Ana Botanical Garden Seed Conservation Program, San Diego Natural History Museum, or the Missouri Botanical Garden. The costs associated with the long-term storage of the seed shall be the responsibility of the Project owner. Any efforts to propagate and reintroduce special-status plants from seeds in the wild shall be carried out under the direct supervision of specialists such as those listed above and as part of a Habitat Restoration/Enhancement Plan approved by the CPM.

Section D: Off-Site Compensatory Mitigation for Special-Status Plants

Where compensatory mitigation is required under the terms of Section C, above, the Project owner shall mitigate Project impacts to special-status plant occurrences with compensatory mitigation. Compensatory mitigation shall consist of acquisition of habitat supporting the target species, or restoration/enhancement of populations of the target species, and shall meet the performance standards for mitigation described below. In the event that no opportunities for acquisition or restoration/enhancement exist, the Project owner can fund a species distribution study designed to promote the future preservation, protection or recovery of the species. Compensatory mitigation shall be at a ratio of 3:1 for Rank 1 plants, with three acres of habitat acquired or restored/enhanced for every acre of habitat occupied by the special status plant that will be disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is ¼ acre than the compensatory mitigation will be ¾ of an acre). The mitigation ratio for Rank 2 plants shall be 2:1. So, for the example above, the mitigation ratio would be one-half acre for the Rank 2 plants.

The Project owner shall provide funding for the acquisition and/or restoration/enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this condition will vary depending on the Project Disturbance Area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) report, and other transactional costs related to the use of compensatory mitigation.

The Project owner shall comply with other related requirements in this condition:

I. Compensatory Mitigation by Acquisition: The requirements for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of special-status plant compensation lands include all of the following:

1. Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories:
    a. Occupied Habitat, No Habitat Threats: The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality that are required to support the target species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction).

b. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan as described in Section D.II, below.

c. Unoccupied but Adjacent. The Project owner may also acquire habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The Project owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the target species.

2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the CPM.
3. Management Plan. The Project owner or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the target special-status plant occurrences. The Management Plan shall be submitted for review and approval to the CPM.
4. Integrating Special-Status Plant Mitigation with Other Mitigation lands. If all or any portion of the acquired Desert Tortoise, Waters of the State, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation.
5. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, has approved the proposed compensation lands:

   Preliminary Report. The Project owner, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to

the CPM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.

Title/Conveyance. The Project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPM. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM, in consultation with CDFG, be named a third party beneficiary of the conservation easement. The Project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands.

Initial Protection and Habitat Improvement. The Project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities are estimated to be $330 per acre, using the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, but actual costs will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFG or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFG, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee.

Property Analysis Record. Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM before it can be used to establish funding levels or management activities for the compensation lands.

Long-term Maintenance and Management Funding. In accordance with BIO-28 (phasing), the Project owner shall deposit in NFWF's REAT Account a non-wasting capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.

The CPM, in consultation with CDFG, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFG takes fee title to the compensation lands, CDFG shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFG and with CDFG supervision. .

Interest, Principal, and Pooling of Funds. The Project owner shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:

Interest. Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the CPM and is designed to protect or improve the habitat values of the compensation lands.

Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.

Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for

long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the CPM.

Other Expenses. In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFG or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

Mitigation Security. The Project owner shall provide financial assurances in accordance with BIO-28 (phasing) to the CPM to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing Project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM. The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at a ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is significantly impacted by the project. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security if the CPM determines the Project owner has failed to comply with the requirements specified in this condition. The CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the Security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition, and the Project owner remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the Project owner in whole or in part upon successful completion of the associated requirements in this condition.

The Project owner may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the Project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the Project owner, the Project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, and the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the Applicant, the remaining balance shall be returned to the Project owner.

The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM, in consultation with CDFG, BLM and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the Energy Commission's certification of the Project.

II. Compensatory Mitigation by Habitat Enhancement/Restoration:

As an alternative or adjunct to land acquisition for compensatory mitigation the Project owner may undertake habitat enhancement or restoration for the target special-status plant species. Habitat enhancement or restoration activities must achieve protection at a 3:1 ratio for Rank 1 plants and 2:1 for Rank 2 plants, with improvements applied to three acres, or two acres, respectively, of habitat for every acre special-status plant habitat directly or indirectly disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is ¼ acre than the improvements would be applied to an area equal to ¾ of an acre at a

3:1 ratio, or one-half acre at a 2:1 ratio). Examples of suitable enhancement projects include but are not limited to the following: i) control unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species); ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows, removing obstructions to the wind sand transport corridor above an occurrence, or increasing groundwater availability for dependent species.

If the Project owner elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system[42] with one of the following threat ranks: a) long-term decline >30%; b) an immediate threat that affects >30% of the population, or c) has an overall threat impact that is High to Very High. "Rescue" would be considered successful if it achieves an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").

If the Project owner elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the CPM for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is directly or indirectly impacted by the project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third party such as NFWF, subject to approval by the CPM. The Habitat Enhancement/Restoration Plan shall include each of the following:

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[42] Master, L., D. Faber-Langendoen, R. Bittman, G. A., Hammerson, B. Heidel, J. Nichols, L. Ramsay, and A. Tomaino. 2009. *NatureServe Conservation Status Assessments: Factors for Assessing Extinction Risk.* NatureServe, Arlington, VA. Online: http://www.natureserve.org/publications/ConsStatusAssess_StatusFactors.pdf , "Threats". See also: Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity. Version 1. NatureServe, Arlington, Virginia. Online: http://www.natureserve.org/publications/pubs/invasiveSpecies.pdf

1. Goals and Objectives. Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a target special-status plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").
2. Historical Conditions. Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions.
3. Site Characteristics. Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species.
4. Ecological Factors. Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.
5. Methods. Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years.
6. Budget. Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria.
7. Monitoring. Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed, and contact information for the responsible parties.
8. Reporting Program. The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties.
9. Contingency Plan. Describe the contingency plan for failure to meet annual goals.
10. Long-term Protection. Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must

be contained in a Desert Wildlife Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and target species.

III. Compensatory Mitigation by Conducting or Contributing to a Special-Status Plant Species Distribution Study: As a contingency measure in the event that there are no opportunities for acquisition or restoration/enhancement, a Scientific Study of Special-status Plant Species Distribution Study may be funded. Distribution and occurrence health data is very limited for many of the sensitive species that occur on the Project or have potential to occur on the project, especially the late summer and fall blooming species. Some of these late blooming species are only known from a few viable occurrences in California, and historic occurrences that have not been re-located or surveyed since they were first documented. The objectives of this study would be to better understand the full distribution of the affected species, the degree and immediacy of threats to occurrences, and ownership and management opportunities, with the primary goal of future preservation, protection, or recovery. This study would include the following:

1. Historical Occurrence Review. The Study would include an evaluation of historical localities for the species known to occur on the project or with potential to occur. This would include a review of the CNDDB database, herbarium records from regional herbaria (U.C. Riverside, San Diego Natural History Museum, etc.), other biotechnical reports from the region, and information from regional botanical experts.
2. Conduct Site Visits to Historical Localities. Historical occurrences would be evaluated in the field during the appropriate time of the year for each late blooming species. If located, these occurrences would be evaluated for population size, numbers, plant associates, soils, habitat quality, and potential threats, degree and immediacy of threats, ownership and management opportunities. GPS location data would also be collected during these site visits.
3. Survey Areas with habitat potential that surround each of these species occurrences to better determine the full range of distribution. If additional populations are found, collect data (GPS and assessment) on these additional populations consistent with III.2 above.
4. Prepare a Distribution Study Report. A report that discusses the finding from the historical information and the range extension surveys would be prepared that summarizes the information for each of the late season surveys. This report will provide valuable information and a better understanding of the actual distribution of these late blooming species within California and will help to determine when and when not there is potential for these species to

occur. This valuable information will include a better understand of the ecological factors driving the distribution of these species and will help to better target appropriate habitat for both future surveys as well as potential future mitigation lands. All data from this study will be submitted for incorporation into the CNDDB system and the study report will be made available to resource agencies, conservation groups, and other interested parties.

Currently there is no program or study in place that is attempting to address the distributional issues for these late blooming species. If an existing study is identified or if one is developed prior to the study outlined here, an option to fund the existing study may be considered. If an existing study cannot be indentified then one will be developed that follows the guidelines discussed above. The funding provided for the program would be no greater than the cost for acquisition, enhancement, and long-term management of compensatory mitigation lands based on impacts to late blooming sensitive plant species.

Verification: The Special-Status Plant Impact Avoidance and Minimization Measures shall be incorporated into the BRMIMP as required under Condition of Certification **BIO-7.**

Raw GPS data, metadata, and CNDDB field forms shall be submitted to the CPM within two weeks of the completion of each survey. A preliminary summary of results for the late summer/fall botanical surveys shall also be submitted to the CPM and BLM's State Botanist within two weeks following the completion of the surveys. If surveys are split into more than one period, then a summary letter shall be submitted following each survey period. The Final Summer-Fall Botanical Survey Report, GIS shape files and metadata shall be submitted to the BLM State Botanist and the CPM no less than 30 days prior to the start of ground-disturbing activities. The Final Report shall include a detailed accounting of the acreage of Project impacts to special-status plant occurrences.

The draft conceptual Special-Status Plant Mitigation Plan shall be submitted to the CPM for review and approval no less than 30 days prior to the start of ground-disturbing activities.

The Project owner shall immediately provide written notification to the CPM, CDFG, USFWS, and BLM if it detects a State- or Federal-Listed Species, or BLM Sensitive Species at any time during its late summer/fall botanical surveys or at any time thereafter through the life of the Project, including conclusion of Project decommissioning.

No less than 30 days prior to the start of ground-disturbing activities the Project owner shall submit grading plans and construction drawings to the CPM which

depict the location of Environmentally Sensitive Areas and the Avoidance and Minimization Measures contained in Section A of this Condition.

If compensatory mitigation is required, no less than 30 days prior to the start of ground-disturbing activities, the Project owner shall submit to the CPM the form of Security adequate to acquire compensatory mitigation lands and/or undertake habitat enhancement or restoration activities, as described in this condition. Actual Security shall be provided 7 days prior to start of ground-disturbing activities.

No fewer than 90 days prior to acquisition of compensatory mitigation lands, the Project owner shall submit a formal acquisition proposal and draft Management Plan for the proposed lands to the CPM, with copies to CDFG, USFWS, and BLM, describing the parcels intended for purchase and shall obtain approval from the CPM prior to the acquisition. No fewer than 90 days prior to acquisition of compensatory mitigation lands, the Project owner shall submit to the CPM and obtain CPM approval of any agreements to delegate land acquisition to an approved third party, or to manage compensation lands; such agreement shall be executed and implemented within 18 months of the start of ground disturbance.
No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section I e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.

The Project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM of such completion no later than 18 months after the start of Project ground-disturbing activities. If NFWF or another approved third party is being used for the acquisition, the Project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline. If habitat enhancement is proposed, no later than six months following the start of ground-disturbing activities, the Project owner shall obtain CPM approval of the final Habitat Enhancement/Restoration Plan, prepared in accordance with Section D, and submit to the CPM or a third party approved by the CPM Security adequate for long-term implementation and monitoring of the Habitat Enhancement/Restoration Plan.

Enhancement/restoration activities shall be initiated no later than 12 months from the start of construction. The implementation phase of the enhancement project shall be completed within five years of initiation. Until completion of the five-year implementation portion of the enhancement action, a report shall be prepared and submitted as part of the Annual Compliance Report. This report shall provide, at a minimum: a summary of activities for the preceding year and a summary of activities for the following year; quantitative measurements of the Project's progress in meeting the enhancement project success criteria; detailed

description of remedial actions taken or proposed; and contact information for the responsible parties.

If a Distribution Study is implemented as contingency mitigation, the study shall be initiated no later than 6 months from the start of construction. The implementation phase of the study shall be completed within two years of the start of construction.

Within 18 months of ground-disturbing activities, the Project owner shall transfer to the CPM or an approved third party the difference between the Security paid and the actual costs of (1) acquiring compensatory mitigation lands, completing initial protection and habitat improvement , and funding the long-term maintenance and management of compensatory mitigation lands; and/or (2) implementing and providing for the long-term protection and monitoring of habitat enhancement or restoration activities.

Implementation of the special-status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed.

The Project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all avoided special-status plants to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, completed CNDDB field forms for each avoided occurrence on-site and within 100 feet of the Project boundary off-site, and description of the remedial action, if warranted and planned for the upcoming year. The completed forms shall include an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends.

Sand dune/fringe-toed lizard mitigation

BIO-20 To mitigate for habitat loss and direct impacts to Mojave fringe-toed lizards the Project owner shall provide compensatory mitigation at a 3:1ratio, which may include compensation lands purchased in fee or in easement in whole or in part, for impacts to stabilized or partially stabilized desert dune habitat (58 acres or the acreage of sand dune/partially stabilized sand dune habitat impacted by the final Project footprint). If compensation lands are acquired, the Project owner shall provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands.

1. Criteria for Compensation Lands: The compensation lands selected for acquisition shall:

a. Be sand dune or partially stabilized sand dune habitat within the Palen Valley or Chuckwalla Valley with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;
b. To the extent feasible, be connected to lands currently occupied by Mojave fringe-toed lizard;
c. To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
d. Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed;
e. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;
f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
g. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;
h. Not be subject to property constraints (i.e. mineral leases, cultural resources); and
i. Be on land for which long-term management is feasible.

2. Security for Implementation of Mitigation: The Project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of Mojave fringe-toed lizard habitat as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM according to the measures outlined in **BIO-12**, and within the time period specified for this assurance (see the verification section at the end of this condition). The final amount due will be determined by an updated appraisal and a PAR analysis conducted as described in **BIO-12**.
3. Preparation of Management Plan: The Project owner shall submit to the CPM, BLM, CDFG and USFWS a draft Management Plan that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands. The objective of the Management Plan shall be to enhance the value of the compensation lands for Mojave fringe-toed lizards, and may include enhancement actions such as weed control, fencing to

exclude livestock, erosion control, or protection of sand sources or sand transport corridors.

4.

Verification: No later than 30 days prior to beginning Project ground-disturbing activities, the Project owner shall provide written verification of Security in accordance with this condition of certification. The Project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities.

No less than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to BLM, the CPM, CDFG and USFWS describing the parcels intended for purchase.

The Project owner, or an approved third party, shall provide BLM, the CPM, CDFG and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title.The CPM shall review and approve the management plan, in consultation with BLMCDFG and the USFWS.

Within 90 days after completion of Project construction, the Project owner shall provide to the CPM an analysis with the final accounting of the amount of sand dune/stabilized sand dune habitat disturbed during Project construction.

The Project owner shall provide written verification to BLM, the CPM, USFWS, and CDFG that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from the start of ground-disturbing activities.

MITIGATION FOR IMPACTS TO BIGHORN SHEEP

BIO-21 To compensate for Project contributions to loss of spring foraging habitat for Nelson's bighorn sheep, the Project owner shall:

1. Create a New Water Source. The Project owner shall create a new water source for the Southern Mojave metapopulation of bighorn sheep in the McCoy Mountains or in other mountain ranges in the vicinity of the Project north of I-10, or shall renovate/restore an existing water source. The Project owner shall provide an assessment of which option (restoration or creation of a water source) would offer the most benefit for the Southern Mojave metapopluation of bighorn sheep. The Project owner shall consult with BLM and with the CDFG in development of that assessment. The Project owner shall monitor and manage the artificial or restored water source for the benefit of bighorn sheep for the life of the Project, or shall provide sufficient funding to support such monitoring and management by an approved third party.

Or

2. Acquire Compensatory Habitat. As an alternative to providing a water source as described above, the Project owner may elect to secure compensatory mitigation lands that would offset the loss of spring foraging habitat (desert dry wash woodland, vegetated swales, and unvegetated washes) for Southern Mojave metapopolation Nelson's bighorn sheep. If the Project owner selects this compensatory mitigation option the Project owner shall acquire, in fee or in easement no less than 922 acres of lands that:
    a. Provide suitable spring forage habitat for bighorn sheep in the form of desert dry wash woodland and vegetated swales within intermixed Sonoran creosote bush scrub habitat and

    b. Be within spring foraging habitat that would benefit the Southern Mojave metapopulation (i.e., north of I-10). Priority acquisition areas would be in eastern Riverside County roughly bounded by Interstate 10, Highway 62, and Highway 177.

    Acquisition Terms and Conditions. The terms and conditions of this acquisition or easement shall be as described in **BIO-12** (Desert Tortoise Compensatory Mitigation). The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with CDFG and USFWS prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat.

    Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM, CDFG, USFWS, and BLM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for the southern Mojave metapopulation of bighorn in relation to the criteria listed above. Approval from the CPM, in consultation with BLM and CDFG, shall be required for acquisition of all parcels comprising the compensation lands.

    Acquisition Security. If the 922 acres of bighorn sheep mitigation land is separate from the acreage required for desert tortoise compensation lands, the Project owner or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this acquisition (see the Verification section at the end of this condition). Alternatively, financial assurance can be provided by the Project owner to the CPM and CDFG, according to the measures outlined in **BIO-12**. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a

pledged savings account or another form of security ("Security") prior to initiating ground-disturbing Project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM and, in consultation with BLM, CDFG and the USFWS, to ensure funding. The final amount due will be determined by an updated appraisal and PAR analysis conducted as described in **BIO-12**.

No later than 6 months following publication of the Energy Commission Decision the Project owner shall submit to the CPM for review and approval a description of the proposed location of the water source that will be created or restored, including a discussion as to why the proposed site would benefit local and regional bighorn sheep populations. No later than 18 months following the publication of the Energy Commission Decision, the Project owner shall provide written verification to the CPM that restoration or construction of the ~~artificial~~ water source has been completed. At the same time, the Project owner shall: (1) provide a monitoring and management plan for bighorn use of the water source; and (2) provide evidence of an agreement (Memorandum of Understanding) and a funding mechanism to provide ongoing maintenance of the water source by CDFG or some other party approved by ~~t~~the CPM in consultation with BLM and CDFG.

As part of the annual compliance report, each year following completion of construction/restoration of the water source, the Project owner shall provide a report to the CPM that includes: a description of bighorn sheep detections at the water source and a summary of management activities for the year; a discussion of whether management goals for the year were met; and, if warranted, recommendations for management activities for the upcoming year to improve bighorn sheep use at the water source.

If the Project owner elects to mitigate for loss of bighorn sheep spring foraging habitat with acquisition of compensatory mitigation lands as described above, no less than 90 days prior to acquisition of the bighorn sheep compensation lands, the Project owner, or an approved third party, shall submit a formal acquisition proposal to the CPM, BLM, CDFG, and USFWS describing the 922 acres of lands intended for purchase. At the same time the Project owner shall submit a PAR or PAR-like analysis for the parcels for review and approval by the CPM, BLM, CDFG, and USFWS.

Verification: No later than 30 days prior to beginning Project ground-disturbing activities, the Project owner shall provide written verification of Security for acquisition of the 922 acres of land in accordance with this condition of certification.

No later than 18 months from initiation of construction the Project owner shall provide written verification to the BLM, the CPM, and CDFG that no fewer than 922 acres of compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

MITIGATION FOR IMPACTS TO STATE WATERS

BIO-22 The Project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code sections 1600 and 1607.

1. Acquire Off-Site State Waters: The Project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least 1,384 acres of state jurisdictional waters, or the area of state waters directly or indirectly impacted by the final Project footprint. The Project footprint means all lands disturbed by construction and operation of the Blythe Project, including all linears. The parcel or parcels comprising the 1,384 acres of ephemeral washes shall include at least 639 acres of desert dry wash woodland or the acreage of desert dry wash woodland impacted by the final Project footprint at a 3:1 ratio. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification **BIO-12** and the timing associated with BIO-28 (phasing). Mitigation for impacts to state waters shall be within the Chuckwalla Valley or Colorado River Hydrological Units (HUs), as close to the Project site as practicable.
2. Security for Implementation of Mitigation: The Project owner shall provide financial assurances to the CPM and CDFG to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of state waters as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM and CDFG in the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing Project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with BLMCDFG and the USFWS, to ensure funding. The final amount due will be determined by and updated appraisal and aPAR analysis conducted pursuant to **BIO-12**.
3. Preparation of Management Plan: The Project owner shall submit to the CPM and CDFG a draft Management Plan that reflects site-specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control.

4. Code of Regulations: The Project owner shall provide a copy of this condition (Condition of Certification **BIO-22**) from the Energy Commission Decision to all contractors, subcontractors, and the Applicant's Project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFG personnel upon demand. The CPM reserves the right to issue a stop work order or allow CDFG to issue a stop work order after giving notice to the Project owner, the CPM, if the CPM in consultation with CDFG, determines that the Project owner has breached any of the terms or conditions or for other reasons, including but not limited to the following:
    a. The information provided by the Applicant regarding streambed alteration is incomplete or inaccurate;
    b. New information becomes available that was not known to it in preparing the terms and conditions; or
    c. The Project or Project activities as described in the Staff Assessment have changed.
5. Best Management Practices: The Project owner shall also comply with the following conditions to protect drainages near the Project Disturbance Area:
    a. The Project owner shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible.
    b. The Project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows.
    c. The Project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the Project owner to ensure compliance.
    d. Spoil sites shall not be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.
    e. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage by the Project owner or any party working under contract or with the permission of the Project owner, shall be removed immediately.
    f. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof,

oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state.

g. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage.
h. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.

Verification: No less than 30 days prior to the start of construction-related ground disturbance activities potentially affecting waters of the state, the Project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented. The Project owner shall also provide a discussion of work in waters of the state in Compliance Reports for the duration of the Project.

No less than 30 days prior to beginning Project ground-disturbing activities, the Project owner shall provide the form of Security in accordance with this condition of certification. No later than 7 days prior to beginning Project ground-disturbing activities, the Project owner shall provide written verification of the actual Security. The Project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities.

The Project owner, or an approved third party, shall provide BLM, the CPM, CDFG and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFG.

Within 90 days after completion of Project construction, the Project owner shall provide to the CPM and CDFG an analysis with the final accounting of the amount of jurisdictional state waters disturbed during Project construction.

The Project owner shall provide written verification to BLM, the CPM, USFWS and CDFG that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from adoption of the Final Energy Commission Decision for the Blythe Solar Power Project).

The Project owner shall notify the CPM and CDFG, in writing, at least five days prior to initiation of Project activities in jurisdictional state waters and at least five

days prior to completion of Project activities in jurisdictional areas. The Project owner shall notify the CPM and CDFG of any change of conditions to the Project, impacts to state waters, or the mitigation efforts. The notifying report shall be provided to the CPM and CDFG no later than seven days after the change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a Project; the biological and physical characteristics of a Project area; or the laws or regulations pertinent to the Project as defined below. A copy of the notifying change of conditions report shall be included in the annual reports or until it is deemed unnecessary by the CPM and CDFG.

Biological Conditions: a change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the Project area, whether native or non-native, not previously known to occur in the area; or 2) the presence of biological resources within or adjacent to the Project area, whether native or non-native, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

Physical Conditions: a change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or substantial changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream.

Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

DECOMMISSIONING and reclamation PLAN

BIO-23 Upon Project closure the Project owner shall implement a final Decommissioning and Reclamation Plan. The Decommissioning and Reclamation Plan shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall be consistent with the guidelines in BLM's 43 CFR 3809.550 et seq.

Verification: No fewer than 30 days prior to the start of Project-related ground disturbing activities the Project owner shall provide to the CPM (for review) and BLM's Authorized Officer (for review and approval)a draft Decommissioning and Reclamation Plan. The plan shall be finalized prior to the start of commercial operation and reviewed every five years thereafter and submitted to the CPM for

review and to the BLM's Authorized Officer for approval. Modifications to the approved Decommissioning and Reclamation Plan shall be made only after approval from BLM's Authorized Officer. The Project Owner shall provide a copy of the approved Decommissioning and Reclamation Plan and any BLM approved revisions to the CPM.

GOLDEN EAGLE INVENTORY AND MONITORING

BIO-24 The Project owner shall implement the following measures to avoid or minimize Project-related construction impacts to golden eagles.

1. Annual Inventory During Construction. For each calendar year during which construction will occur an inventory shall be conducted to determine if golden eagle territories occur within one mile of the Project boundaries. Survey methods for the inventory shall be as described in the Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (Pagel et al. 2010) or more current guidance from the USFWS.
2. Inventory Data: Data collected during the inventory shall include at least the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, nest elevation; age class of golden eagles observed; nesting chronology; number of young at each visit; digital photographs; and substrate upon which nest is placed.
3. Determination of Unoccupied Territory Status: A nesting territory or inventoried habitat shall be considered unoccupied by golden eagles ONLY after completing at least 2 full surveys in a single breeding season. In circumstances where ground observation occurs rather than aerial surveys, at least 2 ground observation periods lasting at least 4 hours or more are necessary to designate an inventoried habitat or territory as unoccupied as long as all potential nest sites and alternate nests are visible and monitored. These observation periods shall be at least 30 days apart for an inventory, and at least 30 days apart for monitoring of known territories.
4. Monitoring and Adaptive Management Plan: If an occupied nest[43] is detected within one mile of the Project boundaries, the Project owner shall prepare and implement a Golden Eagle

[43] An occupied nest is one used for breeding by a pair of golden eagles in the current year. Presence of an adult, eggs, or young, freshly molted feathers or plucked down, or current years' mutes (whitewash) also indicate site occupancy. Additionally, all breeding sites within a breeding territory are deemed occupied while raptors are demonstrating pair bonding activities and developing an affinity to a given area. If this culminates in an individual nest being selected for use by a breeding pair, then the other nests in the nesting territory will no longer be considered occupied for the current breeding season. A nest site is considered occupied throughout the periods of initial courtship and pair‐bonding, egg laying, incubation, brooding, fledging, and post‐fledging dependency of the young.

Monitoring and Management Plan for the duration of construction to ensure that Project construction activities do not result in injury or disturbance to golden eagles. The monitoring methods shall be consistent with those described in the Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (Pagel et al. 2010) or more current guidance from the USFWS. The Monitoring and Management Plan shall be prepared in consultation with the USFWS. Triggers for adaptive management shall include any evidence of Project-related disturbance to nesting golden eagles, including but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of golden eagle disturbance.

Verification: No fewer than 30 days from completion of the golden eagle inventory the project owner shall submit a report to the CPM, CDFG, and USFWS documenting the results of the inventory.

If an occupied nest is detected within one mile of the Project boundary during the inventory the Project owner shall contact staff at the USFWS Carlsbad Office and CDFG within one working day of detection of the nest for interim guidance on monitoring and nest protection. The project owner shall provide the CPM, CDFG, and USFWS with the final version of the Golden Eagle Monitoring and Management Plan within 30 days after detection of the nest. This final Plan shall have been reviewed and approved by the CPM in consultation with USFWS and CDFG.

Evaporation Pond Netting And Monitoring

BIO-25 The Project owner shall cover the evaporation ponds prior to any discharge with 1.5-inch mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. Netting with mesh sizes other than 1.5-inches may be installed if approved by the CPM in consultation with CDFG and USFWS. The netted ponds shall be monitored regularly to verify that the netting remains intact, is fulfilling its function in excluding birds and other wildlife from the ponds, and does not pose an entanglement threat to birds and other wildlife. The ponds shall include a visual deterrent in addition to the netting, and the pond shall be designed such that the netting shall never contact the water. Monitoring of the evaporation ponds shall include the following:

1. Monthly Monitoring. The Designated Biologist or Biological Monitor shall regularly survey the ponds at least once per month starting with the first month of operation of the evaporation ponds. The purpose of the surveys shall be to determine if the netted ponds are effective in excluding birds, if the nets pose an entrapment hazard to birds and wildlife, and to assess the structural integrity of the nets. The monthly surveys shall be conducted in one day for a minimum of two hours following sunrise (i.e., dawn), a minimum of one hour mid-day (i.e., 1100 to 1300), and a minimum of two hours preceding sunset (i.e., dusk) in order to provide an accurate assessment of bird and wildlife use of the ponds during all seasons. Surveyors shall be experienced with bird identification and survey techniques. Operations staff at the Project site shall also report finding any dead birds or other wildlife at the evaporation ponds to the Designated Biologist within one day of the detection of the carcass. The Designated Biologists shall report any bird or other wildlife deaths or entanglements within two days of the discovery to the CPM, CDFG, and USFWS.

2. Dead or Entangled Birds. If dead or entangled birds are detected, the Designated Biologist shall take immediate action to correct the source of mortality or entanglement. The Designated Biologist shall make immediate efforts to contact and consult the CPM, CDFG, and USFWS by phone and electronic communications prior to taking remedial action upon detection of the problem, but the inability to reach these parties shall not delay taking action that would, in the judgment of the Designated Biologist, prevent further mortality of birds or other wildlife at the evaporation ponds.

3. Quarterly Monitoring. If after 12 consecutive monthly site visits no bird or wildlife deaths or entanglements are detected at the evaporation ponds by or reported to the Designated Biologist, monitoring can be reduced to quarterly visits.

4. Biannual Monitoring. If after 12 consecutive quarterly site visits no bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist and with approval from the CPM, USFWS and CDFG, future surveys may be reduced to two surveys per year, during the spring nesting season and during fall migration. If approved by the CPM, USFWS and CDFG, monitoring outside the nesting season may be conducted by the Environmental Compliance Manager.

5. Modification of Monitoring Program. Without respect to the above requirements the Project owner, CDFG or USFWS may submit to the CPM a request for modifications to the evaporation pond monitoring program based on information acquired during monitoring, and may also suggest adaptive management measures to remedy any problems that are detected during monitoring or modifications if bird impacts are not observed. Modifications to the evaporation pond monitoring described above and implementation of adaptive management measures shall be made only after approval from the CPM, in consultation with USFWS and CDFG.

In addition, the Project owner shall prepare and implement measures that will prevent Couch's spadefoot toads from using the evaporative basins (see Condition of Certification **BIO-26**)

Verification: No less than 30 days prior to operation of the evaporation ponds the Project owner shall provide to the CPM as-built drawings and photographs of the ponds indicating that the bird exclusion netting has been installed. For the first year of operation the Designated Biologist shall submit quarterly reports to the CPM, CDFG, and USFWS describing the dates, durations and results of site visits conducted at the evaporation ponds. Thereafter the Designated Biologist shall submit annual monitoring reports with this information. The quarterly and annual reports shall fully describe any bird or wildlife death or entanglements detected during the site visits or at any other time, and shall describe actions taken to remedy these problems.

COUCH'S SPADEFOOT TOAD IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-26 The Project owner shall prepare and implement a Couch's Spadefoot Toad Protection and Mitigation Plan (Protection and Mitigation Plan) to avoid, minimize or mitigate impacts to Couch's spadefoot toads and their breeding habitat during construction and operation of the Project. The Protection and Mitigation Plan shall be approved by the CPM in consultation with CDFG, and shall be incorporated into the Project's BRMIMP and implemented. It is expected that, as currently proposed, the Project would impact three potential breeding ponds.

The Protection and Mitigation Plan shall address methods to achieve this avoidance and minimization, and shall include avoidance, minimization, and mitigation measures that would be required if additional habitat or Couch's spadefoot toad are found during habitat surveys. The Protection and Mitigation Plan shall include, at a minimum:

1. Habitat Survey Results:

a. Survey methodology that focuses on areas that are susceptible to ponding (such as areas that are disturbed and/or artificially compacted);
b. Survey results, including a detailed discussion of potential breeding sites, and a description of areas determined not to include breeding habitat; and
c. Figures showing the areas surveyed and the location of potential breeding habitat in relation to proposed Project features.

2. Impacts Assessment from:
    a. Habitat disturbance from construction;
    b. Noise from construction, operations, and potential ORV traffic;
    c. Increased access for vehicles from road construction or improvements;
    d. Changes in breeding habitat due to changes in flow levels and flow patterns to breeding ponds;
    e. Increased traffic from construction and operations;
    f. Risk of exposure to elevated selenium and salinity levels in evaporative ponds; and
    g. Increased risk of predation.

3. Avoidance and Minimization Measures:
    a. Description of measures that would be implemented to avoid impacts to potential breeding ponds, such as design strategies; protective fencing or other barriers, worker's education, minimizing construction traffic within the vicinity of breeding ponds, and biological monitoring;

    b. Designation of a Management Area around breeding ponds that includes an appropriate upland buffer, and a description of measures used to minimize impacts within this buffer; and

    c. Design and operation measures that will bar individuals from entering evaporative ponds.

4. Mitigation: If complete avoidance of the ponds or other breeding sites identified during surveys is not possible, the Protection and Mitigation Plan shall include plans to create additional breeding habitats (ephemeral pond) at least equal in area to the acreage of ponds being impacted. Alternatively, the Project owner may purchase mitigation land that has the potential for ponding that is

equal to or greater than the ponds identified as potential Toad breeding ponds within the Project disturbance area.
If ponds are to be created, the created ponds shall be capable of holding water for at least nine days during the spadefoot toad breeding season. The created ponds shall be monitored and managed to ensure fulfillment of this performance standard by site visits at the pond following summer rainfall events. If the created ponds fail to achieve this standard, remedial action shall be implemented (for example, by compacting the soil in the pond to increase water-holding capacity).
If compensation lands are acquired, the Project owner shall provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands.

a. Criteria for Mitigation Lands: If the applicant chooses to mitigate in whole or in part by purchasing habitat:
    i. The applicant shall purchase habitats in fee title or easement within the known range of the Couch's spadefoot toad. The habitat shall have similar characteristics to those impacted on site including

        1. artificial or natural depressions should be deep enough to have the potential to support the Couch's spade foot toad
        2. depressions should have potential to pond water for nine days
        3. adjacent uplands should have potential to provide refugia and foraging habitat
        4. other characteristics that a trained biologist would employ in designating potential habitat for the species

    ii. If the above criteria are met, these habitats may overlap on other lands preserved by the applicant for other mitigation (e.g., desert tortoise habitat within Northern and Eastern Colorado Desert Coordinated Management) and shall:
        1. Provide quality habitat for Couch's spadefoot toad, that has the capacity to regenerate naturally when disturbances are removed;
        2. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;
        3. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;

4. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;
5. Not be subject to property constraints (i.e. mineral leases, cultural resources); and
6. Be on land for which long-term management is feasible.

b. Security for Implementation of Mitigation: The Project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of Couch's spadefoot toad habitat as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM and according to the measures outlined in **BIO-12**, and within the time period specified for this assurance (see the verification section at the end of this condition). The final amount due will be determined by an updated appraisal and a PAR analysis conducted as described in **BIO-12**.

Verification: No less than 30 days prior to any Project-related ground disturbance, the Project owner shall submit to the CPM and CDFG, a final Protection and Mitigation Plan. The Protection and Mitigation Plan shall address on-site protection and mitigation measures to be implemented during construction. Modifications to the Protection and Mitigation Plan shall be made only after approval from the CPM, in consultation with CDFG.

If the Protection and Mitigation Plan includes creation of ponds, the number and acreage of created ponds shall be described in the plan. No less than 90 days prior to operation of project the Project owner shall provide to the CPM as-built drawings and photographs of the created ponds and maps showing the size and location of the ponds in relation to project features. On January 31st of every year following initiation of operation of the Project the Project owner shall submit reports to the CPM documenting the capacity of the created ponds to hold water for at least 9 days during the spadefoot toad breeding season. If ponds fail to hold water as described above the Project owner shall implement remedial actions. The annual reporting may be terminated upon satisfactory demonstration of this performance standard, and with approval of the CPM.

If mitigation land is purchased as an alternative to pond creation, the Project owner shall provide the CPM and CDFG with an approved form of Security and the calculation of such security in accordance with this condition of certification and **BIO-12** no later than 30 days prior to beginning Project ground-disturbing activities. Actual Security shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities. If Security is provided, the Project owner, or an approved third party, shall complete and provide written

verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities.

No less than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFG and USFWS describing the parcels intended for purchase.

The Project owner, or an approved third party, shall provide the CPM, CDFG and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFG.

The Project owner shall provide written verification to the CPM, and CDFG that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from the start of ground-disturbing activities.

IN-LIEU FEE MITIGATION OPTION

BIO-27 The Project owner may choose to satisfy its mitigation obligations by paying an in lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision is found by the Commission to mitigate the impacts identified herein.

Verification: If electing to use this provision, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal mitigate for the impacts identified herein.

Project construction phasing plan

BIO-28 The Project Owner shall provide compensatory mitigation for the total Project Disturbance Area and may provide such mitigation in three phases, Phase 1a, Phase 1b, and Phase 2, as described in Palo Verde Solar 1, LLC's Proposed Phased Construction and Mitigation (Galati & Blek [tn:57593]. Palo Verde Solar 1, LLC's Proposed Phased Construction and Mitigation: Blythe Solar Power Project Docket No. (09-AFC-6), dated July 15, 2010.). "Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the Project.

Project construction will occur in three phases that generally follow development of the solar units, with the exception of the first phase of the Project, Phase 1a, which will consist of two types of construction areas: (1) linear facilities, including the access road and communication lines and (2) non-linear facilities to include a staging/laydown area and a portion of the Unit 1 solar block area.

Phase 1b shall consist of the remainder of Unit 1 and Unit 2, and Phase 2 shall consist of the remainder of the Project (Units 3 and 4). These phases will generally include installation of fencing, clearing, grubbing and grading, and development of common facilities first, followed by the remaining power block units. All construction activities for the non-linear features during these subsequent phases will occur within desert tortoise exclusionary fenced areas that have been cleared in accordance with USFWS protocols.

The disturbance area for each project Phase and resource type is provided in the tables below. This table shall be refined prior to the start of each construction phase with the disturbance area adjusted to reflect the final Project footprint for each phase. Prior to initiating each phase of construction the Project owner shall submit the actual construction schedule, a figure depicting the locations of proposed construction and amount of acres to be disturbed. Mitigation acres are calculated based on the compensation requirements for each resource type as described in the above Conditions of Certification – BIO-12 (Desert Tortoise), BIO-20 (Mojave Fringe-toed Lizard), BIO-18 (Western Burrowing Owl), and BIO-22 (State Waters). Compensatory mitigation for each phase shall be implemented according to the timing required by each condition.

Phase	**Desert Tortoise**		**MFTL**		**WBO**	
	Impact (acres)	**Mitigation (acres)**	**Impact (acres)**	**Mitigation (acres)**	**Impact (individuals/pairs)**	**Mitigation (acres)**
Phase 1a	769	769	0	0	0	0
Phase 1b	2,995	2,995	58	174	1	19.5
Phase 2	3,193	3,193	0	0	1	19.5
Total	6,958	6,958	58	174	2	39

Phase	**State Waters – Direct**		**State Waters – Indirect**	
	Impact (acres)	**Mitigation (acres)**	**Impact (acres)**	**Mitigation (acres)**
Phase 1a	67	130	0	0
Phase 1b	231	409	36	51
Phase 2	294	665	146	189
Total	593	1,205	133	179

Verification: The Project owner shall not disturb any area outside of the area that has been approved for that phase of construction and for the previously approved phases of construction.

No less than 30 days prior to the start of desert tortoise clearance surveys for each phase, the Project owner shall submit a description of the proposed construction activities for that phase to CDFG, USFWS and BLM for review and to the CPM for review and approval. The description for each phase shall include the proposed construction schedule, a figure depicting the locations of proposed construction and amount of acres of each habitat type to be disturbed.

B. SOIL AND WATER RESOURCES

This section addresses the soil and water resources associated with the Blythe Solar Power Project (BSPP), including the Project's potential to induce erosion and sedimentation, modify drainage and flooding conditions, adversely affect groundwater supplies, and degrade water quality. The analysis also considers potential cumulative impacts to soil and water resources related to future foreseeable projects and site decommissioning. Mitigation measures are included in the Conditions of Certification to ensure that the project will have no significant impacts on the environment and will comply with all applicable LORS.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Background and Setting

The Applicant, Palo Verde Solar I, LLC (PVSI), proposes to develop and operate a 1,000 megawatt (MW) solar energy facility called Blythe Solar Power Project (BSPP or Project) in eastern Riverside County, approximately eight miles northwest of the City of Blythe, two miles north of U.S. Interstate 10 (I-10), and 13 miles west of the Colorado River. (Exhibit 200; Soil and Water Resources - Figure 1.) The Project consists of a concentrating solar thermal electric generating facility comprised of four independent solar plants (units), each of which would have a nominal capacity of 250 MW. The proposed Project includes a right-of-way (ROW) area of approximately 9,400 aces on generally level desert terrain administered by the U. S. Bureau of Land Management (BLM). The total area proposed for disturbance within the Project ROW is approximately 7,030 acres, while the area inside the Project security fence (within which all Project site facilities would be located) is approximately 5,950 acres.

Electricity produced by all four proposed units will be distributed from a central switchyard via a new, approximately 7 mile long, 230 kV transmission line (gen-tie line). The proposed gen-tie line will extend south and southwest to a planned substation, with the majority of the gen-tie line corridor to also encompass proposed telecommunications facilities and an access route, as well as a new natural gas line (that will tie into an existing line approximately two miles south of the Project site). The remaining portions of the telecommunications facilities, access route and gas line will be located in a separate (parallel) corridor. (Exhibit 202; Appendix A, Figure 1.)

The Project site is located in the northwestern Colorado Desert, which is part of the greater Colorado Desert Geomorphic Province (Province). The Province is characterized by isolated mountain ranges separated by broad alluvium-filled basins overlying older rocks. The Project site is situated within an alluvial-filled basin on Palo Verde Mesa, which includes a number of fluvial (stream-derived) and alluvial fan deposits that are primarily Quaternary in age (less than approximately 1.6 million years old).

2. Soil and Erosion

Erosion is the displacement of solids (soil, mud, rock, and other particles) by wind, water, or ice, as well as by downward or down-slope movement in response to gravity. Based on the United States General Soil Map, three associated soil mapping units are located within the Project site: (1) the Rillito-Gunsight unit (which includes approximately 43 percent of the site, mostly in the western portion of the ROW); (2) the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni unit (which includes approximately the middle third of the Project site ROW); and (3) the Rositas-Orita-Carrizo-Aco unit, which encompasses approximately the eastern quarter of the ROW). The proposed gen-tie line/related facility corridors and the planned substation site all include the first two general soil units noted for the ROW, as well as the Rositas-Dune land-Carsitas unit. The described units are primarily sandy in nature and encompass a number of individual soil types and associated physical/chemical characteristics. (Exhibit 200; pp. C.9-11 to C.9-17.)

Project site soils exhibit moderate to high hazards for wind erosion, with soils in the eastern third of the ROW (specifically Aco Soils) exhibiting the highest potential for wind-related erosion. Water-related erosion potential under the present undisturbed conditions can be considered negligible (except for wash areas in the central portion of the site where soils are potentially more erosive due to higher silt content). When soils are disturbed during construction, however, wind- and/or water-related erosion rates may increase slightly and pose a potential impact. Project construction will be completed over a 69-month period, with associated earthwork including excavation for foundations and underground systems and a total cut and fill volume of approximately 8.3 million cubic yards. The vast majority of Project grading and excavation would occur on the Project site ROW, with only relatively minor excavation needed for installation of gen-tie, telecommunications, access and gas line facilities within the associated corridors. In addition, the evidence indicates that operational conditions will increase water-related erosion potential for most on-site soils

relative to undisturbed conditions, although wind erosion potential would generally decline during Project operation. (Exhibit 200; pp. C.9-42 to C.9-44.)

Based on the above evidence we find that Project-related wind erosion impacts are potentially significant. Accordingly, a Drainage Erosion and Sedimentation Control Plan (DESCP) is proposed to address (among other concerns) potential Project-related wind and water erosion impacts. This plan would include applicable measures, such as best management practices (BMPs), to identify, avoid/reduce, monitor, and document potential erosion and sedimentation effects from the BSPP Project. Condition of Certification **SOIL & WATER-1** would ensure that an approved DESCP is implemented and that all potential soil erosion impacts from Project-related construction and operation are less than significant.

3. Groundwater Basin Balance

Groundwater resources in the Project site and vicinity are associated with the Palo Verde Mesa Groundwater Basin (PVMGB), which encompasses approximately 280 square miles and includes the Project site. The Chuckwalla Valley Groundwater Basin is adjacent to the west, while the Palo Verde Valley Groundwater Basin is adjacent to the east. Natural recharge to the PVMGB is from sources including precipitation, inflow from the Chuckwalla Valley and Palo Verde Valley groundwater basins, and agricultural return flows. While the groundwater budget for the PVMGB includes complex relationships between subsurface flows and withdrawals, the evidence indicates that inflow and outflow are essentially equal and groundwater levels have been generally stable over time. Based on the fact that a hydraulic connection exists between local groundwater and the Colorado River, the evidence also suggests that groundwater withdrawals from the PVMGB are largely balanced by recharge (inflow) from the river via the Palo Verde Valley Groundwater Basin. (Exhibit 200, pp. C.9-20 to C.9-31, and p C.9-44.) The depth to groundwater at the Project site was measured at approximately 195 below the surface in October 2009.

All water used in association with the BSPP Project would be derived from local groundwater aquifers. The evidence indicates that proposed groundwater used during Project construction (approximately 820 acre-feet[44] per year [afy]) and operation (600 afy) could place the groundwater basin into overdraft (defined as the condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of

[44] One acre-foot equals approximately 326,000 gallons.

years during which water supply conditions approximate average conditions). (Exhibit 200, p. C.9-44.) Total groundwater extraction from the PVMGB during Project construction and operation is estimated at approximately 22,100 acre-feet (af). The PVMGB has approximately five million af in storage, with the proposed total groundwater extraction for the Project representing approximately 0.44 percent of the available stored water. Accordingly, Project-related impacts to groundwater storage in the PVMGB are considered to be insignificant. Based on the described connection between the PVMGB and the Colorado River, however, the evidence suggests that wells drawing groundwater from the PVMGB might be considered as withdrawing water from the river. (Exhibit 200; pp. C.9-44 and C.9-45.) Water supplies in the Colorado River are fully appropriated, with the existing appropriations encompassing all consumptive uses (including applicable groundwater pumping) pursuant to related Supreme Court decrees. The Project applicant has not provided a detailed analysis of the proportion of proposed groundwater extraction that would be derived from basin recharge and Colorado River underflow. Based on this condition and the noted connection between the PVMGB and the river, Project-related groundwater withdrawal could potentially result in significant impacts related to the diversion of Colorado River water.

Public/agency comments from the Colorado River Board of California and Defenders of Wildlife were also received on this issue. These comments identified similar concerns as described above regarding a connection between the Colorado River and PVMGB, and related impacts from Project groundwater extraction.

The described potential impacts to groundwater basin balance identified in the Project technical analysis and public/agency comments would be addressed through Condition of Certification **SOIL & WATER-2** which we hereby adopt. Specifically, this condition requires the Project owner to implement a Water Supply Plan to mitigate Project impacts to Colorado River flows (potentially including efforts such as conservation programs, funding of irrigation improvements, purchasing water rights, and/or tamarisk removal). (Exhibit 200; pp. C.9-44 to C.0-46, and C.9-97 and C.9-98., Exhibit 202; pp. 1 and 2) We also adopt Condition of Certification **SOIL & WATER-16**, to help define the quantity of surface water contributing to Project groundwater extraction (i.e., to estimate the amount of water that must be replaced pursuant to Condition of Certification **SOIL & WATER-2**). It is also noted that future water use in the PVMGB may be governed by impending regulations being formulated by the U.S. Bureau of Reclamation (which oversees management and appropriation of Colorado River water). (Exhibit 200; p. C.9-45, and C.9-76.) (7/15/10 RT, 57:17 - 62:9.)

4. Groundwater Levels

As previously noted, total groundwater extraction from the PVMGB during Project construction and operation is estimated at approximately 22,100 af. Based on this figure, the Project could potentially lower groundwater levels as a result of water production during both construction and operation. The lowering of groundwater levels could create a significant impact if it would result in: (1) impacts to existing water wells in the basin; (2) impacts to existing springs, seeps or other surface water discharges, and/or (3) lowering of the water table in areas where deep-rooted phreatophyte[45] vegetation is prevalent.

Investigations conducted by the Project applicant included using an established model to evaluate potential Project impacts to groundwater levels. This model was updated to reflect data from recent on-site aquifer testing, cumulative water use information in the Chuckwalla Valley Groundwater Basin provided by the BLM, and modified transmissivity and storage estimates. The modeling results suggest that groundwater level declines of five feet or more during the life of the Project would be located at a distance of less than 1,100 feet from the proposed production well (with the closest existing well located at a distance of 9,000 feet). The evidence indicates, however, that impact quantifications based on modeling are approximate, and actual impacts would not be accurately quantified until the occurrence of long-term groundwater production. (Exhibit 1; pp. 5.17-31 and 5.17-32, Exhibit 200; pp. C.9-47 to C.9-50.) Based on this conclusion, we adopt Conditions of Certification **SOIL & WATER-3** through **SOIL & WATER-6** and **SOIL & WATER-9** to address potential Project-related impacts to groundwater levels. Specifically, these conditions require that the Project owner ensure that: (1) Project wells are completed in accordance with applicable regulatory requirements (**SOIL & WATER-3**); (2) Project wells include installation and maintenance of appropriate metering devices (**SOIL & WATER-4**); (3) Project wells are operated in accordance with an approved Groundwater Level Monitoring, Mitigation, and Reporting Plan (**SOIL & WATER-5**); (4) the Project owner provides appropriate reimbursements to private well owners where applicable (**SOIL & WATER-6**); and (5) appropriate documentation is provided to the State Water Resources Control Board (SWRCB) regarding groundwater production (**SOIL & WATER-9**). Implementation of these Conditions of Certification is expected to reduce associated potential Project-related impacts to groundwater levels below a level of significance.

[45] Phreatophytes are generally defined as deep-rooted plants that obtain a significant portion of their water needs from groundwater.

The evidence also indicates that no existing springs are located in the vicinity of the Project site. McCoy Spring, located approximately seven miles to the northwest, is the closest such feature, and is separated from the Project site by the McCoy Mountains. Based on these conditions, Project-related groundwater extraction is not expected to affect flow at McCoy Spring (Exhibit 200; pp.C.9-35 and C.9-36.) Three additional "surface water sites" (streams) are located on the southern edge of Palo Verde mesa, approximately 10 miles south of the Project site. Because these sites are separated from the Project site by the northern portion of the Mule Mountains, no associated impacts are expected from Project-related groundwater extraction. As many as 50 other "surface water sites" (including seeps and surface discharges) are located east of the PVMGB in the Palo Verde Valley Groundwater Basin. Fifteen of these are located within 10 miles of the Project site, although they are identified as "…streams or canals that likely collect irrigation runoff from the abundant farmland in the Palo Verde Valley." (Exhibit 200; p. C.9-37.) No areas of phreatophyte vegetation are located in areas of the PVMGB or Palo Verde Valley Groundwater Basin that would potentially experience groundwater level impacts from Project-related extraction. Although no associated significant impacts are expected, any such potential effects would be further reduced through implementation of **SOIL & WATER-4** and **SOIL & WATER-5** as outlined above.

5. Groundwater Quality

Potential impacts to groundwater quality during construction are associated with the release of construction-related contaminated or hazardous materials, and their subsequent migration to the groundwater table. Based on the depth of the local groundwater table (approximately 195 feet below the surface), as well as the fact that a hazardous material management plan would be implemented during construction (refer to the **Hazardous Materials Management** portion of this Decision), potential impacts to groundwater quality during Project construction are expected to be less than significant.

Potential impacts to groundwater quality during Project operation are associated with the proposed on-site use of evaporation ponds, Land Treatment Units (LTUs), and septic systems, as discussed below. An additional potential concern regarding groundwater quality involves the proposed use of local groundwater aquifers to provide domestic water for Project-related uses (e.g., drinking water).

Evaporation Ponds

Each of the proposed 250 MW units will have two 3.5-acre evaporation ponds to dispose of wastewater from sources including cooling tower and boiler blowdown (for a total of seven acres per unit, or 28 acres for the entire Project site). The ponds will include double linings, consisting of a 60-mil high density Polyethylene (HDPE) primary liner and a 40-mil secondary HDPE liner. Drainage facilities and collection piping comprising part of the proposed leachate detection system (LDS) will be located between the liners, and a hard surface (e.g., roller-compacted concrete) will be installed on top of the 60-mil liner to provide protection against damage from falling objects, varying climatic conditions, and maintenance activities. The ponds will be designed and permitted as Class II Surface Impoundments in accordance with applicable regulatory requirements. Multiple ponds are planned to allow continued plant operations during activities such as pond maintenance. Pond dimensions will be designed to provide adequate surface area and depth to accommodate proposed wastewater inflow and precipitation rates over the life of the Project (approximately 30 years), as well as to provide adequate freeboard for direct precipitation from large storm events (i.e., to prevent overflow).

The precipitated solids will be sampled and analyzed to meet the characterization requirements of the receiving disposal facility, with the nature of the solids to determine the transportation and disposal methodology. It is anticipated that the pond solids and other non-hazardous wastes would be classified as Class II Designated Waste, a non-hazardous industrial waste, with this characterization to be verified by the Project owner prior to disposal. The total amount of solids anticipated to accumulate in the ponds over the 30-year Project life is approximately 23,000 tons. (Exhibit 200; pp. C.9-50 and C.9-51.) Monitoring of the evaporation ponds will be required during Project operation to detect the presence of liquid and/or solid constituents of concern, which are anticipated to include chloride, sodium, sulfate, total dissolved solids (TDS), biphenyl diphenyl oxide, potassium, selenium, and phosphate. (Exhibit 200; p. C.9-51)

Based on the described design criteria and monitoring program, as well as the additional requirements identified in **SOIL & WATER-7** and **SOIL & WATER-17** (which mandate compliance with applicable waste discharge standards and implementation of an approved Groundwater Quality Monitoring and Reporting Plan, respectively), potential groundwater quality impacts associated with the evaporation ponds are expected to be less than significant.

Land Treatment Units

The Project site will include one or more land treatment units (LTUs) to treat soil that may be impacted by minor leaks or spills of heat transfer fluid (HTF) during daily operation and maintenance activities. The proposed HTF at the BSPP facility is Therminol®, a synthetic oil comprised of diphenyl ether and biphenyl. LTUs would include a two-foot-thick clay layer on the floor (underlain by three feet of native soil compacted to 95 percent relative compaction) that would serve as a protective barrier to the downward movement of contaminants. LTUs would also be surrounded on all four sides by berms that would protect the facility from surface water inflow. At ambient temperatures, the HTF is highly viscous and virtually insoluble in water. Accordingly, the HTF is not likely to mobilize from the soil downwards to the water table, which is approximately 195 feet beneath the surface at the Project site. Operation of LTUs is not expected to impact surface water or groundwater quality beneath the site. LTUs would be operated in accordance with applicable regulatory requirements, including CCR Title 23, Division 3, Chapter 15; Title 27, Section 2000 et seq.; and Title 23, Section 2510 et seq. (Exhibit 200; p. C.9-51.)

Based on the described conditions, as well as the requirements set forth in Conditions of Certification **SOIL & WATER-7** and **SOIL & WATER-17**, operation of project LTUs is not expected to result in significant impacts to groundwater quality.

Septic Systems

Individual septic systems and leach fields are planned for each of the four independent solar units and the Project maintenance facility, for a total of five on-site septic systems and leach fields. The use and application of septic systems is a long established method of wastewater treatment. The proposed septic systems would be installed approximately five to six feet deep, with this type of system resulting in wastewater constituents being non-detectable within three feet of the bottom of the leach field. The privately owned off-site parcel closest to the proposed septic fields is in excess of one-half mile away, and the septic systems would have no effect on surface water in or around the Project site. (Exhibit 200, pp. C.9-51 and C.9-52.)

The septic systems and leach fields for the maintenance facility and Solar Unit Nos. 1 and 4 (the northeastern and southeastern units within the Project site) are hydraulically cross gradient from the closest privately owned off-site parcel. Accordingly, operation of the septic systems and leach fields from these three

areas is not expected to impact surface or groundwater quality at the privately-owned parcel. The septic systems and leach fields for Solar Unit Nos. 2 and 3 (the northwestern and southwestern units) are located hydraulically up-gradient from the privately-owned off-site parcel, with Solar Unit No. 3 to encompass the closest leach field to this parcel. The County of Riverside has adopted a number of setback requirements for septic systems and leach fields, including the following: (1) a minimum 100-foot horizontal setback from the nearest groundwater well; (2) a minimum 50-foot horizontal setback from the nearest water supply well; and (3) a minimum 5-foot vertical separation from the groundwater table. (Exhibit 200; pp. C.9-51 and C.9-52.) The proposed Project systems would exceed all of these requirements, with related setbacks including approximately 0.5 mile from the nearest existing groundwater well, approximately 250 feet from the nearest proposed (on-site) water supply well, and approximately 175 feet from the local water table.

A Public/agency comment on this issue was received from the County of Riverside Department of Environmental Health. This comment noted that advanced treatment could potentially be required for Project septic systems/leach fields by the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) to reduce the level of contaminants including nitrates, biochemical oxygen demand (BOD) and pathogens. Because the proposed systems are below the identified threshold of 5,000 gpd established by the CRBRWQCB, however, they would be subject to a related exclusion from CRBRWQCB requirements. (Exhibit 200; pp. C.9-91 and C.9-92.)

Based on the described information, preliminary studies conducted for the proposed Project septic systems conclude that there is a low potential for related impacts to local groundwater quality. The evidence indicates some uncertainty due to the preliminary nature of these analyses, however, and identifies a number of measures to address the associated potential impacts. Specifically, these include Conditions of Certification **SOIL & WATER-7**, **SOIL & WATER-8** and **SOIL & WATER-17**, which we hereby adopt, which require conformance with applicable waste discharge standards and Riverside County septic system/leach field standards, as well as an approved Groundwater Quality Monitoring and Reporting Plan. Implementation of the noted Project design measures, as well as the listed Conditions of Certification, would be expected to reduce potential groundwater quality impacts from proposed septic system and leach field facilities below a level of significance.

Domestic Water Use

Water supplies for all proposed uses associated with Project operation (including domestic/consumptive uses) would be derived from proposed on-site groundwater supply wells. Based on available data, the evidence indicates that existing groundwater quality in the immediate Project site vicinity would not meet drinking water quality standards due to relatively high levels of TDS, fluoride, chloride, boron, and sulfate. Concentrations of the noted constituents were generally lower in areas closer to the Colorado River, and increased moving westward toward the Project site. (Exhibit 200; pp. C.9-31 and C.9-32.) A related Public/agency comment on this issue was received from the County of Riverside Department of Environmental Health. This comment noted that the Project water system would be classified as a "non-community, non-transient domestic water system", and would therefore be required to meet all applicable federal and state water quality standards. Based on the described water quality and regulatory considerations, we adopt Staff-recommended Condition of Certification **SOIL & WATER-18** to address related potential concerns and ensure conformance with applicable standards regarding the Project water system. Implementation of this condition is expected to reduce potential impacts related to groundwater quality and the proposed Project water system below a level of significance.

6. Surface Hydrology, Storm Water Management, and Flooding

Surface Hydrology/Storm Water Management

The climate in the Project site vicinity is characterized by high aridity and low precipitation, with hot summers and generally mild winters. Average annual precipitation at the nearby Blythe Airport is approximately 3.6 inches, with most rainfall occurring during the winter months or in association with summer tropical storms (which tend to be of shorter duration and higher intensity than winter storms). Based on the noted conditions, local drainage is intermittent, with flows limited to infrequent storm event runoff in otherwise dry washes. Surface drainage on Palo Verde Mesa (including the Project site) is generally to the southeast towards the Colorado River, with Project site runoff conveyed as sheet flow and through a number of dry washes (including a branch of McCoy Wash in the northeastern ROW corner). (Exhibit 200; pp. C.9-34 to C.9-39, and Soil and Water Resources - Figure 1.)

Potential Project-related impacts to local surface water hydrology are directly related to proposed on-site grading and the construction and operation of a network of engineered collector/conveyance channels. These channels will be

designed for the purpose of protecting the Project from flooding and erosion related to the conveyance of runoff from off-site watersheds across the Project site. On-site runoff will be controlled through appropriate grading and a network of engineered channels designed to collect and convey flow through the project for discharge to one of the larger peripheral channels which ultimately discharge off-site. The Project would change both the extent and physical characteristics of the existing floodplain within the Project site and downstream of the Project site, as well as change the sediment transport and depositional characteristics of the Project site.

Engineered drainage channels would be constructed along the Project boundary wherever the potential for the interception of off-site surface flows exists. These channels would intercept off-site flows and convey them around and through the Project site for discharge at four discrete locations along the downstream Project boundary. Discharge of flow along the downstream Project site boundary would be through the use of "end diffuser" structures, which would be designed to reduce velocities and allow flows to spread out in a manner that mimics the existing downstream sheet flow conditions.

Releasing flow back to native ground at four discrete locations (albeit in a manner similar to existing conditions) is of concern for two primary reasons. The first is that flow collected from a large area and discharged in a more concentrated area may result in the potential for increased erosion. The second potential concern is that a substantial change in flow patterns could essentially "dry-up" discrete areas downstream of the Project site, potentially resulting in significant impacts to existing biological resources (refer to the **Biological Resources** portion of this Decision for additional discussion). (Ex. 200; pp. C.9-53 and C.9-54.)

An analysis of pre- and post-development peak flow rates at the downstream property boundary identifies a large disparity between the two conditions. (Ex. 200; p. C.9-54 – Soil & Water Table 18.) These differences appear too great to be accounted for by changes in on-site flow conditions, and some uncertainty exists regarding the correlation of pre- and post-development flow conditions and the related Hydraulic Engineering Center-Hydrologic Modeling System (HEC-HMS) analysis. The magnitude of the combined on- and off-site flows would have a direct impact on the adequacy of the proposed drainage design to prevent erosion at the points of discharge, as summarized below.

All existing washes and floodplains within the Project site boundary would be completely eliminated by the proposed grading of approximately 7,000 acres to

accommodate Project construction and operation. Existing natural drainage features would be replaced with a system of constructed swales and channels designed to collect and convey on-site flows to designated points of discharge from the Project. On-site storm water from the Project would be discharged directly offsite without the use of detention basins or any other means to capture, control, or retain onsite flows.

Within the gen-tie/telecommunications/gas line/access corridors, localized grading would likely occur at a number of drainages to allow vehicular access during construction and operation. Such grading activities can impact off-site portions of the drainages if impacted areas are not properly stabilized, and diversion and/or channelization of existing drainages should be avoided.

The Project would not impact existing natural drainage features upstream of the Project boundary, as no diversions, basins, dams or other surface water controls are proposed in upstream areas. Some potential exists for erosion in upstream areas, however, due to the possible formation of headcuts[46] which could migrate laterally from the engineered channels if they are not stabilized and protected.

No physical modifications are proposed to natural drainage features located downstream of the Project site boundary. The Project would, however, potentially affect downstream drainage due to proposed changes to both existing drainage patterns and sediment transport characteristics in upstream (on-site) areas. Accordingly, certain downstream areas would receive more flow than under existing conditions, while other areas may no longer receive any surface flow beyond that from direct precipitation. The resulting concentration of flows at proposed diffuser structures may also increase erosion potential.

An assessment of potential Project-related impacts to existing surface flow patterns has been conducted using a FLO-2D flood routing model and related analysis. The evidence indicates that some uncertainty exists regarding the methodology and results of these analyses. Accordingly, we adopt Conditions of Certification **SOIL & WATER-11** and **SOIL&WATER-12** to address these concerns. Specifically, **SOIL & WATER-11** would require a revised Drainage Report to evaluate and document pre- and post-development flow conditions, while **SOIL & WATER-12** would require a detailed hydraulic analysis using the FLO-2D model. Implementation of these Conditions of Certification would be

[46] A headcut is generally defined as a vertical face or drop in the bed of a stream channel. As water flows over such features, erosion can occur at the toe (or bottom) of the headcut, eventually causing instability and resulting in portions of the vertical face sloughing off (with the headcut thereby migrating upstream).

expected to reduce all potential Project-related impacts to surface drainage below a level of significance.

Flood Hazards

The Project would be protected from off-site flooding hazards through the construction of engineered channels along the upstream Project site boundaries. These channels would capture and convey 100-year (and smaller) storm flows through and around the Project site, with discharge occurring at four discrete locations along the downstream (east) Project boundary. An analysis of the design and performance of the proposed collector and conveyance channels was conducted for the Project, including preliminary plan and profile layout and hydraulic analysis using the Hydraulic Engineering Center-River Analysis System (HEC-RAS) computer program. The evidence indicates, however, that some uncertainty exists regarding inconsistencies between plan views, profiles and sections, including how the engineered collector channels would tie into existing grade. Specifically, portions of several channels do not meet established guidelines for allowable channel velocities and related factors, which could result in erosion of unprotected banks. (Ex. 200; pp. C.9-55 to C.9-57.) While the noted lack of information does not prohibit the assessment of potential impacts related to modification of existing drainage patterns, we adopt Condition of Certification **SOIL & WATER-13** to require supplemental data regarding the design and operation of the proposed collector and conveyance channels.

During operation, the proposed collector and conveyance channels around the periphery of the Project site would be exposed to incoming side flows along much of their extents (particularly the North, West and South channels). These inflows would include concentrated runoff at the more defined drainages, shallow sheet flow across much of the Project boundary, and smaller localized flows. All of these elements have the ability to cause erosion of unprotected channel banks and result in headcutting (which could potentially extend several hundred feet upstream). Accordingly, we adopt Condition of Certification **SOIL & WATER-14** to identify adequate channel protection measures**.**

Along portions of the North Channel, flow appears to occur in a direction primarily parallel to the channel alignment, and full lining of the north bank (e.g., with soil cement or another approved method) may not be required along this reach. That is, it may be acceptable to discharge into the North Channel at discrete locations along this reach, with the remainder of the north bank remaining earthen (i.e., unlined). This approach would require the use of compacted earthen berms located parallel to the North Channel to guide flow to discrete and stabilized

openings and spillways. Preliminary analysis indicates that the use of berms and spillways as described would adequately address potential erosion impacts, although additional investigation would be required to verify this conclusion (including a FLO-2D analysis during final design). These additional requirements are included in the list of analyses to be conducted as part of Condition of Certification **SOIL & WATER-14.**

Protection of the Project facility from flooding and erosion related to on-site runoff will be accomplished through appropriate grading and the construction of engineered swales and channels. The relatively flat proposed slopes and grading will prevent on-site runoff from concentrating, resulting in shallow sheet flow which minimizes the potential for surface erosion and sediment transport.

Operation of the proposed on-and off-site channels (and related facilities) would require appropriate inspection and maintenance efforts over the life of the facility. Specifically, these activities would be intended to ensure proper operation of the associated channels, as well as to minimize related potential on-and off-site erosion impacts. The applicant has prepared a Draft Channel Maintenance Plan, which addresses some of the potential issues associated with long term operation of the channels. The evidence indicates, however, that this plan does not adequately address such issues as collection of off-site flows and channel lining requirements. The document also references the use of riprap for erosion mitigation, which would not be allowed due to its incompatibility with biological resources (refer to the **Biological Resources** portion of this Decision for additional discussion). Based on the described conditions, Condition of Certification **SOIL & WATER-15** has been identified to address potential channel maintenance concerns.

Conclusion

Based on the above discussion, implementation of Conditions of Certification **SOIL & WATER-1** and **SOIL & WATER-11** through **SOIL & WATER-15**, along with related Project design features, would be expected to reduce Project-related impacts associated with surface hydrology, storm water management, and flood hazards below a level of significance.

A comment from Defenders of Wildlife was received on the issue of proposed drainage system/flood control facility design and related impacts to biological resources. This comment specifically identified the use of alternatives as "…the only viable means of eliminating or reducing this impact to acceptable levels." Based on the above analysis, however, the evidence indicates that the identified

potential impacts would be appropriately addressed through implementation of Conditions of Certification **SOIL & WATER-1** and **SOIL & WATER-11** through **SOIL & WATER-15**, along with proposed Project design features (and related Conditions of Certification identified in the **Biological Resources** portion of this Decision).

7. Surface Water Quality

Potential Project-related impacts to surface water quality would be associated with both construction and operation activities. Water quality impacts during construction would be related to potential erosion and the associated increase of sediment loads in adjacent streams and washes, as well as accidental leaks or spills of materials such as hydrocarbon fuels/greases, solvents, paints, and concrete. The Project applicant proposes to implement appropriate BMPs for managing potential construction-related impacts to surface water quality. This would include conformance with related permit requirements under the federal Clean Water Act/National Pollutant Discharge Elimination System (CWA/NPDES); as well as implementing applicable elements of Conditions of Certification **SOIL & WATER-1**, **SOIL & WATER-7**, and **SOIL & WATER-14**.

Potential impacts to surface water quality during Project operation include erosion and increases in sediment loads to adjacent washes; accidental spills of hydrocarbon fuels and greases (including HTF fluid); and accidental releases from the LTU and evaporation ponds (refer to the above discussion under Item 5, Groundwater Quality, for additional description of the LTU and evaporation pond facilities). Potential erosion and sedimentation impacts during Project operation would be addressed through applicable elements of Conditions of Certification **SOIL&WATER-1**. Potential impacts related to accidental spills and releases will be managed through: (1) appropriate Project design features (e.g., providing two feet of freeboard in evaporation ponds to minimize potential overtopping during larger storm events); (2) hazardous materials management requirements (refer to the **Hazardous Materials Management** portion of this Decision); (3) conformance with applicable CWA/NPDES permit requirements; and (4) implementation of pertinent elements of Conditions of Certification **SOIL & WATER-7** and **SOIL & WATER-14**.

Based on the above discussion, no significant impacts related to surface water quality are anticipated from Project construction and operation. (Exhibit 200; p. C.9-59.) Implementation of Conditions of Certification **SOIL & WATER-1**, **SOIL**

& WATER-7, and **SOIL & WATER-14** would be expected to further reduce potential Project-related impacts to surface water quality.

8. Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (14 Cal. Code Regs., § 15065[A] [3].) The discussion of cumulative impacts should be guided by standards of practicality and reasonableness. (14 Cal. Code Regs., 14, § 15130[b].)

Construction and operation of the proposed project will result in both temporary and permanent changes at the Project site. A number of past, present and future foreseeable projects (cumulative projects) were identified for the assessment of potential cumulative impacts, including the proposed BSPP Project. A summary of potential cumulative impacts to soil and water resources from past, present and future foreseeable projects is provided below.

Soil Erosion

Construction and operation of the proposed Project would result in both short- and long-term changes at the Project site which could incrementally increase local soil erosion and storm water runoff. The proposed Project would be expected to contribute only a small amount to the potential cumulative impacts related to soil erosion, however, as the Project applicant will be required to implement applicable mitigation measures that are expected to reduce erosion impacts below a level of significance (including Condition of Certification **SOIL & WATER-1)**.

Groundwater Basin Balance

Estimated groundwater extraction from the PVMGB for the cumulative projects (including the proposed Project) is anticipated to be 17,580 af for the projected 69-month Project construction period (including approximately 4,100 af for the proposed Project). Based on an estimated storage capacity of five million af for the PVMGB, cumulative groundwater extraction for the proposed Project and the cumulative projects would be approximately 0.35 percent of the total stored groundwater (including 0.08 percent for Project-related extraction). Based on the incremental amounts of anticipated groundwater use, no associated significant

impacts would result and Project construction-related groundwater extraction would not be cumulatively considerable.

Total groundwater extracted from the PVMGB over the life of the cumulative projects (including the proposed Project) will be approximately 143,000 af (including 18,000 af for the proposed Project). This would represent approximately 3 percent of the total estimated groundwater in storage in the basin. Based on the incremental amount of anticipated groundwater extraction, no associated significant impacts would result and Project operational groundwater extraction would not be cumulatively considerable. The cumulative projects, however, will likely induce subsurface inflow from the Colorado River similar to that described for the proposed Project. Because the Colorado River is fully appropriated, groundwater production in the PVMGB that increases subsurface flow from the Colorado River would represent a significant cumulative impact. Based on the implementation of Conditions of Certification **SOIL & WATER-2** and **SOIL & WATER-16**, we find that potential Project-specific impacts to surface water related to groundwater extraction and inflow from the Colorado River would be reduced below a level of significance. While mitigation for similar impacts from the cumulative projects cannot be determined at this time, it is considered likely that such impacts would be subject to similar measures as the proposed Project due to the legal requirements associated with Colorado River appropriations. In any case, the impacts to surface water associated with Colorado River inflow from the proposed Project would not be cumulatively considerable, based on the requirements in Conditions of Certification **SOIL & WATER-2** and **SOIL & WATER-16**.

Groundwater Levels

Groundwater modeling conducted for the cumulative projects (including the proposed Project) suggests that, during the life of these projects, groundwater level declines of five feet or more would be located at a distance of more than 22,000 feet from the Project site. (Exhibit 200; pp.C.9-70 and C.9-71.) Because the closest existing well is located approximately 9,000 feet from the Project site, associated potential impacts to water levels in existing wells would be cumulatively significant. Implementation of Conditions of Certification **SOIL & WATER-3** through **SOIL & WATER-5** is anticipated to reduce Project-related impacts to groundwater levels below a level of significance. While mitigation for similar impacts from the cumulative projects cannot be determined at this time, it is considered likely that such impacts would be subject to similar measures as the proposed Project. In any case, impacts to groundwater levels in the PVMGB

from the proposed Project would not be cumulatively considerable, based on the noted Conditions of Certification.

Groundwater Quality

Significant cumulative groundwater quality impacts could potentially occur during construction and/or operation of the cumulative projects if associated contaminated or hazardous materials were to be released and migrate to the groundwater table.

The proposed Project would be expected to contribute only a small amount to potential short- or long-term cumulative groundwater quality impacts, based on the following considerations: (1) the groundwater table at the Project site is located approximately 195 feet below the surface; (2) Project construction and operation would require implementation of a hazardous material management plan (as well as conformance with other applicable requirements such as CWA/NPDES permits); and (3) operation of the LTU, evaporation ponds and, septic systems would require applicable monitoring plans (pursuant to Conditions of Certification **SOIL & WATER-7**, **SOIL & WATER-8** and **SOIL & WATER-17**). As a result, impacts to groundwater quality from the proposed Project would not be cumulatively considerable.

Surface Water Hydrology

The cumulative impacts of the cumulative projects (including the proposed Project) on local surface water hydrology are directly related to proposed grading, as well as construction and operation of facilities such as pavement and flood control structures that would modify runoff rates/amounts and/or drainage patterns. Such effects would change the extent and physical characteristics of existing drainages and floodplains, both within and downstream of the associated project sites. In addition, modification of surface hydrologic conditions could potentially change the sediment transport and depositional characteristics of the related sites.

Potential short- and long-term impacts to surface water hydrology from the proposed Project are not expected to be cumulatively considerable. This conclusion is based on the following considerations: (1) the vast majority of the identified cumulative projects are not located within (or downstream of) the local watersheds associated with the proposed Project (Exhibit 200; pp. B.3-8 to B.3-13, and Cumulative Impacts - Figure 2.); (2) the proposed Project would require implementation of Conditions of Certification **SOIL & WATER-1** and **SOIL &**

WATER-11 through **SOIL & WATER-15**, along with related Project design features, with these measures expected to reduce Project-related impacts associated with surface hydrology, storm water management, and flood hazards below a level of significance; and (3) while mitigation for hydrology impacts from the cumulative projects cannot be determined at this time, it is considered likely that such impacts would be subject to similar measures as identified for the proposed Project.

Surface Water Quality

Potential cumulative impacts to surface water quality from the cumulative projects (including the proposed Project) are associated with both construction and operation activities. Water quality impacts during construction would be related to potential erosion and the associated increase of sediment loads in adjacent streams and washes, as well as accidental leaks or spills of materials such as hydrocarbon fuels/greases, solvents, paints, and concrete. Potential impacts to surface water quality during operation include erosion and increases in sediment loads to adjacent washes as well as accidental spills/releases of substances such as hydrocarbons (e.g., fuels and HTF fluid) and wastewater.

The proposed Project would implement appropriate measures for managing potential construction- and operation-related impacts to surface water quality, including: (1) conformance with applicable permit requirements under CWA/NPDES; (2) implementation of Conditions of Certification **SOIL & WATER-1**, **SOIL & WATER-7**, and **SOIL & WATER-14**; (3) use of appropriate Project design features; and (4) implementing hazardous materials management requirements (refer to the **Hazardous Materials Management** portion of this Decision). Based on these considerations, Project-related impacts to surface water quality are expected to be less than significant. While design and mitigation for surface water quality impacts from the cumulative projects cannot be determined at this time, it is likely that such impacts would be subject to similar measures as identified for the proposed Project. Accordingly, potential impacts to surface water quality from the proposed Project are not expected to be cumulatively considerable.

Decommissioning

Decommissioning of the proposed Project is expected to result in potential impacts related to soils and water resources similar to those identified for Project construction. It is considered unlikely that the construction or decommissioning of any of the cumulative projects would occur concurrently with decommissioning of

the proposed Project, as this decommissioning is not expected to occur for approximately 40 years. Accordingly, potential impacts related to soil and water resources from decommissioning of the proposed Project are not expected to be cumulatively considerable. Potential impacts associated with Project decommissioning will be further reduced through implementation of Condition of Certification **SOIL & WATER-10**, which requires the preparation and implementation of an approved decommissioning plan.

9. Substation and Gen-Tie Connection Area

Potential direct and indirect impacts to soil and water resources from the planned substation are primarily related to drainage, erosion, and sedimentation control during construction and operation. Most of the potential impacts would be expected to occur during construction, with a lower potential of occurring during operation. Potential impacts resulting from ground disturbance would be similar for all proposed substation/gen-tie connection and BSPP Project elements

While there are no known perennial water resources within the planned substation and associated gen-tie connection area, there is evidence of local surface storm water runoff and ephemeral desert washes may also be present. Accordingly, related surface flows may require redirection and/or the installation of berms to protect the substation from runoff (i.e., to direct the flow around both sides of the substation pad). These drainage improvements would potentially disturb an area approximately 80 feet wide around three sides of the substation, resulting in a total permanent disturbance area of approximately 20 acres. Internal surface runoff would be directed towards a 0.5-acre detention basin located at the south end of the substation (Exhibit 202; Appendix A, p. A-53.) Construction and operation of the planned substation and associated gen-tie connection area, which would fall within the regulatory jurisdiction of the CPUC, would require compliance with all applicable LORS and would incorporate all related requirements of other responsible agencies related to soil and water resources as described for the proposed Project. Specifically, this compliance would likely include implementation of a SWPPP and/or DESCP, and a Drainage Report, as outlined in **SOIL & WATER-1** and **SOIL & WATER-11**. It is anticipated that implementation of measures consistent with these requirements would adequately protect the substation and gen-tie connection facilities from significant effects related to flooding, and would effectively mitigate potential erosion and water quality impacts.

While some additional impervious (paved) surfaces would be created by the planned substation and associated gen-tie connection area, the net decrease in water recharged to local groundwater basins would be negligible. A net deficit in aquifer storage volume or a substantial lowering of the local groundwater table would not occur during construction or operation. Further, regional groundwater occurs at a level deeper than any proposed excavations and is not expected to be encountered during construction. Impacts to groundwater would be less than significant and no mitigation is recommended.

Cumulative impacts resulting from the planned substation and associated gen-tie connection area would be similar to those described for the BSPP Project, albeit at a much reduced level. Implementation of similar conditions of certification as recommended below for the proposed Project would therefore be expected to mitigate potential cumulative soil and water resources impacts below a level of significance (and/or result in impacts that are not cumulatively considerable). Construction and operation of the planned substation and associated gen-tie connection area, which would fall within the regulatory jurisdiction of the CPUC, would require compliance with all applicable LORS and would incorporate all related requirements of other responsible agencies. With implementation of the recommended Conditions of Certification or similar measures, staff anticipates that there would not be any significant adverse direct, indirect, or cumulative impacts to soil and water resources resulting from construction or operation of the planned substation and associated gen-tie connection area. (Exhibit 202; Appendix A, pp. A-53 and A-54.)

FINDINGS OF FACT

1. Total grading at the BSPP site will encompass approximately 8.3 million cubic yards of soil, and Project implementation will potentially result in short- and long-term erosion/sedimentation impacts.

2. Adherence to the procedures in the Condition of Certification **SOIL & WATER-1** (including the construction DESCP) and related CWA/NPDES permit requirements will avoid significant soil erosion and subsequent sedimentation during construction, conserve soil resources, maintain water quality, and prevent accelerated soil loss.

3. Project construction and operation will require approximately 22,100 af of groundwater extraction from the PVMGB, with this basin hydraulically connected to the Colorado River.

4. Proposed Project groundwater withdrawals from the PVMGB could result in the use of Colorado River water, with water supplies in the river already fully allocated.

5. Implementation of Condition of Certification **SOIL & WATER-2** and **SOIL & WATER-16** (if applicable) would reduce potential impacts related to groundwater basin balance in the PVMGB and associated effects to surface water from Colorado River inflow below a level of significance (although future water use in the PVMGB may be governed by impending regulations being formulated by the U.S. Bureau of Reclamation).

6. The proposed Project could potentially impact groundwater levels in local wells, but would not adversely affect surface waters such as springs or phreatophyte vegetation.

7. With the implementation of Conditions of Certification **SOIL & WATER-3** through **SOIL & WATER-6,** and **SOIL & WATER-9**, potential Project-related impacts to groundwater levels would be reduced below a level of significance.

8. Based on the depth of the local groundwater table and the fact that a hazardous material management plan would be implemented during construction (refer to the **Hazardous Materials Management** portion of this Decision), potential short-term impacts to groundwater quality are expected to be less than significant.
9. Potential impacts related to groundwater quality during Project operation are associated with the proposed on-site use of evaporation ponds, LTUs, and septic systems, as well as the use of local groundwater for domestic purposes (e.g., drinking water).

10. Implementation of Conditions of Certification **SOIL & WATER-7**, **SOIL & WATER-8, SOIL & WATER-17**, and **SOIL & WATER-18** would reduce long-term impacts related to groundwater quality below a level of significance.

11. The proposed Project could potentially result in short- and long-term impacts to surface hydrology, storm water management and flooding as a result of on-site grading and the construction and operation of a network of engineered collector/conveyance channels.

12. Implementation of Conditions of Certification **SOIL & WATER-1**, **SOIL & WATER-8**, and **SOIL & WATER-11** through **SOIL & WATER-15** (along with related Conditions of Certification identified in the **Biological Resources** portion of the Decision) would reduce short- and long-term impacts to surface hydrology, storm water management and flooding below a level of significance.

13. Project implementation would not result in significant short- or long-term impacts to surface water quality.

CONCLUSIONS OF LAW

1. With implementation of the Conditions of Certification listed below, the BSPP Project will comply with all applicable LORS, and will not result in any unmitigated and significant direct, indirect or cumulative adverse impacts related to Soil or Water Resources.

2. With implementation of the identified Conditions of Certification or similar measures as appropriate, implementation of the planned substation and associated gen-tie connection area project would be expected to comply with all applicable LORS, and would not be expected to result in any significant adverse direct, indirect, or cumulative impacts to soil and water resources.

CONDITIONS OF CERTIFICATION

Drainage Erosion and Sedimentation Control Plan

SOIL&WATER-1: Prior to site mobilization, the project owner shall obtain the Compliance Project Manager (CPM) approval of the Drainage Erosion and Sedimentation Control Plan (DESCP) for managing stormwater during Project construction and operations as normally administered by the County of Riverside. The DESCP must ensure proper protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, include provisions for sediment and stormwater retention from both the power block, solar fields and transmission right of way to meet any Riverside County requirements, address exposed soil treatments in the solar fields for both road and non-road surfaces, and identify all monitoring and maintenance activities. The DESCP shall contain, at minimum, the elements presented below that outline site management activities and erosion and sediment-control Best Management Practices (BMP) to be implemented during site mobilization, excavation, construction, and post construction (operating) activities.

A. **Vicinity Map** – A map(s), at a minimum scale 1 inch to 500 feet, shall be provided indicating the location of all Project elements (construction sites, laydown area, pipelines) with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

B. **Site Delineation** – All areas subject to soil disturbance for the proposed Project (Project phases, laydown area, all linear facilities, landscaping areas, and any other Project elements) shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

C. **Watercourses and Critical Areas** – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. It shall indicate the proximity of those features to the proposed Project construction, laydown, and landscape areas and all transmission and pipeline construction corridors.

D. **Drainage Map** – The DESCP shall provide a topographic site map(s), at a minimum scale of 1 inch to 200 feet, showing existing, interim, and proposed drainage swales and drainage systems and drainage-area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off site for a minimum distance of 100 feet.

E. **Drainage of Project Site Narrative** – The DESCP shall include a narrative of the drainage measures necessary to protect the site and potentially affected soil and water resources within the drainage downstream of the site. The narrative shall include the summary pages from the hydraulic analysis prepared by a professional engineer and erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage features.

F. **Clearing and Grading Plans** – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.

G. **Clearing and Grading Narrative** – The DESCP shall include a table with the estimated quantities of material excavated or filled for the site and all Project elements (Project site, laydown area, transmission and pipeline corridors, roadways, and bridges) whether such excavation or fill is temporary or permanent, and the amount of such material to be imported or exported.

H. **Soil Wind and Water Erosion Control -** The plan shall address exposed soil treatments to be used during construction and operation of the proposed Project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use

at the proposed Project site that would not cause adverse effects to vegetation. BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by the CPM prior to use.

I. **Best Management Practices Plan –** The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading, Project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control storm water runoff and sediment transport.

J. **Best Management Practices Narrative –** The DESCP shall show the location (as identified in (I) above), timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during all Project element (site, pipelines) excavations and construction, final grading/stabilization, and operation. Separate BMP implementation schedules shall be provided for each Project element for each phase of construction. The maintenance schedule shall include post-construction maintenance of structural-control BMPs, or a statement provided about when such information would be available.

K. **Project Schedule –** The DESCP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, Project element construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each Project element for each phase of construction.

L. **Erosion Control Drawings –** The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion control specialist.

M. **Agency Comments –** The DESCP shall include copies of recommendations, conditions, and provisions from the California Department of Fish and Game (CDFG) and Colorado River Basin Regional Water Quality Control Board (CRBWQCB).

N. **Monitoring Plan:** Monitoring activities shall include routine measurement of the volume of accumulated sediment in the onsite drainage ditches, and storm water diversions. The monitoring plan shall be part of the Channel Maintenance Program, **SOIL&WATER-15.**

Verification: No later than thirty (30) days prior to start of site mobilization, the project owner shall submit a copy of the final DESCP to the CPM for review and comment and to the County of Riverside and the CRBWQCB if required. The

CPM shall consider comments if received by the county and CRBRWQCB before approval of the DESCP.

The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and relevant portions of the DESCP shall clearly show approval by the chief building official. The DESCP shall be a separate plan from the SWPPP developed in conjunction with any National Pollution Discharge Elimination System (NPDES) permit for Construction Activity. The project owner shall provide in the monthly compliance report with a narrative on the effectiveness of the drainage, erosion, and sediment-control measures and the results of monitoring and maintenance activities. Once operational, the project owner shall update and maintain the DESCP for the life of the Project and shall provide in the annual compliance report information on the results of monitoring and maintenance activities.

SOIL&WATER-2: To mitigate the impact from Project pumping, the Project owner shall identify and implement offset measures to mitigate the increase in discharge from surface water to groundwater that affects recharge from the Palo Verde Valley Groundwater Basin (USGS) to the Palo Verde Mesa Groundwater Basin (USGS). The project owner shall implement **SOIL&WATER-16** to evaluate the change in recharge over the life of the project including any latency effects from Project pumping. The offset measures shall consider water conservation projects such as payment for irrigation improvements in Palo Verde Irrigation District, land fallowing, and/or BLM's Tamarisk Removal Program or other proposed mitigation activities acceptable to the CPM.

The activities proposed for mitigation shall be outlined in a Water Supply Plan that shall be provided to the CPM for review and approval and which shall include the following at a minimum:

A. Identification of the water offsets as determined in **SOIL&WATER-16**;
B. Demonstration of the Project owner's ability to conduct the activity;
C. Whether any governmental approval of the identified offset will be needed, and if so, whether additional approval will require compliance with CEQA or NEPA;
D. Demonstration of how much water is provided by each of the offset measures;
E. An estimated schedule for completion of the activities;
F. Performance measures that would be used to evaluate the amount of water replaced by the proposed offset measures; and
G. A Monitoring and Reporting Plan outlining the steps necessary and proposed frequency of reporting to show the activities are achieving the intended benefits of the water supply offsets;

Verification: The project Owner shall submit a Water Supply Plan to the CPM for review and approval thirty (30) days before the start of extraction of groundwater for construction or operation.

The Project owner shall implement the activities reviewed and approved in the Water Supply Plan in accordance with the agreed upon schedule in the Water Supply Plan. If agreement with the CPM on identification or implementation of offset activities cannot be achieved the Project owner shall immediately halt construction or operation until the agreed upon activities can be identified and implemented.

Project Groundwater Wells, Pre-Well Installation

SOIL&WATER-3 The project owner proposes to construct and operate up to ten (10) onsite groundwater supply wells that produce water from the Palo Verde Mesa Groundwater Basin (PVMGB). The project owner shall ensure that the wells are completed in accordance with all applicable state and local water well construction permits and requirements. Prior to initiation of well construction activities, the project owner shall submit for review and comment a well construction packet to the County of Riverside and fees normally required for the county's well permit, with copies to the CPM. The Project shall not construct a well or extract and use groundwater until an approval has been issued by the CPM to construct and operate the well. Wells permitted and installed as part of pre-construction field investigations that subsequently are planned for use as project water supply wells require CPM approval prior to their use to supply water to the project.

Post-Well Installation. The project owner shall provide documentation as required under County permit conditions to the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the DWR a Well Completion Report for each well installed. The project owner shall ensure the Well Completion reports are submitted. The project owner shall ensure compliance with all county water well standards and County requirements for the life of the wells and shall provide the CPM with two (2) copies each of all monitoring or other reports required for compliance with the County of Riverside water well standards and operation requirements, as well as any changes made to the operation of the well.

Verification: The project owner shall do all of the following:

a. No later than sixty (60) days prior to the construction of the onsite groundwater production wells, the project owner shall submit to the CPM a

copy of the water well construction packet submitted to the County of Riverside.

b. No later than thirty (30) days prior to the construction of the onsite groundwater production wells, the project owner shall submit a copy of written concurrence received from the County of Riverside that the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program. The CPM shall provide approval to the project owner of the well location and operation within ten (10) days of receipt of the County of Riverside's concurrence with the proposed well construction activities
c. No later than sixty (60) days after installation of each well at the Project site, the project owner shall ensure that the well driller submits a Well Completion Report to the DWR with a copy provided to the CPM. The project owner shall submit to the CPM together with the Well Completion Report a copy of well drilling logs, water quality analyses, and any inspection reports. Additionally no later than sixty (60) days after installation of each well the Project owner shall submit documentation to the CPM and the CRBRWQCB that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) and that any onsite drilling sumps used for Project drilling activities were removed in compliance with 23 CCR section 2511(c)
d. During well construction and for the operational life of the well, the project owner shall submit two copies to the CPM of any proposed well construction or operation changes.

Construction and Operation Water Use

SOIL&WATER-4: The proposed Project's use of groundwater during construction shall not exceed 4,100 af during the 69 months of construction and an annual average of 600 afy during operation). Water quality used for project construction and operation will be reported in accordance with Condition of Certification **SOIL&WATER-18** as applicable to ensure compliance with this condition.

Prior to the use of groundwater for construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document Project water use and to monitor and record, in gallons per day, the total volume(s) of water supplied to the Project from this water source. The metering devices shall be operational for the life of the Project.

Verification: At least ten (10) days prior to the start of groundwater pumping for construction of the proposed Project, the Project owner shall submit to the CPM a copy of evidence that metering devices have been installed and are operational.

Beginning six months after the start of construction, the project owner shall prepare a semi-annual summary of amount of water used for construction purposes. The summary shall include the monthly range and monthly average of daily water usage in gallons per day.

The project owner shall prepare an annual summary, which shall include daily usage, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary shall also include the yearly range and yearly average water use by source. For calculating the total water use, the term "year" will correspond to the date established for the annual compliance report submittal.

GROUNDWATER LEVEL MONITORING, MITIGATION, AND REPORTING PLAN

SOIL&WATER-5: The project owner shall submit a Groundwater Level Monitoring, Mitigation, and Reporting Plan to the CPM for review and approval in advance of using onsite wells to supply groundwater for construction activities. The Groundwater Level Monitoring, Mitigation, and Reporting Plan shall provide detailed methodology for monitoring background and site groundwater levels. Monitoring shall include pre-construction, construction, and operational water use. The plan shall establish pre-construction groundwater level trends from available data that can be quantitatively used as a baseline to establish pre-Project water level trends and to subsequently compare to operational Project pumping water level data.

A. Prior to Project Construction

1. A well reconnaissance shall be conducted to investigate and document the condition of existing water supply wells as established by the groundwater model and condition A.2 below, provided that access is granted by the well owners. The reconnaissance shall include sending notices by registered mail to all property owners for wells identified under condition A.2 below.
2. The monitoring network for offsite wells shall be defined by the groundwater model developed for the AFC, using the lower transmissivity value derived from aquifer testing on the site, so as to provide a conservative estimate of the potential impact, and to identify the area predicted to show a water level change of 1 feet or more at the end of construction and at the end of operation.
3. Monitor to establish preconstruction conditions. The network of monitoring wells shall make use of existing wells in the basin

that are accessible and would satisfy the requirements for the monitoring program. The monitoring network shall also include any monitoring wells that are installed to comply with Waste Discharge Requirements (see **SOIL&WATER-7**). Provided access is granted, additional wells located outside of the area defined by the model and Condition A.2 above will be located to serve as background monitoring wells. Abandoned wells, or wells no longer in use, that are accessible and provide reliable water level data within the potentially impacted area may also be included as part of the monitoring network. A site reconnaissance will be performed to identify wells that could be accessible for monitoring. As access to these wells is available, historic water level, water quality, well construction and well performance information shall be obtained for both pumping and non-pumping conditions.

4. As access allows, in advance of using onsite wells to supply groundwater for construction activities, groundwater levels will be measured from the off-site and on-site wells within the network and background wells to provide initial groundwater levels for pre-project trend analysis. The installation and monitoring of water levels using pressure transducers shall be done in selected wells to provide an assessment of seasonal trends.
5. Construct water level maps within the PVMGB within the area encompassed by all monitoring wells in A.1, 2, 3 and 4 above prior to construction. As data is available, the Project owner shall prepare trend plots, perform statistical analyses using the Mann-Kendall test (or other CEC-approved statistical analysis method) for trend to assess pre-project water level trends.

B. During Construction:

1. Collect water levels on a quarterly basis throughout the construction period and at the end of the construction period. Perform statistical trend analysis for water levels using the Mann-Kendall test (or other CEC-approved statistical analysis method). Assess the significance of an apparent trend and estimate the magnitude of that trend.

C. During Operation:

1. On a quarterly basis for the first year of operation and semi-annually thereafter for the following four years, collect water level measurements from any wells identified in the groundwater monitoring program to evaluate operational influence from the Project. Quarterly operational parameters (i.e., pumping rate) of the water supply wells shall be monitored as access allows for those wells within the monitoring network. Wells outside the network and their influence on pumping within the network shall

be evaluated on a quarterly basis to understand well interference from sources of pumping outside the Project area.

2. On an annual basis, perform statistical trend analysis for water levels data and comparison to predicted water level declines due to project pumping. Analysis of the significance of an apparent trend shall be determined and the magnitude of that trend estimated. Pressure transducer data from groundwater level measuring devices will be used to assess seasonality and diurnal trends in the water level data. Based on the results of the statistical trend analyses and comparison to predicted water level declines due to Project pumping, the project owner shall determine the area where the Project pumping has induced a drawdown in the water supply at a level of 5 feet or more below the baseline trend.
3. If water levels have been lowered more than 5 feet below pre-site operational trends, and monitoring data provided by the project owner show these water level changes are different from background trends or other groundwater pumping and are caused by Project pumping, then the project owner shall provide mitigation to the impacted well owner(s). Mitigation shall be provided to the impacted well owners that experience 5 feet or more of Project-induced drawdown if the CPM's inspection of the well monitoring data confirms changes to water levels and water level trends relative to measured pre-project water levels, and the well (private owners well in question) yield or performance has been significantly affected by Project pumping. The type and extent of mitigation shall be determined by the amount of water level decline induced by the Project, the type of impact, and site specific well construction and water use characteristics. If an impact is determined to be caused by drawdown from more than one source, the level of mitigation provided shall be proportional to the amount of drawdown induced by the Project relative to other sources. In order to be eligible, a well owner must provide documentation of the well location and construction, including pump intake depth, and that the well was constructed and usable before Project pumping was initiated. The mitigation of impacts shall be determined as follows:
    a. If Project pumping has lowered water levels by 5 (five) feet or more and increased pumping lifts, increased energy costs shall be calculated. Payment or reimbursement for the increased costs shall be provided on an annual basis. In the absence of specific electrical use data supplied by the well owner, the project owner shall use **SOIL&WATER-6** to calculate increased energy costs.

b. If groundwater monitoring data indicate Project pumping has lowered water levels below the top of the well screen, and the well yield is shown to have decreased by 10 percent or more of the pre-Project average seasonal yield, compensation shall be provided for the diagnosis and maintenance to treat and remove encrustation from the well screen. Reimbursement shall be provided at an amount equal to the customary local cost of performing the necessary diagnosis and maintenance for well screen encrustation. Should the well yield reductions be recurring, the project owner shall provide payment or reimbursement for periodic maintenance throughout the life of the Project. If with treatment the well yield is incapable of meeting 110 percent of the well owner's historic operational maximum daily demand, dry season demand, or annual demand, or the wells sustainable maximum yield demonstrated through well testing, the well owner should be compensated by reimbursement or well replacement as described under 3.c. below.

c. If Project pumping has lowered water levels to significantly impact well yield so that it can no longer meet its intended purpose, causes the well to go dry, or cause casing collapse, payment or reimbursement of an amount equal to the cost of deepening or replacing the well shall be provided to accommodate these effects. Payment or reimbursement shall be at an amount equal to the customary local cost of deepening the existing well or constructing a new well of comparable design and yield (only deeper). The demand for water, which determines the required well yield, shall be determined on a per well basis using well owner interviews, historic well operational records and well testing data, field verification of property conditions and water requirements that are compiled as part of the pre-project well reconnaissance. Well yield shall be considered significantly impacted if it is incapable of meeting 110 percent of the well owner's historical operational maximum daily demand, dry-season demand, or annual demand as documented by the pre-Project historical operational records or 100 percent of the maximum sustainable well yield as provided in historic well testing data. If historic well testing data indicates the capacity of the well is higher than the operational data suggests, the well shall be operated for a sufficient period of time acceptable to the CPM, Project owner and well owner to demonstrate that its maximum sustainable yield has been impacted solely by the Project pumping. If by comparison

the well is incapable of meeting 100 percent of the historic maximum sustainable yield demonstrated by the testing, and the reduction in capacity is solely related to the Project pumping, the well owner should be compensated for the lost capacity. Compensation for lost capacity in lieu of well replacement shall be in the form of a lump sum payment equal to the cost of deepening the well to a depth sufficient to return the well yield to its maximum sustainable yield. .

d. The project owner shall notify any owners of the impacted wells within one month of the CPM approval of the compensation analysis for increased energy costs.
e. Pump lowering – In the event that groundwater is lowered as a result of Project pumping to an extent where pumps are exposed but well screens remain submerged the pumps shall be lowered to maintain production in the well. The Project shall reimburse the impacted well owner for the costs associated with lowering pumping in proportion to the Project contribution to the impact.
f. Deepening of wells – If the groundwater is lowered enough as a result of Project pumping that well screens and/or pump intakes are exposed, and pump lowering is not an option, such affected wells shall be deepened or new wells constructed. The Project shall reimburse the impacted well owner for all costs associated with deepening existing wells or construction of a new well in proportion to the Project contribution to the impact.

4. After the first five-year operational and monitoring period the CPM shall evaluate the data and determine if the monitoring program for water level measurements should be revised or eliminated. Revision or elimination of any monitoring program elements shall be based on the statistically verifiable datasets and trend analysis. The determination of whether the monitoring program should be revised or eliminated shall be made by the CPM.
5. If mitigation includes monetary compensation, the project owner shall provide documentation to the CPM that compensation payments have been made by March 31 of each year of Project operation. Within thirty (30) days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.
6. At the end of every subsequent five-year monitoring period, the collected data shall be evaluated by the CPM and they shall determine if the sampling frequency should be revised or eliminated.

7. During the life of the Project, the project owner shall provide to the CPM all monitoring reports, complaints, studies and other relevant data within ten (10) days of being received by the Project owner.

Verification: The project owner shall do all of the following:

a. At least thirty (30) days in advance of using onsite wells to supply groundwater for Project construction, a Groundwater Monitoring and Reporting Plan shall be submitted to the CPM for review and approval before completion of Condition of Certification SOIL&WATER-3 (Well Installation). The Groundwater Monitoring and Reporting Plan shall provide the methodology for monitoring background and site groundwater levels.
b. At least fifteen (15) days in advance of using onsite wells to supply groundwater for Project construction activities, the project owner shall submit to the CPM, a comprehensive report presenting all the data and information required in item A above. The CPM will provide comments to the plan following submittal. CPM approval of the plan is required prior to operation of the site groundwater supply wells. The project owner shall also submit to the CPM all calculations and assumptions made in development of the report data and interpretations.
c. During Project construction, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in item B above. The quarterly reports shall be provided thirty (30) days following the end of the quarter. The project owner shall also submit to the CPM all calculations and assumptions made in development of the report data and interpretations.
d. No later than March 31 of each year of construction or sixty (60) days prior to Project operation, the project owner shall provide to the CPM for review and approval, documentation showing that any mitigation to private well owners during Project construction was satisfied, based on the requirements of the property owner as determined by the CPM.
e. During Project operation, the project owner shall submit to the CPM, applicable quarterly, semi-annual and annual reports presenting all the data and information required in item C above. Quarterly reports shall be submitted to the CPM thirty (30) days following the end of the quarter. The fourth quarter report shall serve as the annual report and will be provided on January 31 in the following year.
f. The project owner shall submit to the CPM all calculations and assumptions made in development of report data and interpretations, calculations, and assumptions used in development of any reports.
g. After the first five year operational and monitoring period, the project owner shall submit a 5-year monitoring report to the CPM that includes all monitoring data collected and a summary of the findings. The CPM will determine if the water level measurements and water quality sampling frequencies should be revised or eliminated.

SOIL&WATER-6: Where it is determined that the project owner shall reimburse a private well owner for increased energy costs identified as a result of analysis performed in Condition of Certification **SOIL&WATER-5,** the project owner shall calculate the compensation owed to any owner of an impacted well as described below.

Increased cost for energy	= change in lift/total system head x total energy consumption x costs/unit of energy
Where:	
change in lift (ft)	= calculated change in water level in the well resulting from project
total system head (ft)	= elevation head + discharge pressure head
elevation head (ft)	= difference in elevation between wellhead discharge pressure gauge and water level in well during pumping.
discharge pressure head (ft)	= pressure at wellhead discharge gauge (psi) X 2.31

The project owner shall submit to the CPM for review and approval the documentation showing which well owners must be compensated for increased energy costs and that the proposed amount is sufficient compensation to comply with the provisions of this condition.

- Any reimbursements to impacted well owners shall be only to those well owners whose wells were in service within six months of the Energy Commission decision and within the monitoring area predicted by the groundwater modeling condition A.2.
- The project owner shall notify all owners of the impacted wells within one month of the CPM approval of the compensation analysis for increase energy costs.
- Compensation shall be provided on an annual basis, as described below.

Compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the impacted well owner, the project owner shall provide energy meters for each well or well field affected by the project. The impacted well owner to receive compensation must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption. For each year after the first year of operation, the project owner shall include an

adjustment for any deviations between projected and actual energy costs for the previous calendar year.

Verification: The Project owner shall do all of the following:

No later than thirty (30) days after CPM approval of the well drawdown analysis, the project owner shall submit to the CPM for review and approval all documentation and calculations describing necessary compensation for energy costs associated with additional lift requirements.

The project owner shall submit to the CPM all calculations, along with any letters signed by the well owners indicating agreement with the calculations, and the name and phone numbers of those well owners that do not agree with the calculations. Compensation payments shall be made by March 31 of each year of project operation. Within thirty (30) days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.

WASTE DISCHARGE REQUIREMENTS

SOIL&WATER-7: The project owner shall comply with the requirements specified in Appendix B, C, and D. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with staff of the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"). It is the Commission's intent that these requirements be enforceable by both the Commission and the Water Boards. In furtherance of that objective, the Commission hereby delegates the enforcement of these requirements, and associated monitoring, inspection and annual fee collection authority, to the Water Boards. Accordingly, the Commission and the Water Board shall confer with each other and coordinate, as needed, in the enforcement of the requirements. The project owner shall pay the annual waste discharge permit fee associated with this facility to the Water Boards. In addition, the Water Boards may "prescribe" these requirements as waste discharge requirements pursuant to Water Code Section 13263 solely for the purposes of enforcement, monitoring, inspection, and the assessment of annual fees, consistent with Public Resources Code Section 25531, subdivision (c)

Verification: No later than sixty (60) days prior to any wastewater or storm water discharge or use of land treatment units, the project owner shall provide documentation to the CPM, with copies to the CRBRWQCB, demonstrating compliance with the WDRs established in Appendices B, C, and D. Any changes to the design, construction, or operation of the evaporation basins, land treatment

units, or storm water system shall be requested in writing to the CPM, with copies to the CRBRWQCB, and approved by the CPM, in consultation with the CRBRWQCB, prior to initiation of any changes. The project owner shall provide to the CPM, with copies to the CRBRWQCB, all monitoring reports required by the WDRs, and fully explain any violations, exceedances, enforcement actions, or corrective actions related to construction or operation of the evaporation basins, treatment units, or storm water system.

Septic System and Leach Field Requirements

SOIL&WATER-8: The project owner shall comply with the requirements of the County of Riverside Ordinance Code Title 8, Chapter 8.124 and the California Plumbing Code (California Code of Regulations Title 24, Part 5) regarding sanitary waste disposal facilities such as septic systems and leach fields. The septic system and leach fields shall be designed, operated, and maintained in a manner that ensures no deleterious impact to groundwater or surface water. Compliance shall include an engineering report on the septic system and leach field design, operation, maintenance, and loading impact to groundwater. If it is determined based on the engineering report that groundwater may be impacted, the project owner shall include a groundwater quality monitoring program. This program can utilize monitoring wells (if appropriate) used as part of groundwater monitoring in Condition of Certification **SOIL&WATER-7**. The engineering report will specify the proposed groundwater monitoring program (if required), constituents of concern, monitoring frequency and other elements as needed as part of any groundwater monitoring program.

Verification: The project owner shall submit all necessary information and the appropriate fee to the County of Riverside and the CRBRWQCB to ensure that the project has complied with county and state sanitary waste disposal facilities requirements. Written assessments prepared by the County of Riverside and the CRBRWQCB regarding the project's compliance with these requirements must be submitted to the CPM for review and approval thirty (30) days prior to the start of power plant operation.

GROUNDWATER PRODUCTION REPORTING

SOIL&WATER-9: The Project is subject to the requirement of Water Code Sections 4999 et. seq. for reporting of groundwater production in excess of 25 acre feet per year.

Verification: The project owner shall file an annual "Notice of Extraction and Diversion of Water" with the SWRCB in accordance with Water Code Sections 4999 et. seq. The Project Owner shall include a copy of the filing in the annual compliance report.

CLOSURE AND DECOMMISSIONING PLAN

SOIL&WATER-10: The project owner shall identify likely decommissioning scenarios and develop specific decommissioning plans for each scenario that will identify actions to be taken to avoid or mitigate long-term impacts related to water and wind erosion after decommissioning. Actions may include such measures as a decommissioning SWPPP, revegetation and restoration of disturbed areas, post-decommissioning maintenance, collection and disposal of project materials and chemicals, and access restrictions.

Verification: At least sixty (60) days prior to the start of site mobilization or alternate date as agreed to with BLM, the project owner shall submit decommissioning plans to the CPM for review and approval. The project owner shall amend these documents as necessary, with approval from the CPM, should the decommissioning scenario change in the future.

Revised Project Drainage Report AND PLANS

SOIL&WATER-11 The project owner shall provide a revised Drainage Report which includes the following additional information:

A. A detailed explanation of the large differences in pre- and post-project peak discharges and flood volumes along the downstream (east) Project boundary as currently indicated by the HEC-HMS results.
B. Pre- and post development drainage maps which include the following information:
    1. All topographic data used to establish the overall watershed boundaries as well as the sub-basin boundaries.
    2. A delineation of all onsite watersheds with basin areas, points of concentration, and peak discharge values where the smaller onsite channels discharge into the larger collector and conveyance channels.
    3. Calculations and summarized results for all onsite swales and onsite channels showing adequate depth and non-erosive velocities.
    4. A specific discussion of how the proposed onsite drainage design will protect the facility from erosion and the possible failure of the facilities resulting in a release of HTF.
    5. Peak flow values at all downstream points of discharge from the Project.
    6. Any other information needed to allow a correlation between the HEC-HMS model and the proposed drainage design.

C. Detailed scour calculations to justify toe-down depths for all soil cement segments, drop structures and any other features where scour is an issue.
D. Hydraulic analysis of all onsite and offsite channel confluences and a justification of whether or not soil cement or other suitable protection is required.

Verification: The project owner shall submit a Revised Project Drainage Report with the 30 percent Grading and Drainage Plans to the CPM for their review and comments sixty (60) days before project mobilization. The project owner shall address comments provided by the CPM until approval of the report is issued. All comments and concepts presented in the approved Revised Project Drainage Report with the 30 percent Grading and Drainage Plans shall be included in the final Grading and Drainage Plans. The Revised Project Drainage Report and 30 percent Grading and Drainage Plans shall be approved by the CPM.

Detailed FLO-2D Analysis

SOIL&WATER-12: The project owner shall provide a detailed hydraulic analysis utilizing FLO-2D which models pre- and post-development flood conditions for the 10-, 25- and 100-year storm events. The post-development model must include all proposed collector channels, end diffuser structures and berms. The methods and results of the analysis shall be fully documented in a Technical Memorandum or in the revised Project Drainage Report. Graphical output must include depth and velocity mapping as well as mapping which graphically shows the changes in both of these parameters between the pre- and post development conditions. Color shading schemes used for the mapping must be consistent between all maps as well as clear and easily differentiated between designated intervals for hydraulic parameters. Intervals to be used in the mapping are as follows:

- Flow Depth: at 0.20 ft intervals up to 1 ft, and 0.40 ft intervals thereafter.
- Velocity: 0.5 ft/s intervals

A set of figures shall be provided at a scale of no less than 1 in to 200 ft which show the extents and depths of flows entering the North, South and West channels for the 100-year event. A figure at the same scale shall also be provided for depth, velocity and the relative change in these parameters at and downstream of the four end diffuser structures for the 10-, 25- and 100-year events. Digital input and output files associated with the FLO-2D analysis must be included with all submittals. The results of this analysis shall be used for design of the 30 percent project grading and drainage plans.

Verification: The project owner shall submit a detailed FLO-2D analysis to the CPM for their review and comments with the 30 percent plan Grading and Drainage Plans and revised Project Drainage Report required in **SOIL&WATER-11**. The project owner shall address comments provided by the CPM until approval of the analysis is issued.

Drainage Channel Design

SOIL&WATER-13: All collector and conveyance channels shall be constructed consistent with Riverside County Flood Control and Water Conservation District (RCFCWCD) guidelines where applicable. Grade control structures shall be utilized where needed to meet channel velocity and Froude number requirements. Channels shall be sized along discreet sections based on the results of the detailed FLO-2D analysis described in **SOIL&WATER-12**. All grade control and drop structures shall have adequate toe-down to account for the design drop plus two additional feet to account for potential downcutting of the channel over time.

Channel confluence design must be given special consideration, especially as the preliminary Grading and Drainage Plans show 90 degree angles of confluence at nearly all locations. The issues of confluence hydraulics and potential scour shall be specifically addressed in the revised Drainage Report.

Offsite flows shall discharge directly into collector channels following the natural drainage patterns. The possible exception to this design approach is discussed in **SOIL&WATER-14** (F).

The proposed collector channel design must be fully documented in the Grading and Drainage plans and must include the following information:

A. Detailed and accurate cut/fill lines demonstrating in plan view how the channel would tie into existing grade and the solar facility.
B. Channel cross-sections at 200-foot intervals (or less as required to show all structures/configurations) showing the channel geometry, existing grade, proposed grade at the facility and how the channel would tie in at on both sides.
C. Detailed channel profiles showing existing and finished grades at channel flow line and left and right banks. All drop structures as well as the toe-of soil cement profile must also be shown and fully annotated. The 100-year water surface elevation will be provided on all profiles.
D. Typical sections and design details for all discreet channel sections, drop structures, channel confluences, flow dispersion structures and other relevant drainage features.

E. Consistent nomenclature and stationing on all plans, sections, profiles and details.

Verification: The project owner shall prepare preliminary, 30 percent channel design drawings and submit two copies for the CPM review and comment. The preliminary design drawings shall be submitted at the same time as the **Revised Project Drainage Report**, **SOIL&WATER-11** and FLO 2D Analysis in **SOIL&WATER-12**. The project owner will update and modify as necessary to obtain the CPM approval.

Channel Erosion Protection

SOIL&WATER–14: The project owner must provide revised preliminary Grading and Drainage Plans which incorporate the items and information as listed below for the channels designated as North, West, South, Southeast and Central on the existing plans (AECOM2010a).

A. Soil cement bank protection must be provided such that the channels are adequately protected from bank erosion and lateral headcutting. The extents of the proposed bank protection must be shown on the revised Grading and Drainage Plans. Typical sections for these channels must show the layout of the bank protection including thickness, width and toe-down location and depth consistent with the scour calculation provided in the revised Drainage Report.
B. Soil cement bank protection shall be provided on both channel banks wherever 10-year channel flow velocity exceeds 5 ft/s. It shall be provided on the outer channel bank wherever offsite topography and a detailed FLO-2D analysis indicate surface flow would enter the collector channels.
C. Soil cement bank protection shall be provided at all channel confluences of otherwise unlined channels where the result of the detailed hydraulic analysis presented in the revised Drainage Report indicate the increased potential for erosion due to adverse angles of confluence. Detailed plans for each confluence showing the extents of the soil cement based on specific hydraulic conditions shall be provided in the formal Grading and Drainage Plans.
D. Other methods of channel stabilization, such as dumped riprap or gabions, will not be permitted. Bio-stabilization measures are not permitted.
E. Earthen berms used on the outside of collector channels to guide flow to discreet points of discharge into a channel shall not be utilized in lieu of soil cement on the outside bank of collector channels. Offsite flows shall discharge directly into collector channels.

F. The possible exception to the requirements of **SOIL&WATER-13**(E) would be along the North Channel for a total distance of approximately 14,000 feet. Along this reach, earthen berms and channel drop inlets might be utilized as opposed to soil along the upstream face of the collector channels. The berms would start at a point approximately 4,825 feet east of the western property boundary (just east of the natural wash) and extend to a point approximately 18,710 feet east of the west property boundary (where the north collector channel bottom width transitions from 100 feet to 150 feet wide). The use of berms and channel drop inlets may be justified along this reach as available topography indicates that the predominate flow pattern is roughly parallel to the channel and that inflows would be minimal. This condition as well as the actual extents of where berms may be utilized will be based on the results of the post-development FLO-2D analysis.

   The use of unlined berms will require that the post-development FLO-2D analysis for the 100-year flow event demonstrate non-erosive flow velocities based on site specific soils characteristics. Lining of the outside of the berm with gunite or other approved material will be required along reaches where the 100-year flow velocities are shown to be erosive. In the absence of more specific data, 100-year flow velocities in excess of 5.0 ft/s will be considered erosive. Drop inlets must be fully protected from erosion, sized appropriately for the anticipated 100-year flow, and be designed for complete interception of the upstream flows to eliminate the potential for bypass flow to the subsequent downstream drop inlet structure. These structures must also to be fully protected from erosion and failure related to the 100-year discharge within the north collector channel.

G. The height of the proposed berms must be at least three feet and must provide a minimum of 1 foot of freeboard based on the flow depths determined in the post-development FLO-2D analysis. The maximum discharge to be collected at any single channel drop inlet should not be greater than 50 cfs based on the results of the post-development FLO-2D analysis.

H. Design and construction criteria for the use of soil cement on the site shall be prepared by the Owner/Developer's engineer in conjunction with the design methodology established by the Geotechnical Engineer of Record. The design and construction criteria shall be based on local and/or regional requirements and specifications. The design and construction criteria, the geotechnical design for the soil cement, the site specific specifications for the soil cement, the method of installation for the soil cement, and the local or regional standards being used for the design criteria shall be provided to the CPM for review and approval consistent with the verification requirements for this

Condition of Certification. The slope requirements that are proposed for use (3:1 or 4:1), and the associated method of installation (i.e., 8 inch lift versus slope application) shall be fully documented for review and approval by the CPM prior to any field installation of soil cement.

I. A soils report indicating the suitability of the Project soils for use in the production of soil cement to the Project specifications shall be submitted with the revised Grading and Drainage Plans.

J. The bottom of engineered collector channels may be left earthen or fully lined at the discretion of the engineer. Fully lined channels will have higher allowable velocities and Froude numbers assuming hydraulic jumps are modeled and considered in the channel design.

K. If modifications to the existing drainages to allow construction of and future access to linear facilities require stabilization of the channel in the vicinity of those modifications, location of disturbance to the existing drainages shall be stabilized consistent with best engineering practice to eliminate future negative impacts to those drainages upstream and downstream of the linear facility in the form of downcutting, erosion and headcutting. The use of "non-engineered" culvert crossings shall not be allowed. All structures to be utilized in existing drainages along linear facilities shall be documented in the project drainage report and reflected in the project improvement plans. Channel erosion mitigation measures along linear facilities shall be subject to all the requirements of this Condition of Certification where applicable.

Verification: The required information and criteria shall be incorporated into the Grading and Drainage Plans and with all subsequent submittals as required in **SOIL&WATER-11** and **SOIL&WATER-12**. The project owner shall address all comments by the CPM related to the channel erosion protection design through final plan approval.

Channel Maintenance Program

SOIL&WATER-15: The project owner shall develop and implement a Channel Maintenance Program that provides long-term guidance to implement routine channel maintenance projects and comply with conditions of certification in a feasible and environmentally-sensitive manner. The Channel Maintenance Program will be a process and policy document prepared by the Project owner, reviewed and approved by the CPM. The Channel Maintenance Program shall include the following:

A. **Purpose and Objectives** – Establishes the main goals of the Program, of indefinite length, to maintain the diversion channel to meet its original design to provide flood protection, support Project

mitigation, protect wildlife habitat and movement/ migration, and maintain groundwater recharge.

B. **Application and Use** - The channel maintenance work area is defined as the BSPP engineered channel, typically extending to the top of bank, include access roads, and any adjacent property that the Project owns or holds an easement for access and maintenance. The Program shall include all channel maintenance as needed to protect the Project facilities and downstream property owners.

C. **Channel Maintenance Activities**
   1. **Sediment Removal** - sediment is removed when it: (1) reduces the diversion channel effective flood capacity, to less than the design discharge, (2) prevents appurtenant hydraulic structures from functioning as intended, and (3) becomes a permanent, non-erodible barrier to instream flows.
   2. **Vegetation Management** - Vegetation management shall include control of invasive or nonnative vegetation as prescribed in Condition of Certification **BIO-14**.
   3. **Bank Protection and Grade Control Repairs** – Bank protection and grade control structure repairs involve any action by the Project owner to repair eroding banks, incising toes, scoured channel beds, as well as preventative erosion protection. The Project owner shall implement instream repairs when the problem: (1) causes or could cause significant damage to the Project; adjacent property, or the structural elements of the diversion channel; (2) is a public safety concern; (3) negatively affects groundwater recharge; or (4) negatively affects the mitigation vegetation, habitat, or species of concern.
   4. **Routine Channel Maintenance** - trash removal and associated debris to maintain channel design capacity; repair and installation of fences, gates and signs; grading and other repairs to restore the original contour of access roads and levees (if applicable); and removal of flow obstructions at Project storm drain outfalls.
   5. **Channel Maintenance Program –** Exclusions including: emergency repair and CIP.

D. **Related Programmatic Documentation** – the CPM will review and approve the Channel Maintenance Program programmatic documentation. Maintenance activities shall comply with the streambed alteration agreement provisions and requirements for channel maintenance activities consistent with California's endangered species protection regulations and other applicable regulations.

E. **Channel Maintenance Process Overview**
   1. **Program Development and Documentation** – This documentation provides the permitting requirements for channel

maintenance work in accordance with the conditions of certification for individual routine maintenance of the engineered channel without having to perform separate CEQA/NEPA review or obtain permits.

2. **Maintenance Guidelines** - based on two concepts: (1) the maintenance standard and (2) the acceptable maintenance condition, and applies to sediment removal, vegetation management, trash and debris collection, blockage removal, fence repairs, and access road maintenance.
3. **Implementation** – Sets Maintenance Guidelines for vegetation and sediment management. The Project's vegetation management activities are established in Condition of Certification **BIO-14**. Maintenance Guidelines for sediment removal provide information on the allowable depth of sediment for the engineered channel that would continue to provide design discharge protection.
4. **Reporting** – the CPM requires the following reports to be submitted each year as part of the Annual Compliance Report:
   a. Channel Maintenance Work Plan - Describes the planned "major" maintenance activities and extent of work to be accomplished; and
   b. Channel Maintenance Program Annual Report – Specifies which maintenance activities were completed during the year including type of work, location, and measure of the activity (e.g. cubic yards of sediment removed).
   c. A report describing "Lessons Learned" to evaluate the effectiveness of both resource protection and maintenance methods used throughout the year.

F. **Resource Protection Policies** - establishes policies to ensure that **resources** would be protected to the fullest extent feasible during routine channel maintenance activities. Policies shall be developed to guide decision-making for channel maintenance activities. BMPs shall be developed to implement these policies.

Verification: At least sixty (60) days prior to the start of any project-related site disturbance activities (excluding linear construction), the project owner shall coordinate with the CPM to develop the Channel Maintenance Program. The project owner shall submit two copies of the programmatic documentation, describing the proposed Channel Maintenance Program, to the CPM (for review and approval). The project owner shall provide written notification that they plan to adopt and implement the measures identified in the approved Channel Maintenance Program. The project owner shall:

a. Supervise the implementation of a Channel Maintenance Program in accordance with conditions of certification;

b. Ensure the Project Construction and Operation Managers receive training on the Channel Maintenance Program; and
c. As part of the Project Annual Compliance Report to the CPM, submit a Channel Maintenance Program Annual Report specifying which maintenance activities were completed during the year including type of work, location, and measure of the activity (e.g. cubic yards of sediment removed).

ESTIMATION OF SURFACE WATER IMPACTS

SOIL&WATER-16: To further assess the impacts from Project pumping, the project owner shall estimate the increase in discharge from surface water to groundwater that affects recharge from the Palo Verde Valley Groundwater Basin (USGS) to the Palo Verde Mesa Groundwater Basin (USGS). This estimate may be used for determining the appropriate offset volume in accordance with **SOIL&WATER-2**. The project owner shall do the following to provide an estimate for review and approval by the CPM:

1. The project owner shall conduct a detailed analysis of the contribution of surface water to the PVMGB from the Project's groundwater extraction activities at the end of the 30 year operational period. The detailed analysis shall include:
   a. The conceptual model developed in the AFC and the Staff Assessment, and any changes resultant from further analysis in support of numerical modeling;
   b. The use of an appropriately calibrated and constructed groundwater flow model of the Palo Verde Valley and Palo Verde Mesa Groundwater Basin, inclusive of the Mesa and floodplain shall include:
      i. Horizontal and vertical geometry information gained through on- and offsite investigations conducted as part of the hydrogeological field investigations for the AFC, and any subsequently documented investigation performed as part of the model development ;
      ii. Aquifer properties developed as part of the AFC and any subsequently documented investigations performed as part of the model development, and an assessment of aquifer properties available from other published sources. The properties used shall be representative of the available data, and will be used in calibration of the flow model under ASTM standards and methods.; and
      iii. The modeling effort shall include a sensitivity analysis where in the most sensitive

variables will be identified and varied within a reasonable range outside of the calibration value to provide an assessment of the range of potential impacts from the Project pumping on the recharge from the Palo Verde Valley Groundwater Basin to the Palo Verde Mesa Groundwater Basin.

   c. Reporting of the results of the modeling effort
   d. Estimation of the increased contribution of surface water discharge to groundwater and the change in recharge to the Palo Verde Mesa Groundwater Basin attributable to Project groundwater pumping.
2. The analysis shall include the following elements:
   a. The change in groundwater flux to the regional aquifer from surface water sources attributable to Project pumping in afy for the life of the Project (30 years) until pre-project (within 95%) conditions are achieved;
   b. A sensitivity analysis that would provide a range in the potential changes in flux relative to variation in the key model variables as a result of Project pumping for life of the Project until pre-project (within 95%) conditions are achieved;
3. The project owner shall present the results of the conceptual model, numerical model, transient runs and sensitivity analysis in a report for review and approval by the CPM. The report shall include all pertinent information regarding the development of the numerical models. The report shall include:
   a. Introduction
   b. Previous Investigations
   c. Conceptual Model
   d. Numerical Model and Input Parameters
   e. Sensitivity Analysis
   f. Transient Modeling Runs
   g. Conclusions

Verification: Within thirty (30) days following certification of the proposed Project, the project owner shall submit to the CPM for their review and approval a report detailing the results of the modeling effort. The report shall include the estimated amount of subsurface water flowing from the surface water due to project pumping. This estimate shall be used for determining the appropriate volume of water for mitigation in accordance with **SOIL&WATER-2**.

SOIL&WATER-17: DELETED.

Non-TRANSIENT, NON-COMMUNITY WATER SYSTEM

SOIL&WATER-18: The Project is subject to the requirement of Title 22, Article 3, Sections 64400.80 through 64445 for a non-transient, non-community water system (serving 25 people or more for more than six months). In addition, the system shall require periodic monitoring for various bacteriological, inorganic and organic constituents.

Verification: The project owner shall submit the equivalent County of Riverside requirements to operate a non-transient, non-community water system at least sixty (60) days prior to commencement of operations at the site. The requirements will be in accordance with the County of Riverside requirements for a non-transient, non-community water system. In addition, the Project Owner shall submit to the CPM a monitoring and reporting plan for production wells operated as part of the domestic water supply system prior to plant operations. The plan shall include reporting requirements including monthly, quarterly and annual submissions.

The project owner shall designate a California Certified Water Treatment Plant Operator as well as the technical, managerial and financial requirements as prescribed by State law. The project owner shall supply updates on an annual basis of monitoring requirements, any required submittals equivalent to the County of Riverside requirements including annual renewal requirements.

C. CULTURAL RESOURCES

This section addresses the cultural resources associated with the Blythe Solar Power Project (BSPP), including potential impacts related to Project construction, operation and decommissioning. The potential for impacts to cultural resources depends upon whether such resources are present and whether they would actually be encountered during project development and construction activities. Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. Analysis in this topic area pertains to the structural and cultural evidence of human development in the project vicinity, as well as appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

Cultural resources are categorized as buildings, sites, structures, objects, and districts under both federal law [for the purposes of the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA), § 106] and under California state law [for the purposes of the California Environmental Quality Act (CEQA)]. Three kinds of cultural resources, classified by their origins, are considered in this assessment: prehistoric, ethnographic, and historic.

When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Res. Code, § 5024.1; Cal. Code Regs., tit. 14, § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under California Environmental Quality (CEQA) (*see* Pub. Res. Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

The CEQA Guidelines provide a definition of a historical resource as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR," or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a

lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." [Cal. Code Regs., tit. 14, § 15064.5(a).] Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward. [Pub. Res. Code, § 5024.1(d).]

Under the CEQA Guidelines, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one of the following four criteria: it is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, it is associated with the lives of persons significant in our past (Criterion 2); or, that the resource embodies the distinctive characteristics of a type, period, or method of construction, or that it represents the work of a master, or possesses high artistic values (Criterion 3); or, that it has yielded, or may be likely to yield, information important to history or prehistory (Criterion 4). (Pub. Res. Code § 5024.1.) In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (Cal. Code Regs., tit. 14, § 4852(c); Pub. Res. Code § 5020.1 (j) or 5024.1). Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource.

The California Historical Resources Information System (CHRIS) cultural resources data system has a number of records for cultural sites in and around the BSPP Project Area of Analysis (PAA); these records have been confirmed and augmented by applicant field surveys which staff has reviewed.

Staff has identified three areas in/around the BSPP site, each of which have resources potentially eligible for CA or National Historic Register nomination:

- Prehistoric Trails Network Cultural Landscape
- Prehistoric Quarry Archaeological District
- Desert Training Center Cultural Landscape (one of General Patton's WWII training areas)

Given the American Recovery and Reinvestment Act (ARRA) deadlines, Commission and BLM staff have not had time to provide a detailed evaluation of each resource potentially eligible for historic register nomination. If the project is approved, staff will evaluate the resources during the pre-construction phase according to protocols established by the Conditions of Certification and Cultural Resources Programmatic Agreement. There are unknown resources at the site which will be permanently changed and/or destroyed during construction. Therefore, we have concluded that BSPP will result in potentially significant impacts to cultural resources. The mitigation measures we adopt herein will reduce most of the impacts to less than significant. Cumulative impacts will remain because multiple projects proposed in the I-10 region will affect significant cultural landscapes.

We have determined that overriding considerations warrant acceptance of these impacts. We have included a Statement of Overriding Considerations elsewhere in this Decision in support of that determination.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting and Historical Background

The proposed Blythe Solar Power Project (BSPP) would be located approximately two miles to the north of Interstate 10 (I-10), 8 miles west of Blythe, California. The footprint of the proposed project is 5,950 acres, while the total disturbance area, including linear facilities and drainage channels, is 7,043 acres. The land occupied by the plant site would be entirely public land, managed by the Bureau of Land Management, except for three private in-holdings totaling 320 acres (Ex. 203, p. C.3-6)

The proposed site is located in the northeastern corner of the Colorado Desert Geomorphic Province, which includes the Salton Sea and the Imperial Valley to the south and the Coachella Valley to the north. The region consists of broad, low-elevation basins, filled with alluvium, separated by isolated mountain ranges. The sources of the alluvium in these basins are the local mountain ranges and, on the east, the Colorado River, whose flood plain forms the eastern edge of the province. The proposed BSPP site is on the Palo Verde Mesa, west of and above the Colorado River flood plain. The mesa is a large, gradually sloping abandoned alluvial terrace of the Colorado River. The BSPP site elevation ranges between 670 feet above mean sea level on the west and 420 feet above mean sea level on the east. The site slopes gently from the west to the southeast, with a gradient

of less than 1 percent. The Palo Verde Mesa is bounded by the McCoy Mountains to the west, the Little Maria Mountains to the northwest, the Big Maria Mountains to the northeast, and the Palo Verde Valley to the east and southeast (Exs. 1, section 5.4.2.1; 203, pp. C.3-5 to C.3-6.)

The proposed BSPP plant would consist of four fields of trough-type solar collectors, with a power block in each field. Each field would produce a nominal 250 megawatts (MW) of solar thermal-generated electricity, for a plant total of 1,000 MW.

Each power block would include:

- a steam turbine generator;
- a natural gas-fired auxiliary boiler;
- a generator step-up transformer;
- a 500-kV switchyard, a heat transfer fluid (HTF) system (including a HTF freeze-protection heat exchanger);
- an air-cooled condenser;
- two groundwater wells;
- water treatment facilities;
- a service/fire water storage tank;
- two 4-acre, 9-foot-deep evaporation ponds;
- a septic system and leach field; and
- an operations and maintenance building.

All four units would share:

- perimeter fencing (8-foot tall chain-link security fencing along the north and south sides of the plant and 30-foot tall wind fencing, comprised of A-frames and wire mesh, along the east and west sides of each solar field);
- an access road;
- an office building with parking (and a septic system with a leach field);
- a central switchyard;
- a warehouse/maintenance facility (with two additional groundwater wells and a septic system with a leach field); and
- bioremediation units (totaling 16 acres in size) for the treatment of HTF-contaminated soil.

Off-site, the project would construct:

- a stormwater diversion and drainage system, to be constructed in two phases;
- a paved access road from I-10, including a new road construction and the paving of about 1 mile of the extant Black Rock Road, currently unpaved;
- a new twisted-pair telecommunications cable for voice and data communications and a redundant telecommunications line from the project to the Colorado River Substation in a route adjacent to Black Rock Road and the site access road;
- an approximately 10-mile-long, double-circuit, 230-kV, overhead gen-tie transmission line supported on monopole steel structures, connecting to Southern California Edison's (SCE) regional transmission system at its planned Colorado River Substation, with an associated 15-foot-wide, permanent maintenance road;
- a 9.8-mile-long , 4-inch-diameter natural gas pipeline that would connect to an existing Southern California Gas Company line south of I-10.

As temporary construction facilities, the project would build:

- a movable on-site concrete batch plant to provide concrete for the solar fields and power block foundations and pads;
- an on-site fuel depot to refuel, maintain, and wash construction vehicles; and
- a 12.47-kV power line running to the site from Southern California Edison's distribution poles 1 mile east of BSPP, and an internal power distribution system and step down transformers to provide power to construction operations.

(Ex. 203, pp. C.3-6 to C.3-8)

Human populations have occupied the California desert for at least 10,000 years. The Paleo-Indian Period (about 10,000–8000 BC) occurred during the first half of the Early Holocene. Isolated fluted projectile points have been recovered from the Pinto Basin, Ocotillo Wells, Cuyamaca Pass, and the Yuha Desert. The Lake Mojave Complex (8000-6000 BC) occurred during the second half of the Early Holocene and is characterized by Great Basin Stemmed Series projectile points (Lake Mojave and Silver Lake types), abundant bifaces, steep-edged unifaces, crescents, and occasional cobble tools and ground stone tools. The Pinto Complex (8000-3000 BC) spans portions of the Early and Middle Holocene. Toolstone use, based on sites attributed to this complex, focus upon materials

other than obsidian and cryptocrystalline silicate. Beginning roughly in 3000 to 2000 BC, conditions in the Mojave Desert were warmer and drier and few archaeological sites date to this period. This suggests population densities were very low and it is possible some areas were largely abandoned. The Gypsum complex (2000 BC–200 AD), spanning most of the Early Late Holocene, is characterized by the presence of corner-notched Elko Series points, concave-base Humboldt Series points, and well-shouldered contracting-stemmed Gypsum Series points. During the Rosespring Complex (200 AD – 1000 AD), cultural systems profoundly changed in the southern California deserts with the introduction of the bow and arrow. During this time, a major increase in population is thought to have occurred, possibly resulting from a more productive environment and a more efficient hunting technology. During the Late Prehistoric Period (1000 AD–1700 AD), horticultural practices and pottery were introduced (most likely from the Hohokam area in southern Arizona or from northern Mexico), having its greatest impact along the Lower Colorado River. A complex cultural landscape composed of rock art and trails was developed during the Late Prehistoric period. (Exs. 1, § 5.4.2.2; 203, pp. C.3-10 to C.3-13.)

Within the Chuckwalla Valley, prehistoric sites are clustered around springs, wells, and other obvious important features or resources. Sites include villages with cemeteries, occupation sites with and without pottery, large and small concentrations of ceramic sherds and flaked stone tools, rock art sites, rock shelters with perishable items, rock rings/stone circles, intaglios and cleared areas, and a vast network of trails, trail segments, markers and shrines, and quarry sites. Possible village locations are present at Palen Lake, Granite Well, and Hayfield Canyon.

A cluster of temporary habitation and special activity (task) sites occurs around a quarry workshop in the Chuckwalla Valley. The Chuckwalla Valley quarry workshop complex probably was used throughout the Holocene. During this period, Chuckwalla Valley most likely was occupied, abandoned, and reoccupied by a succession of ethnic groups. In the Early Holocene (i.e., Lake Mohave complex times), the area may have been relatively densely inhabited. During the Middle Holocene (i.e., Pinto and Gypsum complexes period) it only may have been sporadically visited. The subsequent Late Holocene Rose Spring and Late Prehistoric periods probably witnessed reoccupation of the valley by Yuman and Numic-speaking peoples. (Ex. 203, p. C.3-14.)

Currently, it is unclear which historic Native American group or groups occupied or used the region in which the proposed project site is located, but the

Chemehuevi, Serrano, Cahuilla, Mojave, Quechan, Maricopa, and Halchidhoma are the most likely. The record indicates that the Chuckwalla Valley was not clearly assigned to any Native American group on maps depicting group territories. The west end of the Chuckwalla Valley was near the intersecting boundaries of Cahuilla-Serrano-Chemehuevi territory. Possibly before 800 BC, the Chemehuevi may have expanded into Serrano territory, occupying the Chuckwalla Valley. No evidence suggested that the Cahuilla occupied the area. Given its east-west orientation and location, however, the Chuckwalla Valley may have been neutral territory, occupied by no Native American group in particular, which served as an east-west trade and travel route. (Ex. 203, p. C.3-16.)

The Colorado Desert area, in which the Blythe Solar Power Project (BSPP) is located, has remained one of the more sparsely populated regions of the American West. The harsh arid environment and paucity of natural water supply has presented a challenge to the development of trans-desert routes for the movement of people and goods, the exploitation of resources in the area, and the establishment of permanent settlement. The major historical themes for the Colorado Desert region and the BSPP area in eastern Riverside County, in particular, are centered on the establishment of transportation routes, water access and control, mineral exploitation, and military uses. (Ex. 203, p. C.3-27.)

The earliest recorded history of the lower Colorado River region began with the expeditions of Spanish explorers, who were lured by rumors of a rich northern Indian civilization. However, due to the Spaniards' failure to find the fabled northern treasures and the remoteness of the region, the Colorado Desert was seldom visited during the Spanish and Mexican periods.

The desert region has produced a variety of mineral deposits, including gold, silver, fluorite, manganese, copper, gypsum, and uranium, and mining activities played a significant role in stimulating early occupation and travel across the arid desert. Following the end of the Mexican period in 1848 and the onset of the California Gold Rush in 1849, a flood of gold-seeking emigrants began to pour into California, some choosing the southern overland route through the desert, many of whom were unprepared and suffered extreme hardships. The construction and expansion of the Southern Pacific Railroad into the desert in the late 1870s was a major factor in facilitating travel and transport of supplies to the remote areas of eastern Riverside County, enabling further development of mines, irrigation, and settlement in the area.

The 1880s and 1890s were years of relative prosperity for mining regions of eastern Riverside County. Intermittent mining activity has occurred in the area since that time; however, in the Palo Verde Valley area, mining has remained a relatively small part of the local economy. While no mines or significant prospects exist within the BSPP area, evidence of past mining activity in the region is evidenced by a scattering of abandoned prospecting pits, collections of food trash and other debris, and a handful of prospect claim markers in the form of wooden stakes, small stone cairns, and metal cans, which may have originally contained claim papers.

Automobile travel across and within the Colorado Desert area initially developed using existing wagon roads or following railroad rights of way. By the early twentieth century, the automobile became the preferred mode of transportation. In 1914, Riverside County established the route from Mecca to Blythe as an official County road, which served as a main route across the desert. County officials dug wells and erected signposts along this road to serve its few travelers. In the early 1920s, Highway 60 was built to the south of the original route through Shavers Valley and Chuckwalla Valley. In the 1960s, the current Interstate Highway 10 was constructed along the old route of Highway 60. With the arrival of roads, settlement patterns changed from occasional miner's camps to roadside businesses serving travelers.

With the passage of the Homestead Act in 1862, vast areas of public land were opened up to private citizens, and agriculture became an economically important industry in California. Although much of the desert lands were poorly suited to farming, the Palo Verde Valley of the lower Colorado River was an exception. Thomas H. Blythe, who is known as "the father of the Palo Verde Valley," was the first to develop large tracts of land along the west bank of the Colorado River, across from the established portage point at Ehrenberg, Arizona, near the present-day town of Blythe. Blythe died in 1883 before his development could be fully completed, but agricultural practices had already begun to take place and continued to be developed in the area. The town of Blythe was incorporated in 1916. By the late 1920s, the Palo Verde Irrigation District Act was passed, and the region's irrigation and drainage needs were facilitated by one district. Farming continues to be a commercial industry in Blythe. On the Palo Verde Mesa, however, in the vicinity of the BSPP, agriculture was never a significant pursuit due to the poor soils and lack of readily accessible water. In the early twentieth century, some ranching activities were attempted on the mesa, as evidenced by ranch remains identified during the inventory of the BSPP area.

The BSPP area falls within the limits of Gen. George S. Patton's World War II Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA), which was in operation from 1942-1944. The area was chosen by Patton to prepare troops for the harsh conditions and environment of combat for the North Africa Campaign. At 12,000,000 acres, the DTC/C-AMA was the largest-ever military training center, stretching from west of Pomona, California, to Yuma, Arizona, and north into Nevada. The valley bordered by the Palen, Little Maria, and McCoy Mountains is considered one of the most extensive maneuver areas in the DTC/C-AMA. After two years in operation and the training of one million troops, the DTC/C-AMA was closed in 1944 as a result of the allied victory in North Africa and the need for trained troops elsewhere. Following the closure of the DTC/C-AMA, dismantling and salvage efforts began and the land was ultimately returned to private and government holdings. The remains of the DTC/C-AMA areas consist of rock features, faint roads, structural features, concertina wire, tank tracks, footprints of runway and landing strips, foxholes and bivouacs, concrete defensive positions, refuse, and trails.
(Exs.1, § 5.4.2.4; 203, pp. C.3-28 to C.3-29.)

2. Cultural Resources

The California Historical Resources Information System, or CHRIS, is a federation of 11 independent cultural resources data repositories overseen by the California State Office of Historic Preservation. These centers are located around the state, and each holds information about the cultural resources of several surrounding counties. Qualified cultural resources specialists obtain data on known resources from these centers and in turn submit new data from their ongoing research to the centers.

Under the Bureau of Land Management's (BLM) protocol for inventory-level cultural resources investigations on lands for which a Right-of-Way (ROW) grant has been requested, the applicant undertakes a Class I survey. This is a preliminary gathering of data for known sites and other resources from published and unpublished documents, records, files, registers, and other sources, and is intended to produce an analysis and synthesis of all reasonably available data. A Class I survey encompasses prehistoric, historic, and ethnological/sociological elements and essentially chronicles past land uses.

For Palo Verde 1's Class I survey of the proposed BSPP, intended to compile information on known cultural resources and previously conducted cultural resources studies pertinent to the location of the proposed BSPP, the applicant's

cultural resources consultant, AECOM, conducted records searches at the Eastern Information Center (EIC, part of the CHRIS) at the University of California, Riverside. Searches conducted on February 11, 2009, and October 15, 2009, were for the area within a 1.0-mile radius of the proposed plant site and within a 0.25-mile radius of the routes of all proposed linear facilities.

Additionally, AECOM searched the following sources to identify other known cultural resources:

- National Register of Historic Places (NRHP)
- California Register of Historical Resources (CRHR)
- Local listings
- BLM site files

(Exs. 1, section 5.4.2.5; 203, pp. C.3-30 to C.3-31.)

AECOM obtained from the EIC 26 reports of previous investigations covering parts of the area within a 0.1-mile radius of all BSPP components. Ten of these were cultural resources survey reports covering parts of the BSPP Project Area of Analysis (PAA) (King et al.1973, Greenwood 1977, Cowan and Wallof 1977, BLM 1978, Reed 1984, Wilson 1984, Padon et al. 1990, McDonald and Schaefer 1998, McDougall et al. 2006, and Schaefer et al. 1998). One study was a records search (Schaefer 2003), one reported site sampling and evaluation (Mitchell 1989), and one was a regional overview (Von Till Warren et al. 1980). The surveys covered only small areas of the proposed BSPP PAA, so the most pertinent of the 13 studies to the BSPP cultural resources assessment are the regional overview by Von Till Warren et al. (1980) and the sampling and evaluation of prehistoric quarry sites by Mitchell (1989).

The overview depicts a region of archaeological resources that, for both the prehistoric and historic periods, represent primarily transportation and resource exploitation. In this landscape, people have mostly left remains of being in transit or of extracting useful or valuable materials—Native Americans sought and removed food, tool-stones, and other raw materials for manufacturing, and Euro-Americans sought and removed various minerals or grazed their livestock. The trails and roads that cross the BSPP PAA either took people across the region or went to the places where the desired resources were found (Von Till Warren et al. 1980). An important exception to this generality is the use of the region by the U.S. military for training on a large scale, both early in World War II and just prior to involvement in Vietnam.

The BLM archaeologist who sampled and evaluated ancient Colorado River pebble terraces (two of which could be impacted by the proposed BSPP plant site) explored Native American extractive behavior at several sites recognized as prehistoric quarries. He analyzed Native American behavior in assaying, roughly preparing, and collecting material appropriate for the manufacture of stone tools elsewhere. Additionally the study identified other nearby sites indicative of other aspects of toolstone acquisition behavior, such as temporary habitation sites. The study also evaluated the NRHP eligibility of the terrace quarries and their integrity, which has suffered in the twentieth century from the removal, sometimes mechanized, of the water-rounded rocks for use in masonry and landscaping—another desert extractive activity (Mitchell 1989).

AECOM obtained from the EIC 71 records of previously known cultural resources located within a 1.0-mile radius of the PAA, including:

- 4 prehistoric trail segments, 1 with an associated lithic scatter
- 1 prehistoric rock alignment
- 1 prehistoric geoglyph
- 7 prehistoric quarries, 1 with an associated lithic scatter
- 2 prehistoric cleared areas, both with associated lithic scatters, and1 with a trail segment
- 1 prehistoric temporary camp
- 6 prehistoric ceramic sherd scatters
- 16 prehistoric lithic scatters
- 1 prehistoric fire-affected rock feature
- 1 prehistoric lithic and ceramic sherd scatter
- 1 historic-period two-track road
- 1 historic-period refuse deposit, with structural remains
- 2 historic-period military camps, with tent platforms, animal enclosures, and refuse deposits
- 9 historic-period refuse deposits
- 18 isolated finds (10 prehistoric and 8 historic-period).

Eight of these previously known resources were located within or near the boundary of the proposed BSPP. Seven of these resources were prehistoric or historic-period archaeological sites, and one was a prehistoric isolated find. Two of the prehistoric sites were located on a private property in-holding within the proposed plant site. When relocated in 2009, one of the latter (CA-Riv-1464), recorded in 1978 as a prehistoric trail segment, was found to have been replaced by a graded road. So, either this resource, which ran along the in-holding

boundary, had never been a prehistoric trail, or any prehistoric trail that had been there was now destroyed. Consequently, staff has not included this resource in the inventory. As is common practice in cultural resources management, staff has eliminated the isolated finds from consideration, but has listed the other six known sites (CA-Riv-1136, CA-Riv-2846, CA-Riv-3419, CA-Riv-7175, CA-Riv-9011, and P-33-9670) in Table 2, with all newly identified archaeological sites, as resources located within the BSPP PAAs. Staff has included in that list the other resource located on the private in-holding because it is staff's understanding that the BSPP applicant is negotiating the purchase of the in-holding and so could have eventual responsibility for the site.

Detailed resource-specific information needed by staff may entail primary and secondary research in various archives and libraries, holding such sources as historic aerial photography, historic maps, city directories, and assessors' records. The applicant may include archival information as part of the information provided to staff in the AFC or may undertake such research to respond to staff's data requests. Staff may also undertake such research to supplement information provided by the applicant.

To identify any sites or structures older than 45 years, AECOM reviewed historic maps which could be referenced on-line, dating between 1903 and 1983. They also visited the General Patton Memorial Museum on April 30, 2009, and the Palo Verde Historical Museum and Society on May 4–5, 2009. They also visited the Palo Verde Irrigation District where they reviewed historic aerial photographs from 1938, 1942, 1951, 1953, 1959, 1960, 1965, 1970, 1973, 1992, and 1994, and also examined additional historic maps. (Ex. 1, § 5.4.2.6)

California counties and cities may recognize particular cultural resources as locally historically important by ordinance, in general plans, or by maintaining specific lists. Local archaeological and historical organizations may also maintain lists of historically important resources. To facilitate the environmental review of their projects, applicants acquire information on locally recognized cultural resources specific to the vicinity of their project by consulting local planning agencies and local historical and archaeological societies.

On June 1, 2009, AECOM contacted various public agencies and historical and archaeological societies requesting information regarding historic or other cultural resources within or adjacent to the BSPP:

- Riverside County Historical Commission;
- General Patton Memorial Museum;

- Historic Resources Management Programs, University of California, Riverside;
- Palm Springs Air Museum;
- Palm Springs Historical Society;
- Palo Verde Historical Museum and Society.
- The Native American Heritage Commission (NAHC).

(Ex. 1, § 5.4.2.6.)

The Native American Heritage Commission (NAHC) maintains two databases to assist cultural resources specialists in identifying cultural resources of concern to California Native Americans, referred to by Staff as Native American ethnographic resources. The NAHC's Sacred Lands database has records for places and objects that Native Americans consider sacred or otherwise important, such as cemeteries and gathering places for traditional foods and materials. The NAHC Contacts database has the names and contact information for individuals, representing a group or themselves, who have expressed an interest in being contacted about development projects in specified areas.

On April 13, 2009, AECOM asked the Native American Heritage Commission (NAHC) to search its Sacred Lands File for any Native American traditional cultural properties and to send to the applicant a list of Native Americans who had heritage ties to Riverside County and wanted to be informed about new development projects there. The NAHC responded on April 20, 2009, indicating a negative return from the search of their Sacred Lands File, but cautioning that many Native American cultural resources were known for the project area. The NAHC also provided contact information for 15 Native American individuals or groups, representing the Cahuilla, the Serrano, the Chemehuevi, the Mojave, and the Luiseño. The applicant sent letters to these persons on May 1, 2009, describing the proposed BSPP and requesting information on known cultural resources that could be affected by the project, and at various later dates AECOM made follow-up contact by telephone calls, faxes, and emails. Upon the recommendation of one of their initial contacts, AECOM also contacted a representative of the Cocopah on August 14, 2009 (Exs.1, § 5.4.2.7; 203, p. C.3-34).

With the filing of the application for a ROW, the BLM took the lead in formal, government-to-government tribal consultation pursuant to the NHPA as well as other laws and regulations. The NAHC was contacted by letter about the project, and they provided a list of Native American contacts. BLM then initiated Section

106 consultation in the early stages of project planning by letter to the Agua Caliente Band of Cahuilla Indians and informational copies to 12 other Native Americans groups on November 23, 2009. The letter noted the *Federal Register* publication of the Notice of Intent (NOI) for the proposed project, stating that in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Federal Land Policy and Management Act of 1976, as amended, the BLM Palm Springs-South Coast Field Office, together with the Energy Commission, intend to prepare an Environmental Impact Statement (EIS) and Staff Assessment (SA), which may also include an amendment to the California Desert Conservation Area (CDCA) Plan (1980, as amended) for BSPP. In this same notice the BLM announced its intention to use the NEPA commenting process to satisfy the public [and Native American] involvement process for Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) as provided for in 36 CFR 800.2(d)(3). Publication of the NOI initiated the scoping process to solicit public comments and identify issues (BLM 2009a). The BLM has followed up with an additional letter and other information since then. BLM has identified and invited to consult on this project 13 tribes or related entities, including those listed below. Tribes were also invited to a general information meeting and proposed project site visit, held on January 25, 2010. (Ex. 203, p. C.3-36.)

On February 10, 2010, the BLM Palm Springs Field Office Manager, John Kalish, and Palm Springs Field Office Archaeologist George Kline met with the Ft. Yuma Quechan Tribal Council. They provided information on several solar energy projects, including the BSPP, and answered questions. Communications have been ongoing among concerned parties since the early planning efforts in the summer of 2009, and consultation will continue throughout the process. Letters to request consultation to develop a PA with tribes, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation were mailed out to the below-listed tribes on February 25, 2010:

- Cabazon Band of Mission Indians
- Augustine Band of Cahuilla Mission Indians
- Agua Caliente Band of Cahuilla Indians Tribal Historic Preservation Officer
- Morongo Band of Mission Indians
- Chemehuevi Reservation
- Colorado River Reservation
- Fort Mojave Indian Tribe
- Colorado River Indian Tribes

- Cocopah Tribal Council
- San Manuel Band of Mission Indians
- Ft. Yuma Quechan Indian Tribe
- Torres-Martinez Desert Cahuilla Indians
- Twentynine Palms Band of Mission Indians

In a February 8, 2010 e-mail to Allison Shaffer of the BLM's Palm Springs Field Office, Patti Pinon, Chairperson of the La Cuna de Aztlan Sacred Sites Protection Circle, expressed concern that the proposed BSPP would be constructed on a Kokopelli geoglyph and numerous other images and ancient trails that lead to other geoglyphs a few miles away. The BLM Palm Springs Field Office archaeologist forwarded this email to Energy Commission staff. (Ex. 203, p. C.3-37.)

The BLM Palm Springs Field Office archaeologist provided Energy Commission staff with a Google Earth location for the Kokopelli geoglyph and another nearby geoglyph identified as Cicimitl.[47] It appeared to staff that the two geoglyphs were located within the BSPP PAA for ethnographic resources. In the SA/DEIS, staff considered the two geoglyphs as potential cultural resources subject to impacts from the BSPP.

The BLM Palm Springs Field Office Field Manager and archaeologist met with Alfredo Acosta Figueroa and other representatives of the La Cuna de Aztlan Sacred Sites Protection Circle on March 2, 2010, to view the two geoglyphs and some other sacred sites identified by Mr. Figueroa, including the Creator's Throne (a rock masonry feature), and some ancient trails Mr. Figueroa says connected these two geoglyphs and the throne to the Blythe Intaglios[48] and other sacred sites. The site visit and analysis of the geoglyphs determined that that these geoglyphs are recent in origin (Kline 2010). These conclusions were based on reviews of historic maps and aerial photography,showing that these geoglyphs did not exist prior to 1994. This is described in more detail under Ineligible Resources, *infra*.

[47] Kokopelli is the now familiar hump-backed, dancing, flute-playing figure known from petroglyphs and pottery of Puebloan origins, who was associated with agriculture and fertility. According to Alfredo Acosta Figueroa, Cicimitl is "the spirit of the underworld." The deity is part of the Aztec pantheon.

[48] Well-known prehistoric geoglyphs of anthropomorphic and zoomorphic figures located several miles north of the BSPP.

Energy Commission staff has also, on several occasions, sought Native American opinions and concerns regarding the BSPP. On April 16, 2010, staff attended a Tribal Renewable Energy Symposium in Palm Desert, where representatives of the BLM, of the NAHC, and of a number of Native American tribes and groups met to learn about how BLM, other federal agencies, and the Energy Commission were handling the impacts to prehistoric and ethnographic cultural resources that could result from the large number of renewable energy projects being proposed for BLM-managed lands, among them the BSPP. The Native Americans also took this opportunity to discuss the development of a strategy they could use in responding to the potential destruction of cultural resources of concern to Native Americans. (Ex. 203, p. C.3-37.)

Staff also attended a meeting organized by BLM on April 23, 2010, in Palm Desert, to formally initiate the NHPA Section 106 consultation for PAs for four solar projects proposed for Chuckwalla Valley locations north of the I-10 freeway including the BSPP.[49] Attending or calling in were Energy Commission staff, representatives of the applicants for the four projects, representatives of the intervenors in the three Energy Commission cases (BSPP, Genesis Solar Energy Project, and Palen Solar Power Plant), representatives of Native American tribes, and a representative of the Office of Historic Preservation. The description and status of cultural resources inventory and evaluation for the four projects were presented by project representatives and their cultural resources consultants. Representatives of the San Mañuel Band of Mission Indians, the Twenty-nine Palms Band of Mission Indians, and the Agua Caliente Band of Cahuilla Indians were present. They expressed concerns about the great number of desert projects and the difficulties of Native Americans in trying to respond to these developments and participate in the Section 106 process. (Ex. 203, p. C.3-38)

The Energy Commission held a workshop in Palm Springs on April 28, 2010, to receive comments from the applicant, the intervenors, and the public, and to answer questions on all aspects of the joint Energy Commission-BLM BSPP SA/DEIS. Patti Tuck-Garcia, Tribal Historic Preservation Officer, and Sean Milanovich, Cultural Resources Specialist, for the Agua Caliente Band of Cahuilla Indians both attended this workshop. Ms. Tuck-Garcia again requested from the applicant a summary report of the BSPP archaeological survey to review before commenting on the project.

[49] The four were: BSPP, Genesis Solar Energy Project, Palen Solar Power Plant, all of which would utilize solar concentrating technology, and First Solar Desert Sunlight Solar Farm, which would use photovoltaic technology.

The Quechan Tribe has expressed the most interest in BSPP, and has contacted BLM multiple times. Their concerns were summarized in a formal September, 3, 2009 letter, to BLM from Mike Jackson, Sr., Tribal Council President. The letter was in response to the proposed Programmatic Environmental Impact Statement for Solar Energy Development for the six southwestern states. The Quechan consider the area around Blythe, presumably including the BSPP site footprint and linear facilities corridor, to be part of the Quechan Tribe's traditional land. To alleviate potential impacts to cultural resources, spiritual landscapes, or traditional cultural properties (TCPs) they requested to be consulted prior to any plans being finalized. They further requested that the clustering of the large multi-thousand-acre projects be prohibited, that traditional areas rich in cultural resources be avoided, that projects be placed on land that has already been disturbed, and that existing buildings be favored over undisturbed land for the placement of solar panels. Finally, they emphasized their concern over indirect as well as direct impacts to cultural resources. They requested that BLM not "focus exclusively on archaeological site impacts, while failing to fully address impacts to resources such as cultural landscapes and TCPs" (Ex. 203, p. C.3-39.)

AECOM conducted field surveys at the site between March 27 and August 5, 2009, from October 13 to 16, 2009, and in late April and early May, 2010. The survey methods for all archaeological survey entailed four-to eight-person survey teams walking at 20-meter intervals looking for archaeological remains. The survey team sought to relocate previously recorded sites and assess their current condition. For new resources, they defined four or more artifacts as a site and three or fewer as an isolate. They used an arbitrary distance of 30 meters (m) between artifacts and features to separate deposits into individual sites. They used handheld GPS units to plot the locations of features, sites, and isolated artifacts and flagged finds for the recording team that would follow them. The recording team recorded all sites and architectural resources over 45 years of age with the data required by Department of Parks and Recreation (DPR) series 523 forms. They photographed site overviews and diagnostic artifacts, drew site sketch maps, compiled artifact and feature descriptions, and made observations on the terrain and ecology. Once a site was recorded the recording team removed all flagging tape. AECOM undertook no subsurface testing and collected no artifacts. (Ex. 203, pp. C.3-40 to C.3-41.)

AECOM reported four prehistoric site types as present on the BSPP site:

- Prehistoric Lithic Scatters (debris from the production of one or more flaked stone tools, possibly tools used to make flaked stone tools, and occasionally the flaked stone tools themselves);
- Prehistoric Quarry Sites (a geological deposit of stone material suitable for the manufacture of flaked stone tools);
- Prehistoric Sites with Features (features are remains of non-residential human modifications or additions to the natural landscape, such as hearths, arrangements of stones, cleared areas), all but one of which in the BSPP project areas were "thermal cobble features"—probably the remains of roasting pits;
- Prehistoric Trails (footpaths evidencing denuding of desert pavement, with possible shallow depression from compaction of soils).

(Solar Millennium Blythe Class III Survey Report, CECC Docket No. 53585, pp. 118 – 123)

Staff added a fifth type:

- "Pot Drop" (isolated scatter of sherds from a single pot, possibly associated with sacred activity).

AECOM defined three broad categories of historic-period sites, Early Twentieth-Century Mining and Ranching Sites, World War II-era DTC/C-AMA Sites, and Other Historic-period Sites.

The Early Twentieth-Century Mining and Ranching Sites consisted of:

- Early twentieth-century habitation sites (residential structural remains and domestic non-biodegradable refuse);
- Early twentieth-century sites with features (features are remains of non-residential human modifications or additions to the natural landscape, such as non-residential structural remains, mining claim markers, prospecting, refuse, and privy pits); and
- Early twentieth-century refuse scatter sites (deposits of non-biodegradable refuse of all kinds).

The World War II-era DTC/C-AMA Sites consisted of:

- World War II-era sites with features (features are remains of non-residential human modifications or additions to the natural landscape, such as fortified positions, cleared areas for tent pads, and hearths);
- World War II-era refuse dump sites (distinguished from refuse scatter sites by the greater volume of material and multi-episodic deposition); and

- World War II-era refuse scatter sites (recognized by the presence of military-issued rations containers or cans opened with the military-issued P-38 can-opener or a bayonet).

The Other Historic-period Sites consisted of:

- Transportation routes (pre-1967 dirt roads traversing the proposed plant site);
- Non-specific twentieth-century sites with features (these lacked materials that could be dated or associated with a specific activity);
- Non-specific twentieth-century refuse dump sites; and
- Non-specific twentieth-century refuse scatter sites.

(Ex. 203, pp. C.3-43 to C.3-44)

Staff's Cultural Resources Table 2 (Ex. 203, pp. C.3-48 to C.3-78) provides a list and brief description of the archaeological sites staff currently believes are located in the BSPP archaeological PAA.

3. Potential Impacts to Cultural Resources

CEQA requires the Energy Commission, as a lead agency, to evaluate the historical significance of cultural resources by determining whether they meet several sets of specified criteria. Under CEQA, the definition of a historically significant cultural resource is that it is eligible for listing in the CRHR, and such a cultural resource is referred to as a "historical resource," which is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR", or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of section 5024.1 (g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (Cal. Code Regs., tit. 14, § 15064.5(a)). The term, "historical resource," therefore, indicates a cultural resource that is historically significant and eligible for the CRHR.

Consequently, under the CEQA Guidelines, to be historically significant, a cultural resource must meet the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at

least 50 years old,[50] a resource must meet at least one (and may meet more than one) of the following four criteria (Pub. Resources Code, § 5024.1):

- Criterion 1, is associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion 2, is associated with the lives of persons significant in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values; or
- Criterion 4, has yielded, or may be likely to yield, information important to history or prehistory.

Historical resources must also possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance. [Cal. Code Regs., tit. 14, § 4852(c).]

Additionally, cultural resources listed in or formally determined eligible for the National Register of Historical Places (NRHP) and California Registered Historical Landmarks numbered No. 770 and up are automatically listed in the CRHR and are therefore also historical resources. (Pub. Res. Code, § 5024.1(d).) Even if a cultural resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows a lead agency to make a determination as to whether it is a historical resource. (Pub. Res. Code, § 21084.1) (Exs. 1, § 5.4.3; 203, pp. C.3-78 to C.3-79)

Direct impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground, and direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historic resources when those structures must be removed to make way for new structures or when the vibrations of construction impair the stability of historic structures nearby. New structures can have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, and when the new structures

[50] The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a potential five-year lag in the planning process.

produce something harmful to the materials or structural integrity of the historic structures, such as emissions or vibrations.

Generally speaking, indirect impacts to archaeological resources are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer indirect impacts when project construction creates improved accessibility and vandalism or greater weather exposure becomes possible.

Through its examination of the archaeological data, staff identified two assumed-register-eligible historic districts and an assumed-register-eligible archaeological district. All of the prehistoric archaeological sites and the archaeological district contribute to the Prehistoric Trails Network Cultural Landscape (PTNCL) which consists of the Halchidhoma Trail and the associated joining and diverging trails (and trail-related features such as pot drops and rock cairns), and the varied loci of importance to prehistoric Native Americans that these trails connected. These loci include springs (and the dry lakes when they were not dry), food and materials resource areas, and ceremonial sites (geoglyphs, rock alignments, petroglyphs).

Specific prehistoric archaeological sites (quarries, thermal cobble features, and lithic chipping stations) contribute to the Prehistoric Quarries Archaeological District (PQAD). All of the World War II-era DTC/C-AMA historic-period archaeological sites contribute to the DTC/C-AMA Cultural Landscape (DTCCL). (Ex. 203, p. C.3-86)

Staff did not have sufficient data to determine the register eligibility of the PTNCL, the DTCCL, or the PQAD and therefore assumed the PTNCL, the DTCCL, and the PQAD are eligible for both the NRHP and the CRHR, and BSPP impacts to them must be avoided or mitigated. (Id.)

The DTC/C-AMA is a designated California Historical Landmark (#985). As defined by staff, the DTC/C-AMA Cultural Landscape (DTCCL) consists of all the archaeological remains of the DTC/C-AMA WWII military training activities that were conducted across the entire region. These sites are highly significant for their association with Gen. George S. Patton and for their ability to contribute to our understanding of how American soldiers were trained during WWII. As represented at the BSPP, these remains consist primarily of refuse scatters and dumps, with some fortified positions, cleared areas, and possible tent camps,

plus the remains of a structure evidencing possible weapons testing. The DTCCL extends beyond the boundaries and impacts of the BSPP.

Staff had insufficient information to make a determination on the CRHR eligibility of the identified resources and so assumed CRHR eligibility for the resources discussed below. Impacts to these resources would have to be avoided or mitigated by means of data recovery.

Because of data insufficiency, staff assumed eligibility for the following 10 prehistoric lithic scatter sites: SMB-P-160, SMB-P-228, SMB-P-238, SMB-P-241, SMB-P-244, SMB-P-249, SMB-P-252, SMB-P-530, SMB-P-531, and SMB-P-532.

Because they are contributors to the PTNCL, staff also assumed eligibility for the prehistoric trail site (SMB-P-410) and for the three prehistoric “pot drop” sites (CA-Riv-1136, SMB-M-TC-101, and SMB-M-WG-102).

SMB-P-214, a thermal cobble feature, and the hearth feature at SMB-H-164, while not in the PQAD, as examples of a rare prehistoric site type in the desert—the fire feature—must be assumed eligible for the CRHR. (Ex. 203, p. C.3-88)

The evidence shows that staff opted to attribute any historic-period refuse deposit whose site form has clearly identifiable DTC/C-AMA-era artifacts to the DTC/C-AMA and DTCCL, regardless of the accuracy of dating any other materials at a refuse scatter site and regardless of their age and association. This was justified on the basis that only the DTCCL contributing refuse scatters can be assumed NRHP-eligible.

AECOM identified two historic roads dating to the early twentieth century, according to historic maps. They (SMB-H-600 and SMB-H-601) are both dirt two-tracks, and AECOM recorded them in a minimal way on a DPR 523A—the archaeological site form. This did not provide sufficient information for staff to make a determination on the eligibility of the two roads, so staff must assume they are eligible for the CRHR, and BSPP impacts to them must be avoided or mitigated.

AECOM’s architectural historian recommended the built-environment resource, the 1950 radio facility, as not eligible for the NRHP or the CRHP. The only justification for the recommendation was that the facility appeared to have undergone significant alteration and did not retain sufficient integrity to be

eligible. Insufficient information was provided on the facility for staff to make an independent determination on the facility's eligibility, so it must be assumed eligible for both the NRHP and the CRHR, and any BSPP impacts to it must be avoided or mitigated. (Ex. 203, pp. C.3-86 to C.3-89.)

Ineligible Resources. On the basis of the information provided by AECOM or otherwise gathered, staff determined ineligible for the CRHR the Kokopelli and Cicimitl geoglyphs identified by representatives of La Cuna de Aztlan Sacred Sites Protection Circle as Native American sacred sites possibly subject to impact from construction in the BSPP's linear facilities corridor.

The BLM's Palm Springs Field Office archaeologist informed staff that two studies of the Kokopelli and Cicimitl geoglyphs, one done by AECOM, for the applicant, and the other by LSA, for BLM, concluded that these geoglyphs are recent in origin (Kline 2010). These conclusions were based on reviews of historic maps and aerial photography, showing that these geoglyphs did not exist prior to 1994. Additional evidence for a recent origin was observed in the lack of desert patina on many rock surfaces and in the superimposition of the rocks composing the geoglyphs over wheeled vehicle tracks and over the scars left by mechanized gravel removal (assumed to be for landscaping purposes).

To be eligible for the CRHR, a cultural resource must be 50 years old or older unless exceptionally significant, and the evidence is conclusive that the Kokopelli and Cicimitl geoglyphs are less than 50 years old. No evidence is currently available to make the case for these features to be considered exceptionally significant. They are also not listed as sacred sites with the Native American Heritage Commission, which sent the Chemehuevi Tribe a Sacred Lands File Record Form to facilitate their identifying sites and resources of importance to the Tribe (Singleton 2010). Beverly Bastian, staff's Cultural Resources expert witness, testified that there are no eligible geoglyphs on the site. Ms. Bastian's statement also pertained to the separate geoglyph noted by AECOM in its' EIC 71 records search. We therefore find the Kokopelli and Cicimitl geoglyphs are ineligible for the CRHR. (Ex. 203, pp. C.3-80 to C.3-81; 7/16/10 RT 32:20 – 32:32).

While the members of La Cuna de Aztlan Sacred Sites Protection Circle consider the Kokopelli and Cicimitl geoglyphs to be sacred sites and may conduct spiritual activities associated with them, the protections afforded by California cultural resources law do not apply to these features, and so Energy Commission staff

cannot recommend conditions of certification requiring avoidance or data recovery to mitigate for BSPP impacts to them.

Based on information provided by the Applicant, Staff determined that:

- General cutting and filling would disturb the overall BSPP plant site to a maximum depth of 7 feet.
- In the solar array fields, BSPP collector foundation excavations would cause ground disturbance down to a maximum depth of 16 feet, and the collectors would intrude into the flat landscape to a maximum height of 24 feet.
- In the power blocks, BSPP equipment foundation excavations would cause ground disturbance down to a maximum depth of 7 feet, and the equipment would intrude into the flat landscape to a maximum height of 80 feet.
- Along the linear facilities corridor, BSPP natural gas pipeline trench excavations would cause ground disturbance down to a maximum depth of 10 feet, and the transmission line supports would create an intrusion into the flat landscape to a maximum height of 140 feet. (The applicant did not provide the depth of ground disturbance resulting from transmission line support foundation excavations for either the project's gen-tie transmission line or its temporary construction power line, nor for the two telecommunications lines.)

From this, Staff has determined that all archaeological resources, determined and/or assumed register-eligible, known and possibly yet to be discovered during construction, and located within the BSPP's impact block, would be significantly impacted by the BSPP's construction. Staff has also determined that the integrity of setting and integrity of feeling of all known built-environment resources, determined and/or assumed register-eligible and located within the BSPP's impact block, would be significantly impacted by the construction of the BSPP. (Ex. 203, pp. C.3-90 to C.3-91.)

This Staff-assumed register-eligible resource and recommended mitigation are listed in Staff's Cultural Resources Table 4, found in Exhibit 203 at pages C.3-102 to C.3-109. We hereby adopt all staff-recommended Conditions of Certification as set forth in Table 4 to reduce impacts to cultural resources to below a level of significance.

To mitigate the significance of project's direct impacts to archaeological resources to a less-than-significant level, we adopt staff-recommended Conditions of Certification **CUL-3** through **CUL-5** and **CUL-15** through **CUL-19**, below, intended to provide for the contingency of discovering archaeological resources during PHPP construction and related activities. Staff's proposed **CUL-3** requires a Cultural Resources Specialist (CRS) to be retained and available

during PHPP construction-related excavations to evaluate any discovered buried resources and, if necessary, to conduct data recovery as mitigation for the project's unavoidable impacts on them. **CUL-4** requires the project owner to provide the CRS with all relevant cultural resources information and maps. **CUL-5** requires the CRS to write and submit to the Energy Commission Compliance Project Manager (CPM) a Cultural Resources Monitoring and Mitigation Plan (CRMMP). **CUL-15** requires the project owner to train workers to recognize cultural resources and instruct them to halt construction if cultural resources are discovered. **CUL-16** prescribes the monitoring, by an archaeologist and, possibly, by a Native American, intended to identify buried archaeological deposits. **CUL-17** requires the project owner to halt ground-disturbing activities in the area of an archaeological discovery and to fund data recovery, if the discovery is evaluated as CRHR-eligible. **CUL-18** requires the CRS to write and submit to the CPM a final report on all PHPP cultural resources data recovery and monitoring and mitigation activities. **CUL-19** requires conformity with the BLM Programmatic Agreement PA) and specifies that where our Conditions of Certification conflict with provisions in the PA, the PA shall take precedence. (Ex. 203, pp. C.3-1; C.3-133.)

4. Cumulative Impacts and Mitigation

In this section we evaluate the potential for BSPP, and other solar and development projects within the vicinity of BSPP, to have cumulative impacts to cultural resources. Individually minor but collectively significant actions (usually in the form of ground disturbance) may have a cumulatively considerable impact on cultural resources. These impacts may result in a substantially adverse change in the significance of a resource, potentially jeopardizing its eligibility for listing on the NRHP and CRHR.

For the cultural resources cumulative analysis, the regional scope was defined at two levels: local and regional. At the local level, the geographic area considered for cumulative impacts on cultural resources is a loosely defined area on either side of I-10 between Desert Center and Blythe in eastern Riverside County, hereafter referred to as the I-10 Corridor. This corridor overlaps to a large extent with BLM's California Desert Conservation Area. The Corridor does not have strictly defined boundaries, and therefore does not have an area. However, the area is broadly equivalent to a 4-mile-wide strip (2 miles to either side of I-10) and 48 miles long, between Blythe and Desert Center. The area of this strip is 192 square miles (122,440 acres). (Exs. 1, section 5.4.3.3; 203, p. C.3-111)

Although the total number of cultural resources present in this area is unknown, a rough order of magnitude estimate can be derived based on recent surveys related to three proposed solar power projects (Genesis Solar Energy Project, Palen Solar Power Project and Blythe Solar Power Project) which surveyed a total of 19,184 acres. These projects recorded 329 sites, indicating that the Corridor has an average site density of 0.017 cultural resources per acre, and 0.003 potentially eligible resources per acre. This figure suggests that the Corridor originally contained approximately 2,081 cultural resources, 367 of which may have been eligible for the NRHP and the CRHR. The results of Staff's cumulative analysis are shown in Staff's Cultural Resources Table 5, which we reproduce below.

CULTURAL RESOURCES TABLE 5
Cumulative Analysis Results:
Estimated Number of Cultural Resources Per Acre

Location	Acres	Number of Known Cultural Resources	Number of Potentially Eligible Cultural Resources
Genesis PAAs Blythe PAAs Palen PAAs	19,184	329 = Average Density of 0.017 sites per acre	58 = Average Density of 0.003 sites per acre
I-10 Corridor	122,440	2,081	367
Southern California Desert Region	11,000,000	187,000	33,000
Existing Projects, I-10 Corridor			
Chuckwalla Valley Prison and Ironwood Prison	1,720	29	5
I-10 Freeway	2,328	40	7
Devers-Palo Verde 1 Transmission Line	350	6	1
Kaiser Eagle Mountain Mine	3,500	59	1
Subtotal	7,898	133	23
Reasonably Foreseeable Future Projects, I-10 Corridor			
13 Solar Projects and Chuckwalla Raceway	47,591	809	143
4 New Transmission Lines	465	17	1
Subtotal	48,056	826	144
Reasonably Foreseeable Future Projects, Southern California Desert Region			

Location	Acres	Number of Known Cultural Resources	Number of Potentially Eligible Cultural Resources
Solar Projects	567,882	9,654	1,704
Wind Projects	433,721	7,373	1,301
Subtotal	1,001,606	17,027	3,005

Construction activities at the BSPP site are expected to result in permanent adverse impacts to cultural resources. BSPP would have a significant direct impact on 201 historically significant archaeological resources, most of which are contributors to one of the two historically significant cultural landscapes identified as present in the BSPP region. (Ex. 203, p. C.3-116) However, with the proper implementation of conditions of certification **CUL-1** and **CUL-2**, the proposed BSPP would result in a less-than-significant impact on known and newly found archaeological resources, including contributors the PTNCL and the DTCCL.

The BSPP construction impacts, when combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small but significant way to the cumulatively considerable adverse impacts for cultural resources at both the local I-10 Corridor and regional levels. This analysis estimates that more than 800 sites within the I-10 Corridor, and 17,000 sites within the Southern California Desert Region, will potentially be destroyed. Mitigation can reduce the impact of this destruction, but not to a less-than-significant level. Neither the Reconfigured nor the Reduced Acreage alternative, both of which would be on the same site as the proposed project, would have a material effect on the project's contribution to the overall, region-wide cumulative impacts on cultural resources. (ex. 200, pp. B.2-13 – B.2-14.)

To reduce as much as possible the region-wide, significant cumulative impact that staff has identified from its analysis, we adopt staff's recommendation that BSPP be required to contribute to the funds established to document and nominate to the NRHP, if appropriate, the PTNCL and the DTCCL (**CUL-1** and **CUL-2**).

Despite the correct implementation of the mitigation measures outlined here, BSPP's incremental contribution to cumulative impacts to cultural resources would nonetheless be cumulatively considerable. To address these unmitigable cumulative impacts, we find that overriding considerations justify these impacts and make factual findings in support thereof in the **OVERRIDE** section of this Decision.

FINDINGS OF FACT

Based on the uncontroverted evidence, the Commission makes the following findings and reaches the following conclusions:

1. Without mitigation, the BSPP project would have a significant direct impact on historically significant archaeological resources.
2. Without mitigation, the BSPP project has the potential to have a significant indirect impact on contributors to a historically significant cultural landscape.
3. There are resources in the proposed BSPP site footprint and linear facilities corridor that are eligible or assumed eligible for listing in the NRHP and the CRHR for the purpose of the present siting case.
4. Neither the Reconfigured nor the Reduced Acreage alternative would have a material effect on the project's contribution to the overall, region-wide cumulative impacts on cultural resources.
5. Conditions of Certification **CUL-1 through CUL-19** ensure that all direct and indirect impacts to cultural resources discovered during construction and operation are mitigated below the level of significance.
6. Even with the implementation of Conditions of Certification **CUL-1** and **CUL-2**, BSPP's incremental contribution to cumulative impacts to cultural resources would be cumulatively considerable.
7. Overriding considerations warrant acceptance of the project's incremental contributions to cumulative impacts.

CONCLUSIONS OF LAW

1. With implementation of the Conditions of Certification below, the BSPP will conform to all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision.

2. Through implementation of the Conditions of Certification below, the project will have no significant environmental impacts with the exception of cumulative impacts.

CONDITIONS OF CERTIFICATION

CUL-1 PREHISTORIC TRAILS NETWORK CULTURAL LANDSCAPE (PTNCL) DOCUMENTATION AND POSSIBLE NRHP NOMINATION

The project owner shall contribute to a special fund set up by the Energy Commission and/or BLM to finance the completion of the PTNCL Documentation and Possible NRHP Nomination program presented in the Blythe Solar Power Plant (BSPP) Revised Staff Assessment RSA).

The amount of the contribution shall be $35 per acre that the project encloses or otherwise disturbs. Any additional contingency contribution is not to exceed an amount totaling 20% of the original contribution. The contribution to the special fund may be made in installments at the approval of the CPM, with the first installment to constitute 1/3 of the total original contribution amount.

If a project is not certified, or if a project owner does not build the project, or, if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the PTNCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the PTNCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the PTNCL documentation and possible NRHP nomination program, then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.

Verification:

1. No later than 10 days after receiving notice of the successful transfer of funds for any installment to the Energy Commission's and/or BLM's special PTNCL fund, the project owner shall submit a copy of the notice to the Energy Commission's Compliance Project Manager (CPM).

CUL-2 DESERT TRAINING CENTER CALIFORNIA-ARIZONA MANEUVER AREA CULTURAL LANDSCAPE (DTCCL) DOCUMENTATION AND POSSIBLE NRHP NOMINATION

The project owner shall contribute to a special fund set up by the Energy Commission and/or BLM to finance the completion of the Documentation and Possible NRHP Nomination program presented in the BSPP RSA.

The amount of the contribution shall be $25 per acre that the project encloses or otherwise disturbs. Any additional contingency contribution is not to exceed an amount totaling 20% of the original contribution. The contribution to the special fund may be made in installments at the approval of the CPM, with the first installment to constitute 1/3 of the total original contribution amount.

If a project is not certified, or if a project owner does not build the project, or, if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the DTCCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the DTCCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the DTCCL documentation and possible NRHP nomination program, then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.

Verification:

1. No later than 10 days after receiving notice of the successful transfer of funds for any installment to the Energy Commission's and/or BLM's special DTCCL fund, the project owner shall submit a copy of the notice to the CPM.

CUL-3 CULTURAL RESOURCES PERSONNEL

Prior to the start of ground disturbance (includes "preconstruction site mobilization", "ground disturbance," and "construction grading, boring, and trenching," as defined in the General Conditions for this project), the project owner shall obtain the services of a Cultural Resources Specialist (CRS), one or more alternate CRSs, if alternates are needed, and the two technical specialists identified below in this condition.

The CRS shall manage all cultural resources mitigation, monitoring, curation, and reporting activities in accordance with the Conditions of Certification (Conditions). The CRS shall have a primarily administrative and coordinative role for the BSPP. The project owner shall ensure that the CRS implements the cultural resources conditions, providing for data recovery from known historical resources, and shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be impacted in an unanticipated manner. The CRS may obtain the services of field crew members and cultural resources monitors (CRMs), if needed, to assist in mitigation, monitoring, and curation activities. No ground disturbance shall occur prior to CPM approval of the CRS and alternates, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for reasons including but not limited to noncompliance on this or other Energy Commission projects.

CULTURAL RESOURCES SPECIALIST

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS shall have the following qualifications:

1. A background in anthropology and prehistoric archaeology;

2. At least 10 years of archaeological resource mitigation and field experience, with at least 3 of those years in California; and

3. At least 3 years of experience in a decision-making capacity on cultural resources projects, with at least 1 of those years in California, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

REQUIRED CULTURAL RESOURCES TECHNICAL SPECIALISTS

The project owner shall ensure that the CRS obtains the services of a qualified prehistoric archaeologist to conduct the research specified in **CUL-6** and **CUL-7**. The Project Prehistoric Archaeologist's (PPA) training and background must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and the resume of the PPA must demonstrate familiarity with similar artifacts and environmental modifications (deliberate and incidental) to those associated with the prehistoric and protohistoric use of the Palo Verde Mesa. The PPA must meet OSHA standards as a "Competent Person" in trench safety.

The project owner shall ensure that the CRS obtains the services of a qualified historical archaeologist to conduct the research specified in **CUL-8** through **CUL-11**. The Project Historical Archaeologist's (PHA) training and background must meet the U.S. Secretary of Interior's Professional Qualifications Standards for historical archaeology, as published in Title 36, Code of Federal Regulations, part 61.

The resumes of the CRS, alternate CRS, the PPA, and the PHA shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the resumes and demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research. The project owner may name and hire the CRS, alternate CRS, the PPA, and the PHA prior to certification.

OPTIONAL SPECIALIST BACKHOE OPERATOR

The project owner shall ensure that the CRS obtains the services of a specialist backhoe operator to conduct the activities specified in **CUL-6**, if needed. This backhoe operator shall have a resume that demonstrates previous experience using a backhoe in coordination with an archaeologist. In addition the operator shall use a machine with a "stripping bucket" that is sensitive enough to remove even and consistent layers of sediment 5 centimeters thick.

FIELD CREW MEMBERS AND CULTURAL RESOURCES MONITORS

CRMs and field crew members shall have the following qualifications:

1. A B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field, and one year experience monitoring in California; or

2. An A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years experience monitoring in California; or

3. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.

Verification:

1. Preferably at least 120 days, but in any event no less than75 days prior to the start of ground disturbance, the project owner shall submit the resumes for the CRS, the alternate CRS(s) if desired, the PPA, and the PHA to the CPM for review and approval.

2. At least 65 days prior to the start of data recovery on known archaeological sites, the project owner shall confirm in writing to the CPM that the approved CRS, the PPA, and the PHA will be available for on-site work and

are prepared to implement the cultural resources Conditions **CUL-6** through **CUL-11**.

Rationale: Proposed schedule change is in accordance with the project time-line.

3. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If no alternate CRS is available to assume the duties of the CRS, a monitor may serve in place of a CRS so that ground disturbance may continue up to a maximum of 3 days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.

4. At least 20 days prior to data recovery on known archaeological sites, the CRS shall provide a letter naming anticipated field crew members for the project and attesting that the identified field crew members meet the minimum qualifications for cultural resources data recovery required by this Condition.

5. At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and attesting that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition.

6. At least 5 days prior to additional CRMs beginning on-site duties during the project, the CRS shall provide letters to the CPM identifying the new CRMs and attesting to their qualifications.

CUL-4 PROJECT DOCUMENTS FOR CULTURAL RESOURCES PERSONNEL

Prior to the start of ground disturbance, the project owner shall provide the, the CRS, the PPA, and the PHA with copies of the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), and the RSA Supplement/Errata, if any, for the project. The project owner shall also provide the CRS, the PPA, the PHA, and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and maps at an appropriate scale (e.g., 1:2400 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide

copies to the CRS and CPM. Staff shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM. Release of cultural resources information will be pending BLM approval.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS, the PPA, the PHA, and the CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week. The project owner shall notify the CRS and the CPM of any changes to the scheduling of the construction phases.

Verification:

1. Preferably at least 115 days, but in any event no less than 60 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), and RSA Supplement/Errata to the CRS, if needed, and to the PPA, and the PHA. The project owner shall also provide the subject maps and drawings to the CRS, PPA, PHA, and CPM. Staff, in consultation with the CRS, PPA, and PHA, will review and approve maps and drawings suitable for cultural resources monitoring and data recovery activities.

Rationale: Proposed schedule change is in accordance with the project time-line.

2. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS, PPA, PHA, and CPM.

3. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS, PPA, PHA, and CPM.

4. Weekly, during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

5. Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

CUL-5 CULTURAL RESOURCES MONITORING AND MITIGATION PLAN

Prior to the start of ground disturbance, the project owner shall submit to the CPM for review and approval the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, with the contributions of the PPA, and the PHA. The authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall specify the impact mitigation protocols for all known cultural resources and identify general and specific measures to minimize potential impacts to all other cultural resources, including those discovered during construction. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, the PPA, and the PHA, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM. Prior to certification, the project owner may have the CRS, alternate CRS, the PPA, and the PHA complete and submit to CEC for review the CRMMP, except for the portions to be contributed by the PTNCL and the DTCCL programs.

The CRMMP shall include, but not be limited to, the elements and measures listed below.

1. The following statement shall be included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in Appendix A."

2. The duties of the CRS shall be fully discussed, including coordination duties with respect to the completion of the Prehistoric Trails Network Cultural Landscape (PTNCL) documentation and possible NRHP nomination program and the Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL) documentation and possible NRHP nomination program, and oversight/management duties with respect to site evaluation, data

collection, monitoring, and reporting at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction.

3. A general research design shall be developed that:

a. Charts a timeline of all research activities, including those coordinated under the PTNCL and DTCCL documentation and possible NRHP nomination programs;

b. Recapitulates the existing paleoenvironmental, prehistoric, ethnohistoric, ethnographic, and historic contexts developed in the PTNCL and DTCCL historic context and adds to these the additional context of the non-military, historic-period occupation and use of the Palo Verde Mesa, to create a comprehensive historic context for the BSPP vicinity;

c. Poses archaeological research questions and testable hypotheses specifically applicable to the archaeological resource types known for the Palo Verde Mesa, based on the research questions developed under the PTNCL and DTCCL research and on the archaeological and historical literature pertinent to the Palo Verde Mesa; and

d. Clearly articulates why it is in the public interest to address the research questions that it poses.

4. Protocols, reflecting the guidance provided in **CUL-6** through **CUL-11** shall be specified for the data recovery from known prehistoric and historic-period archaeological resource types.

5. Artifact collection, retention/disposal, and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to cultural resources materials and documentation resulting from evaluation and data recovery at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction. A prescriptive treatment plan may be included in the CRMMP for limited data types.

6. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground–disturbance analysis phases of the project shall be specified.

7. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project

construction management and the mitigation and monitoring team shall be identified.

8. The manner in which Native American observers or monitors will be included, in addition to their roles in the activities required under **CUL-1**, the procedures to be used to select them, and their roles and responsibilities shall be described.

9. All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.

10. The commitment to record on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all encountered cultural resources over 50 years of age shall be stated. In addition, the commitment to curate all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery), in accordance with the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, into a retrievable storage collection in a public repository or museum shall be stated.

11. The commitment of the project owner to pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. The project owner shall identify a curation facility that could accept cultural resources materials resulting from BSPP cultural resources investigations.

12. The CRS shall attest to having access to equipment and supplies necessary for site mapping, photography, and recovery of all cultural resource materials (that cannot be treated prescriptively) from known CRHR-eligible archaeological sites and from CRHR-eligible sites that are encountered during ground disturbance .
13. The contents, format, and review and approval process of the final Cultural Resource Report (CRR) shall be described.

Verification:

1. Preferably at least 90 days, but in any event no less than 30 days, the project owner shall submit the CRMMP to the CPM for review and approval.

2. At least 20 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected as a result of the archaeological investigations (survey, testing, data recovery).

3. At least 30 days prior to the initiation of ground disturbance, the project owner shall provide to the CPM a copy of a letter from a curation facility that meets the standards stated in the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, stating the facility's willingness and ability to receive the materials generated by BSPP cultural resources activities and requiring curation. Any agreements concerning curation will be retained and available for audit for the life of the project.

Rationale: Proposed schedule changes are in accordance with the project time-line.

CUL-6 Prehistoric Quarries Archaeological District (PQAD) Data Recovery and District Nomination

Prior to the start of ground disturbance, the project owner shall ensure that the CRMMP includes a PQAD evaluation and data recovery plan, to identify buried additional potential contributors to the district by geophysical or mechanical survey, to investigate and establish the relationships among all potential contributors by formulating research questions answerable with data from the contributors, conduct data recovery from a sample of the contributors, and write a report of investigations and possibly CRHR and NRHP nominations as well. The potential contributors include quarry sites CA-Riv-2846 and CA-Riv-3419 and thermal cobble features SMB-P-434, SMB-P-436, SMB-P-437, SMB-P-438, SMB-P-440, SMB-P-441. This site list may be revised only with the agreement of the CRS and the CPM. The CRMMP shall also include a detailed data recovery plan for three isolated potential thermal cobble features (not included in the PQAD) at multi-component sites SMB-H-164, SMB-M-214, SMB-M-418).

The project owner shall ensure that the CRS and the PPA assess the NRHP and CRHR eligibility of the PQAD district. Additionally, if the PQAD is found to be ineligible for both registers, the thermal cobble features' eligibility as a separate archaeological district consisting of a thermal cobble feature cluster must also be considered.

The evaluation and data recovery plan shall also specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. The project owner shall then ensure that the CRS, the PPA, the specialist backhoe operator, and archaeological team members implement the plan, with the permission of the BLM. The PQAD evaluation and data recovery plan shall provide, at a minimum, the details of each of the numbered elements below.

1. Research Design

Based on the prehistoric and ethnohistoric contexts developed for the PTNCL under the research program funded through **CUL-1**, Tasks C and D, and the archaeological and ethnohistoric literature pertinent to the Palo Verde Mesa, the research design shall reflect archaeological themes that relate to the identity and the lifeways of Native American groups on the Palo Verde Mesa in the prehistoric and historic periods. The research design shall:

a. Verify from the geological literature the Pleistocene age of the pebble terraces;

b. Formulate archaeological research questions and testable hypotheses specifically applicable to the individual contributors (for example, hypotheses regarding the function of the thermal cobble features— cooking? lithic heat treatment? or both?) and to the PQAD overall;

c. Define data sets needed to answer the formulated research questions; and

d. Develop explicit CRHR-eligibility and NRHP-eligibility assessment criteria, correlated with the research questions and specifically referencing the data sets required to answer them, for the PQAD and for the thermal cobble features as a separate potential archaeological district.

2. Program for Evaluation, Data Recovery, and Possible Nomination

The data recovery program shall:

a. Explain how the data sets that are anticipated for the PQAD will contribute to knowledge of the prehistoric and historic-period Native American themes of the research design and answer particular research questions;

b. Set out the purposes and methods of the several field phases of the PQAD evaluation and data recovery program (Geophysical Test, Geophysical Survey/Mechanical Survey, Evaluation and Data Recovery);

c. Set out the purposes and methods of the concomitant material analyses; and

d. Describe the required reports of investigations, the resource registrations (if appropriate), and the process of producing them.

3. PQAD Arbitrary Provisional Boundary Definition
The CRS, PPA, and CPM shall derive and agree upon, in consultation, the precise location of an arbitrary provisional PQAD boundary on the surface of the plant site and in the vicinity of the linear facilities corridor.

4. Evaluation and Data Recovery Methodology

a. Quarries:
The protocol for the quarry sites simultaneously recovers data from the parts of the two quarry sites, CA-RIV-2846 and CA-RIV-3419, that the project would impact and allows an assessment of the significance of the impacts of the project to the two quarry sites and an assessment of the validity of the PQAD concept.

i. Conduct a 100 percent pedestrian survey of the parts of the quarry sites that the project activities would disturb;

ii. Map and field-record finished tools, diagnostic artifacts, ceramics, artifact concentrations and features (and the material types of each) within the impacted portions of the quarry sites. Indentify and quantify artifacts within a sample of no more than 1 percent of the impacted portions of the quarry sites using 2 by 2 meter surface units. Record any differential distribution of artifacts (with suggested explanations for the distribution), and assess the integrity of the site, providing evidence on which that opinion is based;

iii Collect for dating and source analyses any obsidian artifacts;

iv. With the approval of BLM, conduct a survey of a 1 percent sample of randomly selected 10 X 10- meter units on the unimpacted portions of the quarry sites;

v. Gather the same data in the same way as for the impacted parts of the quarry sites;

vi. Compare these data to those gathered in the project-impacted parts of the sites

vii. With approval of BLM, conduct a sample survey of a zone 150 meters wide totaling ½ the length of the northwest boundary of CA-RIV-3419.

viii. Draw conclusions from the collected data on whether the parts of the quarry sites that would be destroyed by the project contribute significantly to the CRHR- and NRHP eligibility of the sites;

ix. Draw conclusions from the collected data, if possible, on whether the merging of the quarries and the lithic scatter in a district is valid.

x. raw conclusions from the collected data, if possible, on whether the merging of the quarries and the thermal cobble features in a district is valid.

b. Thermal Cobble Features

The protocol for the thermal cobble features shall include Phase I identification of possible additional subsurface contributors and compressed Phase II-Phase III evaluation and data recovery from a sample of intact sites or from all of the surface sites, whether intact or not. Phase I is geophysical and/or mechanical testing to determine the horizontal and vertical extent of the distribution of the thermal cobble features, to identify any buried intact examples of thermal cobble features out 100 meters, within the area subject to project impacts, from all surface examples, and to determine if morphological differences are present among the thermal cobble features.

Phase II-Phase III (evaluation and data recovery) would reflect judgment that features only present on the surface would be register ineligible and the existing recordation, updated to reflect the test excavation, would be adequate data recovery. Features with subsurface deposits would be register eligible, and data recovery would ensue.

Geophysical Test for Subsurface PQAD Contributing Thermal Cobble Features:

i. Test, in a 1-acre parcel within 30 meters of known thermal cobble features, the efficacy of the use of magnetometry to locate buried examples of thermal cobble features;

ii. Ground-truth by hand or mechanical excavation a minimum 25 percent sample (but no more than 5 individual anomalies) of the anomalies identified in the test survey;

iii. Keep field notes and the forms for the survey areas sufficient to completely document the geophysical test;

iv. Inform the CPM of the results of the magnetometry survey and groundtruthing and consult on the efficacy of continuing this survey method;

Geophysical Survey for Subsurface PQAD Contributing Thermal Cobble Features:

If the CRS and CPM agree, after consultation, that the geophysical test demonstrates that the use of magnetometry appears to be reasonably effective in locating buried thermal cobble features, the project owner shall ensure that the PPA proceeds to a broader magnetometry survey of a sample of the area within the PQAD provisional district boundary. The PPA shall:

i. Develop a single stratified random sample for the PQAD that would result in a magnetometry survey of a minimum of 10 percent (a maximum of 2 acres) of the total district area on the plant site;

ii. Use criteria to derive the sample to derive the sample that the CRS, the PPA, and the CPM shall agree upon and that reflect the spatial variability in the physical material character and in the chronology of the PQAD, as such variability is presently known from the field investigations;

iii. Ground-truth by hand or mechanical excavation the lesser of 10 percent or 10 individual anomalies of those identified in the test survey;

iv. Inform the CMP of the results of the survey;

v. Keep field notes and the forms for the survey are sufficient to completely document the geophysical survey;

Mechanical Survey for Subsurface PQAD Contributing Thermal Cobble Features:

If the CRS and CPM agree, after consultation, that the geophysical test demonstrates that the use of magnetometry appears to be ineffective in locating buried thermal cobble features, the project owner shall ensure that the PPA submits, for CPM review and approval, the CRS's and PPA's plan and methods for a mechanical subsurface survey of the PQAD, using construction equipment, such as a road grader or a backhoe that can work in 5-centimeter lifts. The plan and methods shall include:

i. Use of transects, the proposed width and length of which the CPM would approve;

ii. Removal of thin (no thicker than approximately 5 centimeters) layers to carefully expose target archaeological deposits

iii. Survey of a minimum of 2.5 percent of the total PQAD area on the plant site;

iv. Use criteria to derive the sample that the CRS, the PPA, and the CPM shall agree upon and that reflect the spatial variability in the physical and material character and in the chronology of the PQAD, as such variability is presently known from the field investigations;

v. Preservation of found archaeological deposits until the conclusion of the survey to facilitate the formulation of a representative data recovery sample;

vi. Consideration of the PPA recovering a sample of the buried land surfaces that may surround individual features or groups of features and documenting the material culture assemblages that may be found on such surfaces;

vii. Verbal report to the CPM on the results of the survey;

viii. Retention of field notes and the forms for the survey areas sufficient to completely document the mechanical survey.

Data Recovery from Thermal Cobble Features

Data shall be recovered from a sample of the individual thermal cobble features to document these characteristic elements of the PQAD. The purpose of this documentation would be to describe the physical variability of the features, to identify and inventory the artifacts and ecofacts that are found in them, and to interpret the methods of construction and the potential uses of the features. The procedures below shall also be used

for data recovery at the three non-PQAD thermal cobble features (sites SMB-H-164, SMB-M-214, SMB-M-418). Data recovery activities shall include:

i. Excavation of a sample of 20 percent of thermal cobble features (not to exceed 10 features), drawn from all of the thermal cobble features found as a result of the entire cumulative effort to inventory these PQAD contributors; preference should be given to data recovery from intact, buried examples, if any identified in geophysical or mechanical survey;

ii. Use of criteria to derive the sample that the CRS, the PPA, and the CPM shall agree upon and that reflect the spatial variability in the physical and material character and in the chronology of the PQAD, as such variability is presently known from the field investigations;

iii. Excavation would entail small (approximately 1–3 meters square) areal exposures by hand, where feasible, to remove the archaeological deposits in anthropogenic layers, if present;

iv. Retention of samples of each layer sufficient to submit for radiocarbon assays, and macrobotanical, palynological, geochemical, or other analyses;

v. Screening of the balance of each layer through hardware cloth of no greater than 1/8-inch mesh;

vi. Recordation of these small exposures in drawings and photographs;

vii. Retention of field notes and the forms for the excavated features sufficient to acquire the complete complement of data necessary for the description of each feature and the interpretation of the construction and use of each feature to the satisfaction of the CPM;

viii. Completions by PPA or CRS and submission by project owner to CPM and BLM of draft DPR 523C site forms for sites where data recovery completed.

Data Recovery from Former Land Surfaces Surrounding Thermal Cobble Features

Data shall be recovered from a sample of buried land surfaces assumed to be adjacent to buried thermal cobble features, if any, identified during the geophysical or mechanical subsurface survey, to document the

material culture assemblages and other evidence of behavior that may be found on such surfaces. The project owner shall ensure that the PPA:

i. Develops, in consultation with the CRS and the CPM a sample of the potential buried surfaces, if any, that would be subject to excavation;

ii. Uses criteria to derive the sample that the CRS, the PPA, and the CPM shall agree upon and that reflect the spatial variability in the physical and material character and in the chronology of the PQAD, as such variability is presently known from the field investigations;

iii. Excavates by hand three large (3 meters square) block exposures,

iv. Successfully recovers data from at least four block exposures, but must make no more than eight attempts to find buried surfaces around thermal cobble features.

v. Removes the archaeological deposits from the top of the surface in anthropogenic layers, if present. Excavates each block exposure as a single excavation unit rather than as nine separate, one-meter-square excavation units; the PPA may excavate three continuous, 1-metersquare excavation units together across the center of the feature to assess the presence of a surface and then excavate the other six units if a surface is present;

vi. Retains samples of each layer sufficient to submit for radiocarbon assays, and macrobotanical, palynological, geochemical, or other analyses;

vii. Screens the balance of each layer through hardware cloth of no greater than 1/8-inch mesh;

viii. Keeps field notes and the forms for the excavated features sufficient to acquire the complete complement of data necessary for the description of the distributions of artifacts and ecofacts across each surface, and the interpretation of the use of each surface, to the satisfaction of the CPM;

5. Materials Analyses

The project owner shall ensure that the PQAD evaluation and data recovery plan articulates the anticipated scope of the analyses of the artifact and ecofact collections that cumulatively result from the investigations of the PQAD, articulates the analytic methods to be used, and articulates how the data sets that such analyses will produce are

relevant to the themes and questions in the research design for the PQAD.

6. Report of Investigations
The project owner shall ensure that the PQAD evaluation and data recovery plan states that a final report for the PQAD evaluation and data recovery plan Data Recovery Program is required and describes the content, production schedule, and approval process for the report.

7. Provision of Results to the PTNCL PI
The project owner shall ensure that the CRS provides the data and results of the PQAD evaluation and data recovery plan Data Recovery Program to the PTNCL PI for incorporation into the PTNCL NRHP nomination.

8. California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP) Registrations if appropriate. The project owner shall ensure that the PPA prepares a CRHR nomination and a NRHP nomination for the PQAD, including both the contributors located within the boundaries of the BSPP and such contributors, entire and partial, located beyond the boundaries of the BSPP, as are known or posited. The nominations should the PPA's best estimate of a boundary for the district, a boundary that the PPA shall derive on the basis of the results of the PQAD evaluation and data recovery program and present in the final report for that program.

The project owner shall ensure that the CRS:

a. submits the CRHR nomination to the State Historical Resources Commission for formal consideration of CRHR eligibility,
b. submits the NRHP nomination to the State Historical Resources Commission to initiate the process of formal consideration by the Keeper of the National Register, and
c. tracks and facilitates the review of both nominations to acceptance or rejection.

9. Outreach Initiatives if PTNCL not eligible
a. Professional Outreach. The project owner shall ensure that the CRS and/or PPA prepare a research paper and present it at a professional conference, to inform the professional archaeological community about the PQAD and to interpret its implications for our understanding of the prehistory and early history of Native American life in the region.
b. Public Outreach. The project owner shall prepare and present materials that Interpret the PQAD for the public. Project owner shall propose at least one outreach project, examples may include one-time preparation of an instructional module or one-time preparation of a public interpretation brochure.

Verification:

1. At least 15 days prior to the start of BSPP construction-related ground disturbance in the linear facilities corridor impacting site CA-Riv-3419, the project owner shall notify the CPM that the field recordation of the impacted southwestern portion of the site has ensued.

2. At least 90 days prior to the start of BSPP construction-related ground disturbance in Unit 1 east of Historic Road SMB-H-610, the project owner shall ensure that the PPA completes the geophysical test and that the CRS and PPA consult with the CPM, via telephone, to arrive at an agreement on the reliability of the use of magnetometry to locate buried PQAD thermal cobble features and how to proceed with the subsurface survey. The approved survey shall be conducted. The project owner shall also submit, for the review and approval of the CPM, the precise geographic coordinates of the provisional boundary of the PQAD and a stratified random sample for a broader magnetometry survey of 10 percent of the PQAD within the project boundaries (maximum 2 acres) or a stratified random sample for a mechanical subsurface survey of 2.5 percent of the PQAD located inside the project's boundaries.

3. At least 60 days prior to the onset of BSPP construction-related ground disturbance in Unit 1 east of Historic Road SMB-H-601, the project owner shall ensure that the PPA completes the preliminary report on the formal inventory of the PQAD prepared by or under the direction of the CRS, and selection of separate samples for the data recovery excavation of 10 PQAD thermal cobble features, and four block exposures to reveal intact buried land surfaces there. The project owner shall ensure that the preliminary report is a concise document that provides descriptions of the schedule and methods of the inventory field effort, a preliminary tally of the numbers and, where feasible, the types of archaeological deposits that were found, a discussion of the potential range of error in that tally, and a map of the locations of the found archaeological deposits that has topographic contours and the project site landform designations as overlays. The results of the formal inventory, as set out in the preliminary report, shall be the basis for the refinement of the provisional district boundary.

4. At least 30 days prior to the start of BSPP construction-related ground disturbance in Unit 1east of Historic Road SMB-H-601, the project owner shall notify the CPM that the CRS has initiated the data recovery phases of the data recovery program.
5. At least 30 days prior to the start of ground disturbance within 30 meters of the site boundaries of the three isolated thermal cobble features, the

project owner shall notify the CPM that the CRS has initiated data recovery on the three isolated thermal cobble features.

6. At least 30 days prior to the start of ground disturbance within 30 meters of the northeastern portion of site CA-Riv-3419 that the project will impact, the project owner shall notify the CPM that the CRS has initiated the pedestrian surface survey of the northwestern edge of site CA-Riv-3419, with the permission of the BLM.

   Rationale: Proposed schedule changes are in accordance with the project time-line.

7. No longer than 90 days after the end of all construction-related ground disturbance, the project owner shall ensure that the CRS completes the preparation of the National Register of Historic Places and the California Register of Historical Resources nominations for the PQAD and submits the nominations to the State Historic Resources Commission for formal consideration.
8. No longer than 90 days after the end of all construction-related ground disturbance, the project owner shall ensure that the CRS completes the professional paper and provides the CPM with three copies of the final product of that effort, and prepares, and submits for the approval of the CPM, a public outreach product. Upon the CPM's approval of the latter product, the project owner shall ensure, as appropriate, the product's installation, implementation, or display.
9. No longer than 90 days after the end of all construction-related ground disturbance, the project owner shall ensure that the CRS completes the requisite material analyses for, prepare, and submits, for the approval of the CPM, the final cultural resources report for the Blythe cultural resources data recovery and monitoring activities. The final report shall provide descriptions of the schedule and methods of the data recovery effort, technical descriptions of excavated archaeological features and buried land surfaces that present the highest resolution of technical data that can be derived from the data recovery field notes, plan and, as appropriate, profile drawings and photographs of excavated archaeological features and buried land surfaces, and technical descriptions and appropriate graphics of the stratigraphic contexts of excavated archaeological features and buried land surfaces.

CUL-7 DATA RECOVERY FOR SMALL PREHISTORIC SITES (LITHIC SCATTERS, CAIRNS, AND POT DROPS)

The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "small prehistoric sites," consisting of sites CA-Riv-1136, SMB-P-160, SMB-M-214, SMB-P-228, SMB-H-234, SMB-P-238, SMB-P-241, SMB-P-244, SMB-P-

249, SMB-P-252, SMB-P-410, SMB-P-530, SMB-P-531, SMB-P-532, SMB-H-CT-001, SMB-H-TC-101, SMB-H-TC-103, and SMB-H-WG-102. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery shall include use of the CARIDAP protocol on qualifying sites, how to proceed if features or other buried deposits are encountered, and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods used and describe any post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PPA, and/or archaeological team members implement the plan, if allowed by the BLM, which, for sites where CARIDAP does not apply, shall include, but is not limited to the following tasks:

1. Use location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers) to add to the original site maps the following features: seasonal drainages, site boundaries, location of each individual artifact, and the boundaries around individual artifact concentrations;

2. Request the PTNCL geoarchaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the PTNCL geoarchaeologist not be available, to identify the specific landform for each site;

3. Map and field-record all lithic artifacts (numbers of flakes, the reduction sequence stage each represents, cores, tool blanks, finished tools, hammerstones, and concentrations, and the material types of each) and the other types of prehistoric artifacts present

4. Map any differential distribution of artifacts and suggest explanations for the distribution

5. Assess the integrity of the site and provide the evidence substantiating that assessment;

6. Collect for dating and source analyses any obsidian artifacts;

7. Field record the surface location of all other artifacts and collect all ceramic artifacts and botanical and faunal remains for laboratory analysis and curation;

8. Surface scrape to a depth of 5 centimeters a 5-meter-by-5-meter area centered on the artifact concentration, field-record the lithic artifacts as to location, material type, and the reduction sequence stage each represents, record the location of all other artifacts, and retain the obsidian and ceramic artifacts and botanical and faunal remains for laboratory analysis and curation;

9. Excavate one 1-meter-by-1-meter unit in 10-centimeter levels until the unit reaches a depth of 20 centimeters below any anthropogenic materials, placing the unit in the part of the site with the highest artifact density and recording its locations on the site map;

10. Place one 1-meter-by-1-meter excavation unit, as described above, in the center of each concentration if multiple artifact concentrations have been identified;

11. Notify the CPM by telephone or e-mail that subsurface deposits were or were not encountered and make a recommendation on the site's CRHR eligibility;

12. If no subsurface deposits were encountered, and the CPM agrees the site is not eligible for the CRHR, data recovery is complete;

13. If subsurface deposits are encountered, test the horizontal limits of the site by excavating additional 1-meter-by-1-meter excavation units in 10-centimeter levels until the unit reaches a depth of 20 centimeters below any anthropogenic materials, using a shovel or hand auger, or other similar technique, at four spots equally spread around the exterior edge of each site, recording the locations of these units on the site map;

14. Sample the encountered features or deposits, using the methods described in the CRMMP, record their locations on the site map, retain samples, such as flotation, pollen, and charcoal, for analysis, and retain all artifacts for professionally appropriate laboratory analyses and curation, until data recovery is complete;

15. Present the results of the **CUL-7** data recovery in a letter report by the PPA or CRS, which shall serve as a preliminary report. Letter reports may address one site, or multiple sites depending on the needs of the CRS. The letter report shall be a concise document the provides description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the

potential range of error for that tally, a map showing the location of excavation units including topographic contours and the site landforms, and a discussion of the CRHR eligibility of each site and the justification for that determination;

16. Update the existing Department of Parks and Recreation (DPR) 523 site form for these sites, including new data on seasonal drainages, site boundaries, location of each individual artifact, the boundaries around individual artifact concentrations, the landform, and the eligibility determination; and

17. Present the final results of data recovery at these prehistoric sites in the CRR, as described in **CUL-18**.

Verification:

1. At least 15 days prior to ground disturbance, the project owner shall notify the CPM that data recovery for small sites has ensued.

Rationale: Proposed schedule change is in accordance with the project time-line.

2. After the completion of the excavation of the first 1-meter-by-1-meter excavation unit at each of the subject sites, the CRS shall notify the CPM regarding the presence or absence of subsurface deposits and shall make a recommendation on the site's CRHR eligibility.

3. Within one week of the completion of data recovery at a site, the project owner shall submit a letter report written by the PPA or CRS for review and approval of the CPM. When the CPM approves the letter report, ground disturbance may begin at this site location.

CUL-8 DATA RECOVERY ON HISTORIC-PERIOD SITES WITH FEATURES

The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "historic-period archaeological sites with features," consisting of sites SMB-H-143, SMB-H-163, SMB-H-203, SMB-H-205, SMB-H-207, SMB-H-210, SMB-H- 222, SMB-H-223, SMB-H-245, SMB-H-247, SMB-H-250, SMB-H-251, SMB-H- 409, SMB-H-411, SMB-H-416, and SMB-H-419. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery shall include use of the CARIDAP protocol on qualifying sites, how to proceed if features or other buried deposits are encountered, and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods to

be used and describe any anticipated post processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PHA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks:

1. The project owner shall hire a PHA with the qualifications described in **CUL-3** to supervise the field work.

2. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.

3. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth century can, bottle, and ceramic diagnostic traits.
4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any man-made features, the limits of any artifact concentrations and features (previously known and newly found in the metal detector survey), using location recordation equipment that has the latest technology with submeter accuracy (such as UTM 11 North or California Teale Albers).
5. The project owner shall ensure that a detailed in-field analysis of all artifacts shall be completed, if not done previously. Types of seams and closures for each bottle and all cans shall be documented. Photographs shall be taken of any text or designs. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected.
6. The project owner shall ensure a systematic metal detector survey be completed at each site, and that each hit is investigated. All artifacts and features thus found must be mapped, measured, photographed, and fully described in writing.
7. The project owner shall ensure that all features are recorded, and that any features having subsurface elements are

excavated by a qualified historical archaeologist. All features and contents must be mapped, measured, photographed, and fully described in writing.

8. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA ,which shall serve as a preliminary report, that details what was found at each site, as follows:
   a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and
   b. The letter report shall be a concise document that provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms.
9. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the 12 historic-period sites are contributing elements to the DTCCL.
10. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervisors the writing of a comprehensive final report. This report shall be included in the CRR (**CUL-18**). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by **CUL-2**).

Verification:

1. At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and in-field artifact analysis has ensued on historic-period sites with features.

Rationale: Proposed schedule change is in accordance with the project time-line.

2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

CUL-9 DATA RECOVERY ON HISTORIC-PERIOD SITES WITH STRUCTURES

The project owner shall ensure the CRMMP includes a data recovery plan for the resource type “historic-period archaeological

sites with structures," consisting of sites SMB-H-404, SMB-H-432, and SMB-H-514. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery shall include use of the CARIDAP protocol on qualifying sites, how to proceed if features or other buried deposits are encountered, and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PHA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks:

1. The project owner shall hire a qualified historian to research the locations of these sites and attempt to determine their origins and functions from the historical record.

2. The project owner shall hire a PHA with the qualifications described in CUL-3 to supervise the field work.

3. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.

4. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits.

5. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any manmade features, the limits of any artifact concentrations and features (previously known and newly found in the metal detector survey), using location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers).

6. The project owner shall ensure that a detailed in-field analysis of all artifacts shall be completed, if not done previously. Types of

seams and closures for each bottle and all cans shall be documented. Photographs shall be taken of any text or designs. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected.

7. The project owner shall ensure a systematic metal detector survey be completed at each site, and that each —hit|| is investigated. All artifacts and features thus found must be mapped, measured, photographed, and fully described in writing.

8. The project owner shall ensure that all structures are mapped, measured, photographed, and fully described in writing, and that all associated features having subsurface elements are excavated by a qualified historical archaeologist. All features and contents must be mapped, measured, photographed, and fully described in writing. 9. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA ,which shall serve as a preliminary report, that details what was found at each site, as follows:

a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and

b. The letter report shall be a concise document the provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms.

10. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the three historic-period sites are contributing elements to the DTCCL.

11. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (CUL-18). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by CUL-2).

Verification:

1. At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and in-field artifact analysis has ensued on historic-period sites with structures.

Rationale: Proposed schedule change is in taccordance with the project time-line.

2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

CUL-10 DATA RECOVERY ON HISTORIC-PERIOD DUMP SITES

The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "historic-period dump sites," consisting of sites SMB-H-171, SMB-H-178, SMB-H-224, SMB-H-403, and SMB-H-427 on the proposed plant site and sitesSMB-H-261/262 and SMB-H-522/525 along the linear facilities corridor if impacts to the latter cannot be avoided by spanning. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery shall include use of the CARIDAP protocol on qualifying sites, how to proceed if features or other buried deposits are encountered, and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PHA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks:

1. The project owner shall hire a PHA with the qualifications described in **CUL-3** to supervise the field work.

2. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.

3. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and

accurate identification of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits.

4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any manmade features, the limits of any artifact concentrations and features, using location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers).

5. The project owner shall ensure that each dump is entirely mapped, measured, photographed, and fully described in writing.

6. The project owner shall ensure that 10 percent of the surface contents of each dump is recorded as follows:

a. Apply a 1-meter x 1-meter grid to the entire dump and randomly select 10 percent of the units.

.b. Do a detailed in-field analysis of all artifacts in each unit, documenting the measurements and the types of seams and closures for each bottle, and the measurements, seams, closure, and opening method for all cans. Photographs shall be taken of maker's marks on bottles, any text or designs on bottles and cans, and of decorative patterns and maker's marks on ceramics. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected.

c.. If any subsurface elements are found in the units, a qualified historical archaeologist shall excavate the part in the unit. All features and contents must be mapped, measured, photographed, and fully described in writing.

7. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA ,which shall serve as a preliminary report, that details what was found at each site, as follows:

> a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and
>
> b. The letter report shall be a concise document the provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, and a map showing

the location of collection and/or excavation units, including topographic contours and the site landforms.

c. The letter report for each site shall present preliminary conclusions regarding the period(s) of use of the dump and suggest who the possible users were in each represented period.

8. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the five historic-period dump sites are contributing elements to the DTCCL.

9. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (**CUL-18**). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by **CUL-2**).

Verification:

1. At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and in-field artifact analysis has ensued on historic-period dump sites.

Rationale: Proposed schedule change is in accordance with the project time-line.

2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

CUL-11 DATA RECOVERY ON HISTORIC-PERIOD REFUSE SITES

The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "historic-period refuse sites," consisting of sites SMB-H-164, SMB-H-166, SMB-H-181, SMB-H-287, SMB-H-288, and SMB-H-423 (SMB-H-164 also has a probable prehistoric thermal cobble feature for which assessment and data recovery would be accomplished under **CUL-6**.). The focus of the recordation upgrade is to determine if these sites can be attributed to the DTC/C-AMA use of the region and are therefore contributors to the DTCCL. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery shall

include use of the CARIDAP protocol on qualifying sites, how to proceed if features or other buried deposits are encountered, and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PHA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks:

1. The project owner shall hire a PHA with the qualifications described in **CUL-3** to supervise the field work.

2. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.

3. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth century can, bottle, and ceramic diagnostic traits.

4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any man-made features, the limits of any artifact concentrations and features (previously known and newly found in the metal detector survey), using location recordation equipment that has the latest technology with submeter accuracy (such as UTM 11 North or California Teale Albers).

5. The project owner shall ensure that a detailed in-field analysis of all artifacts types shall be completed, documenting the measurements and the types of seams and closures for each bottle, and the measurements, seams, closure, and opening method for all cans. Photographs shall be taken of maker's marks on bottles, any text or designs on bottles and cans, and of decorative patterns and maker's marks on ceramics. Artifacts shall not be collected.

6. The project owner shall ensure that all structures are mapped, measured, photographed, and fully described in writing, and that all associated features having subsurface elements are excavated by a qualified historical archaeologist. All features and contents must be mapped, measured, photographed, and fully described in writing. 8. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA ,which shall serve as a preliminary report, that details what was found at each site, as follows:

a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and

b. The letter report shall be a concise document the provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms.

c. The letter report shall make a recommendation on whether each site is a contributor to the DTTCL.

7. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the six historic-period sites are contributing elements to the DTCCL.

8. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervisors the writing of a comprehensive final report. This report shall be included in the CRR (**CUL-18**). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by **CUL-2**).

Verification:

1. At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and upgraded in-field artifact analysis has ensued on six historic-period refuse scatter sites.

Rationale: Proposed schedule change is in accordance with the project time-line.

2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

CUL-12 DATA RECOVERY ON HISTORIC-PERIOD ROADS

The project owner shall ensure that a qualified architectural historian (must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for historian, as published in Title 36, Code of Federal Regulations, part 61) conducts research and writes a report on the age and use of two historic period, unimproved roads (SMB-H-600, SMB-H-601), with particular attention paid to their role during the use of the area by the U. S. Army in World War II training maneuvers (DTC/C-AMA). The project owner shall provide the historian's report to the DTCCL PI Historian for use in the possible DTCCL NRHP nomination. The project owner may undertake this task prior to Energy Commission certification of the project.

Verification:

1. At least 15 days prior to ground disturbance, the project owner shall submit to the PM the historian's report documenting the age and historical use of the two roads.

2. Within 15 days after the CPM approves the report, the project owner shall forward it to the DTCCL PI-Historian.

CUL-13 ARCHIVAL RESEARCH ON BLYTHE ARMY AIR BASE RESERVOIR PIPELINES

The project owner shall ensure that a qualified architectural historian (must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for historian, as published in Title 36, Code of Federal Regulations, part 61) conducts research to establish the current existence and locations of the water supply pipelines that connect the Blythe Army Air Base Reservoir pipelines to the former Blythe Army Air Base. The project owner shall ensure that the construction of the project's underground facilities that cross these old pipelines avoids impacting them. The project owner shall provide the historian's report to the DTCCL PI Historian for use in the possible DTCCL NRHP nomination. The project owner may undertake this task prior to Energy Commission certification of the project.

Verification:

1. At least 15 days prior to excavating any trenches crossing the old Blythe Army Air Base Reservoir water pipelines, the project owner shall submit to the CPM the historian's report verifying the current presence or absence of the pipelines and, if they are present, a plan indicating how they will be avoided.

2. Within 15 days after the CPM approves the report, the project owner shall forward it to the DTCCL PI-Historian

CUL-14 ARCHIVAL RESEARCH ON RADIO COMMUNICATIONS FACILITY

The project owner shall ensure that a qualified architectural historian (must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for historian, as published in Title 36, Code of Federal Regulations, part 61) conducts research to evaluate the CRHR eligibility of the radio communications facility, considering all pertinent register criteria, as well as integrity. If the facility is recommended as CRHR-eligible, the project owner shall propose ways to avoid or mitigate, to a less than significant level, the project's impacts to the facility's integrity of setting and integrity of feeling.

The project owner may undertake this task prior to Energy Commission certification of the project

Verification:

1. At least 45 days prior to construction, the project owner shall submit to the CPM the historian's recommendation, with supporting evidence, on the eligibility of the radio communications facility and, if it is eligible, a plan indicating how the project's impacts to the facility's integrity of setting and integrity of feeling will be avoided or mitigated to a less than significant level.

Rationale: Proposed schedule change is in accordance with the project time-line.

2. At least 30 days prior to construction, the project owner shall implement those elements of the submitted avoidance/mitigation plan approved by the CRS.

CUL-15 WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended,

but must be resumed when ground disturbance, such as landscaping, resumes.

The training shall include:

1. A discussion of applicable laws and penalties under the law;

2. Samples or visuals of artifacts that might be found in the project vicinity;

3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;

4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;

5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;

6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;

7. An informational brochure that identifies reporting procedures in the
event of a discovery;

8. An acknowledgement form signed by each worker indicating that they have received the training; and

9. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

10. No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

Verification:

1. At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval.

2. At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP trained worker to sign.

3. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-16 CONSTRUCTION MONITORING PROGRAM

The project owner shall ensure that the CRS, alternate CRS, or CRMs, to prevent construction impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner, monitor full time all ground disturbance:

- in the areas recommended by the geoarchaeological study to the depth recommended;
- for the trenches for underground communication lines and the natural gas pipeline;
- for the holes for the transmission line support structures
- in the parts of sites CA-Riv-2846 and CA-Riv-3419 that the project will grade away, in the area inside project boundaries within 1,000 feet of the margins of archaeological sites CA-Riv-2846 and CA-Riv-3419 and within 300 feet of all known and discovered examples of thermal cobble features;
- And for the jack-and-bore tunneling for underground conductor or cable lines or pipelines, that they monitor the excavation of the jack-and-bore entry and exit pits and examine, log, and screen auger backdirt samples, as detailed in the CRMMP.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of the earth-removing activities in the areas specified in the previous paragraph, for as long as the activities are ongoing. Where excavation equipment is actively removing dirt and hauling the excavated material farther than fifty feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped

material. For excavation areas where the excavated material is dumped no farther than fifty feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

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

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of noncompliance with the Conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.
The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities with Energy Commission technical staff.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a

monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions.

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

Verification:

1. At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log.

2. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.

3. At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.

4. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM.

5. Weekly, during jack-and-bore tunneling for the underground transmission line, the project owner shall provide the CPM with copies of the soil and sediment descriptions and auger-backdirt screening logs kept by the CRS, alternate CRS, or CRMs, as detailed in the CRMMP.

6. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.

7. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.

8. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.

CUL-17 AUTHORITY TO HALT CONSTRUCTION; TREATMENT OF DISCOVERIES

The project owner shall grant authority to halt ground disturbance to the CRS, alternate CRS, PPA, PHA, and the CRMs in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS. In the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CPM), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting, as provided in other conditions, shall continue during the project's ground-disturbing activities elsewhere. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.

2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.

3. The CRS has completed field notes, measurements, and photography for a DPR 523 Primary form. Unless the find can be treated prescriptively, as specified in the CRMMP, the Description entry of the DPR 523 Primary form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.

4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.

Verification:

1. At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, PPA, PHA, and CRMs have the authority to halt ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

2. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.

3. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

CUL-18 CULTURAL RESOURCES REPORT (CRR)

The project owner shall submit the final Cultural Resources Report (CRR) to the CPM for review and comment and to the BLM Palm Springs archaeologist for review and approval . The final CRR shall be written by or under the direction of the CRS. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, revised and final Department of Parks and Recreation (DPR) 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System

(CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR. If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM and to the BLM Palm Springs archaeologist for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification:

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

2. Within 180 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval and to the BLM Palm Springs Field Office archaeologist for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification: of receipt shall be included in an appendix.

3. Within 10 days after the CPM and the BLM Palm Springs Field Office archaeologist approve the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.

COMPLIANCE WITH BLM PROGRAMMATIC AGREEMENT

CUL-19 If provisions in the BLM Blythe Solar Power Plant Programmatic Agreement and associated implementation and monitoring programs conflict with or duplicate these Conditions of Certification, the BLM provisions shall take precedence. Provisions in these conditions that are additional to or exceed BLM provisions and represent requirements under the Energy Commission's CEQA responsibilities shall continue to apply to the project's activities, contingent on BLM's approval.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

This section of the Decision summarizes the record of the project's potential effects relating to geological and paleontological resources. Our evaluation in this subject area is guided by California Environmental Quality Act (CEQA) Guidelines, Appendix G. The evidence evaluates whether project-related activities could result in exposure to geological hazards, as well as whether the facility can be designed and constructed to avoid any such hazard which could impair its proper functioning. These include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, and seiches. Next, the evidence assesses whether the project will impact any geologic or mineralogical resources. Finally, the analysis of record examines whether fossilized remains or trace remnants of prehistoric plants or animals are likely to be present at the site and, if so, whether the project's potential impacts to these resources are adequately mitigated. (7/15/10 RT 22; Exs. 1, § 5.5; 200, pp. D.2-1 to D.2-39.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site Description

The Blythe Solar project site is located entirely on undisturbed federal land administered by the BLM. The site has been described as being located in the southeastern portion of the Mojave Desert geomorphic province or, alternatively, as located in the northeastern quarter of the Colorado Desert geomorphic province, of the Mojave Desert of Southern California near the Arizona border. The region is more characteristic of the Mojave Desert geomorphic province in terms of geology, structure and physiography. (Ex. 200, p. D.2-6.) The proposed site is situated on the alluvial-filled basin of the Palo Verde Mesa just east of the McCoy Mountains.

A preliminary geotechnical investigation including 30 exploratory borings and 16 test pits has been completed for the general area of the Blythe Solar site. The investigation reveals that the site is underlain by younger and older alluvium that generally consists of sand and gravel to the maximum depth of exploration (approximately 76.5 feet below the existing ground surface). The site is generally surfaced with unconsolidated soils due to desiccation and/or wind deposition to a maximum depth of 2 feet below the existing grade. The soils below the surface materials are generally dense to very dense poorly graded sand, silty sand and clayey sand to poorly graded gravel with sand. Very stiff to hard fine grain soils

and sandy clays are locally present as interbedded layers of 1 to 3 feet thickness at depths generally greater than 15 feet below existing grade. The near surface site soils are primarily granular with little to no swell potential. Collapse potential tests indicate the site soils exhibit a collapse potential in the range of 0 to 3.6 percent when inundated with water. (Ex. 200, p. D.2-9.)

The proposed Blythe Solar site is not crossed by any known active faults or designated Alquist-Priolo Earthquake Fault Zones (EFZs). However, a number of major, active faults lie within 62 miles of the site.

The ground water depth on the project site is not precisely known and is expected to vary with the site topographic elevation. Recent exploration indicates that ground water does not occur within 76.5 feet of the existing ground surface. The geotechnical report also indicates that ground water was measured between 193 and 195 feet below the existing ground surface at the project site. (*Id.*)

2. Impacts and Mitigation

Ground shaking, hydrocompation, dynamic compaction, and corrosive soils represent the main geologic hazards at the proposed site. The record establishes that these potential hazards will be effectively mitigated through facility design by incorporating recommendations contained in the project geotechnical evaluation as required by Condition of Certification **GEO-1**. Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the Facility Design section of this Decision should also mitigate these impacts to a less than significant level. The project site is currently not used for mineral production, nor is it under claim, lease, or permit for the production of minerals. Sand and gravel resources are present at the site; however, such materials are also present throughout the regional area, so the Blythe Solar project should not have a significant impact on the availability of these resources. (Ex. 200, p. D.2-10.)

The evidence establishes a high probability that paleontologic resources will be encountered during grading and excavation in the alluvial deposits of the McCoy Wash area located in the northeastern and southern portions of the project site and in the central portion of the site. Further, deeper excavations in the younger alluvium that will encounter the underlying older alluvium soils will also have a high probability to encounter paleontologic resources. Conditions of Certification **PAL-1** to **PAL-7**, which we hereby adopt, are designed to mitigate potential impacts to paleontologic resources to less than significant levels. Among other things, these conditions require a worker education program and the monitoring

of earthwork activities by a qualified professional paleontologist (paleontologic resource specialist, or PRS. (*Id*.)

Analysis in the AFC as well as Staff's independent review indicate that the possibility of geologic hazards significantly affecting the operation of the plant site during its practical design life is low. However, geologic hazards must be further addressed in a design-level project geotechnical report per California Building Code (CBC-2007) requirements and Condition of Certification **GEO-1**. No significant faults were identified within 59 miles of the project site. The closest surface rupture is in the Brawley Seismic Zone approximately 59 miles southwest of BSPP site. The potential for surface rupture on a fault at the solar power plant site and along its offsite linear facilities is considered to be very low. However, there are seventeen historic earthquakes of Magnitude 6.0 or greater that have occurred between 62 and 100 miles of the site.

Analysis by Applicant and separately by Staff examined the potential for the project to be significantly affected by liquifaction, laterspreading, dynamic compaction, hydrocompaction, subsidence, expansive soils, corrosive soils, landslides, flooding, tsunamis, and volcanic hazards. However, none of these presents a significant risk to the Blythe Solar project. (Ex. 200, p. D.2-15.)

The evidence also contains an examination of geologic and mineralogic resources which could potentially be impacted by the project. Construction of the proposed project will include grading, foundation excavation, utility trenching and possibly drilled shafts. We find the probability of encountering paleontologic resources to be generally high on portions of the site based on the evidence. Conditions of Certification **PAL-1** to **PAL-7** are designed to mitigate any paleontologic resource impacts, as discussed above, to a less than significant level. Essentially, Conditions of Certification **PAL-1** to **PAL-7** would require a worker education program in conjunction with monitoring of earthwork activities by qualified professional paleontologists (PRS).

The potential for encountering fossils hosted in Quaternary alluvium will increase with the depth of cut. The proposed project site is currently not used for mineral production, nor is it under claim, lease, or permit for the production of locatable, leasable, or salable minerals. Sand and gravel resources are present at the site, but these could potentially be obtained throughout the regional. Thus the Blythe Solar project should not have a significant impact on the availability of such

resources. (*Id*.)[51] The record contains no evidence of existing or potential geological or mineralogical resources at the project site or along the linear alignments.

Shallow excavations in the Holocene age modern washes and young alluvium at the surface are unlikely to encounter significant vertebrate fossil remains; however, deeper excavations that extend into older alluvium deposits may uncover significant vertebrate fossils. In addition, older alluvium in the lower portions of the Palo Verde Mesa is likely to contain significant fossil remains and has been assigned a high paleontologic sensitivity. Conditions of Certification **PAL-1** to **PAL-7** are designed to mitigate paleontologic resource impacts, as discussed above, to less than significant levels. These conditions would essentially require a worker education program in conjunction with the monitoring of earthwork activities by the paleontologic resource specialist (PRS) assigned to the project.

In contrast to construction of the project, operation of the proposed new solar energy generating facility is not likely to have any adverse impact on geologic, mineralogic, or paleontologic resources.

The evidentiary record includes analyses of numerous project alternatives including a reconfigured design which relocates Unit 3, a reduced acreage alternative, and three variations on the No Project/No Action alternative. (See Ex. 200, pp. D.2-22 to D.2-24.) None of the other alternatives proved superior in both reducing impacts and meeting project objectives. However, in the case of the reduced acreage alternative, impacts would be reduced proportionally to the reduction in the project size. Most of the No project alternatives would likely lead to similar impacts as those of the proposed project. This is due to likely development of other solar projects on the site. Alternative case number three presumes that the proposed site would not be available for future solar development and would remain natural. This could result in an increased reliance on fossil fuel-fired generation. However, in the absence of the Blythe Solar project, other renewable energy projects at different locations may be constructed to meet State and Federal mandates, and those projects would have similar impacts in other locations. (Ex. 200, p. D.2-25.)

[51] The Black Jack Mine in the northern McCoy Mountains is about 10 miles northwest of Blythe Solar site and is known as the most productive and most extensively worked manganese mine in the southern California. Id. at D.2-16.)

3. Cumulative Impacts

The evidentiary record includes an analysis of potential cumulative impacts of the Blythe Solar project with other projects. (Ex. 200, pp. D.2-25 to D.2-28.) One cumulative impact is likely to be increased groundwater pumping. The proposed Blythe Solar project would result in increased annual ground water pumping, from the current 2,000 ac-ft/yr to approximately 2,600 ac-ft/yr. (Ex. 200, p. D.2-26.) Other projects considered in the cumulative impacts analysis would most likely include ground water pumping of similar magnitude to Blythe Solar. However, the combined effect of these projects would still result in much less than the historic rate of 48,000 ac-ft/yr, a rate which did not result in any documented regional subsidence. Therefore, there would be no significant cumulative contribution to regional subsidence from foreseeable renewable projects in the Palo Verde Valley ground water basin. In addition, the analysis revealed that the potential for significant adverse cumulative impacts to the proposed project from geologic hazards during the project's design life is negligible and that the potential for impacts to geologic, mineralogic, and paleontologic resources is very low.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The proposed Blythe Solar Power Project (Blythe Solar) site is located in a moderately active geologic area of the eastern Mojave Desert geomorphic province in eastern Riverside County, California.

2. The main geologic hazards at this site include strong ground shaking, hydrocompaction, dynamic compaction, and corrosive soils.

3. These potential hazards can be effectively mitigated through facility design by incorporating recommendations contained in a design-level geotechnical report as required by the California Building Code (CBC 2007) and Condition of Certification **GEO-1**, as well as Conditions of Certification found in the **Facility Design** section of this Decision.

4. The proposed project area is currently not used for mineral production, nor is it under claim, lease, or permit for the production of locatable, leasable, or salable minerals.

5. Sand and gravel resources are not only present at the site but are also available throughout the regional area with the result the Blythe Solar

project should not have a significant impact on the availability of such resources.

6. Paleontologic resources have been documented in older Quaternary alluvium similar to that located on the project site.

7. Potential impacts to paleontologic resources would be mitigated through worker training and monitoring by qualified paleontologists, as required by Conditions of Certification, **PAL-1** through **PAL-7**.

8. The potential for intense levels of earthquake-related ground shaking and settlement due to earthquake are geologic hazards which could affect the Blythe Solar Project.

9. The evidentiary record contains a geotechnical evaluation and presents standard engineering design recommendations for mitigation of seismic shaking and site soil conditions applicable to the project site.

10. Potential geologic hazards to the project are effectively mitigated by standard engineering design measures as specified in Conditions **GEN-1, GEN-5,** and **CIVIL-1** of the **Facility Design** section of this Decision.

11. The evidence establishes that there is a low potential for significant adverse impacts to the proposed project from geologic hazards during its design life.

12. The evidence establishes that there is a low potential for significant adverse impacts to geologic, mineralogic, and paleontologic resources from the construction, operation, and closure of the proposed project.

13. Liquefaction, lateral spreading, dynamic compaction, hydrocompaction, subsidence, expansive soils, corrosive soils, landslides, flooding, tsunamis, seiches, and volcanic hazards pose low or negligible risks to the project.

14. The proposed Blythe Solar project site is not located within an established Mineral Resource Zone (MRZ) and no economically viable mineral deposits are known to be present at the site

15. There is no evidence of existing or potential geological or mineralogical resources at the project site or along the linear alignments.

16. Project construction-related mass grading, deep foundation excavation, and utility trenching that penetrates underlying undisturbed soils holds a high potential for exposure of paleontological resources, until determined otherwise by the project paleontological resource specialist.

17. The project owner will implement several mitigation measures to avoid impacts to any paleontological resources discovered, including worker education, preparing a Paleontological Monitoring and Mitigation Plan, and having a Paleontologic Resource Specialist on-site. These mitigation measures are found in Conditions of Certification **PAL-1** through **PAL-7,** below.

18. It is undisputed that the facility could be designed and constructed to minimize the effect of geologic hazards and impacts to potential paleontological resources at the site during project design life.

19. No geologic hazards which would arise due to cumulative effects during operation of the proposed facility were identified during this investigation.

CONCLUSIONS OF LAW

1. The Conditions listed below ensure that project activities will not cause significant adverse direct, indirect, or cumulative impacts to geological, mineralogical, or paleontological resources.

2. Compliance with the Conditions of Certification specified below will ensure that the Blythe Solar Power Project conforms to all applicable laws, ordinances, regulations, and standards related to geological, mineralogical, and paleontological resources as identified in **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

GEO-1 The Soils Engineering Report required by Section 1802A of the 2007 CBC should specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of corrosive soils, hydrocompaction or dynamic compaction; and the presence of expansive clay soils. The report should also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present.

Verification: The project owner shall include in the application for a grading permit a copy of the Soils Engineering Report which addresses the potential for liquefaction; settlement due to compressible soils, ground water withdrawal, hydrocompaction, or dynamic compaction; and the possible presence of expansive clay soils, and a summary of how the results of the analyses were incorporated into the project foundation and grading plan design for review and comment by the Chief Building Official (CBO). A copy of the Soils Engineering Report, application for grading permit and any comments by the CBO are to be provided to the CPM at least 30 days prior to grading.

PAL-1 The project owner shall provide the CPM with the resume and qualifications of its PRS for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontologic Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified paleontologic resource monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.

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

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

1. Institutional affiliations, appropriate credentials, and college degree;
2. Ability to recognize and collect fossils in the field;
3. Local geologic and biostratigraphic expertise;
4. Proficiency in identifying vertebrate and invertebrate fossils; and
5. At least three years of paleontologic resource mitigation and field experience in California and at least one year of experience leading paleontologic resource mitigation and field activities.

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

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

Verification: (1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project, stating

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

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

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

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

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

Verification: (1) At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

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

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

PAL-3 The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a paleontologic resources monitoring and mitigation plan (PRMMP) to identify general

and specific measures to minimize potential impacts to significant paleontologic resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

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

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the conditions of certification;
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;
6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontologic resources;

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

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

PAL-4 Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for the following workers: project managers, construction supervisors, foremen, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training or may utilize a CPM-approved video or other presentation format during the project kick off for those mentioned above. Following initial training, a CPM-approved video or other approved training presentation/materials, or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM.

The WEAP shall address the possibility of encountering paleontologic resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontologic resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;

6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: (1) At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures for workers to follow.

(2) At least 30 days prior to ground disturbance, the project owner shall submit the training program presentation/materials to the CPM for approval if the project owner is planning to use a presentation format other than an in-person trainer for training.

(3) If the owner requests an alternate paleontologic trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.

(4) In the monthly compliance report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or other approved format) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

PAL-5 The project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

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

1. Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.

2. The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontologic resource activities. The PRS may informally discuss paleontologic resource monitoring and mitigation activities with the CPM at any time.
3. The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontologic resources conditions of certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the conditions of certification.
4. For any significant paleontologic resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event, where construction has been halted because of a paleontologic find.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontologic activities placed in the monthly compliance reports. The summary will include the name(s) of PRS or PRM(s) active during the month; general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: The project owner shall ensure that the PRS submits the summary of monitoring and paleontologic activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-6 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontologic resource materials encountered and collected during project construction.

Verification: The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a

period of three years after project completion and approval of the CPM-approved paleontologic resource report (see Condition of Certification **PAL-7**). The project owner shall be responsible for paying any curation fees charged by the museum for fossils collected and curated as a result of paleontologic mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

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

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

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

Certification of Completion
Worker Environmental Awareness Program
Blythe Solar Power Project (09-AFC-6)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on cultural, paleontologic, and biological resources for all personnel (that is, construction supervisors, crews, and plant operators) working on site or at related facilities. By signing below, the participant indicates that he/she understands and shall abide by the guidelines set forth in the program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title/Company	Signature
1.			
2.			
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23.			

Cultural Trainer: _____ Signature:_____ Date: ___/___/____

PaleoTrainer: _____ Signature:_____ Date: ___/___/____

Biological Trainer: _____Signature:_____ Date:___/___/__

VII. LOCAL IMPACT ASSESSMENT

The effect of a power plant project on the local area depends upon the nature of the community and the extent of the associated impacts. Technical topics discussed in this portion of the Decision consider issues of local concern including **Land Use, Noise, Socioeconomics, Traffic and Transportation, and Visual Resources.**

A. LAND USE

This section addresses the land use issues associated with the Blythe Solar Power Project (BSPP), including potential impacts related to Project construction, operation and decommissioning. The land use analysis focuses on two main issues: (1) whether the project is consistent with local land use plans, ordinances, and policies; and (2) whether the project is compatible with existing and reasonably foreseeable uses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed Blythe Solar site is situated in the Colorado Desert in eastern Riverside County, approximately two miles north of I-10 and about eight miles west of the city of Blythe. The site would encompass about 5,950 acres within a 9,400-acre ROW pending from BLM and includes about 7,205 acres that would be disturbed in some manner during construction and operation of the Blythe Solar project. The northern and western boundaries of the proposed project site abut vacant desert lands. Blythe Airport is about one mile south, and irrigated agricultural lands (640 acres) are located approximately one mile east of the proposed site. (Ex. 200, p. C.6-4.)

The Blythe Solar site currently consists of undeveloped land composed of desert scrub. The immediately surrounding area consists of undeveloped desert land with small rural communities in the vicinity with a mixture of public and private lands. Two residences are located within one mile of the proposed site; one is located southeast of the proposed site, and the other is located south of the southern boundary of the site and north of Blythe Airport. There are no known recreational uses (other than Off-Highway Vehicle (OHV) use, the site has not been farmed, and BLM has not leased the land for livestock grazing. The majority of the project site is located within the “Limited Use” category of the

BLM's California Desert Conservation Area (CDCA) Plan Multiple Use Categories. Approximately 320 acres of private lands within the site are under Riverside County jurisdiction, designated as open space and rural desert (Ex. 200, pp. C.6-4 to C.6-5.)

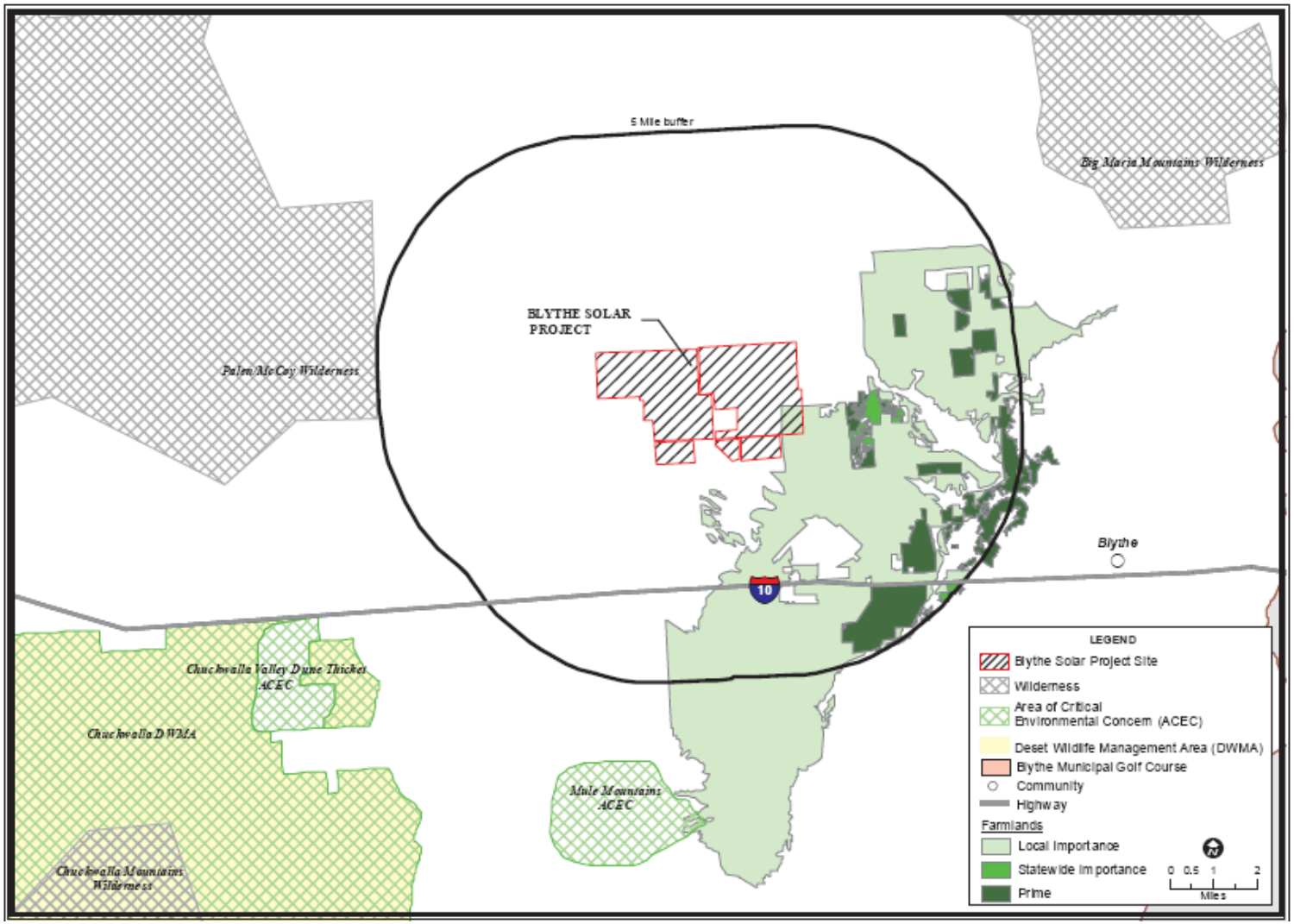
The Blythe project site is adjacent to, and in the vicinity of, extensive existing and planned development, including the City of Blythe, the Blythe Municipal Airport, two state prisons, Interstate 10, and existing electricity infrastructure, including major transmission lines, an existing natural gas-fired power plant and other proposed solar power projects.

There are federal wilderness areas located on mountainous land to the west, northeast, south and southwest of the project site, with the closest being the Palen/McCoy Wilderness, about five miles west of the project site. Additional land uses in the study area include Open-Space-Rural, Agricultural and Public Facility. There are no recreational areas within a five-mile radius of the project site. There are no Herd Areas (HAs) or Herd Management Areas (HMAs) on the project site or in the wilderness areas in the vicinity. (Ex. 200, pp. C.6-4 to C.6-5.)

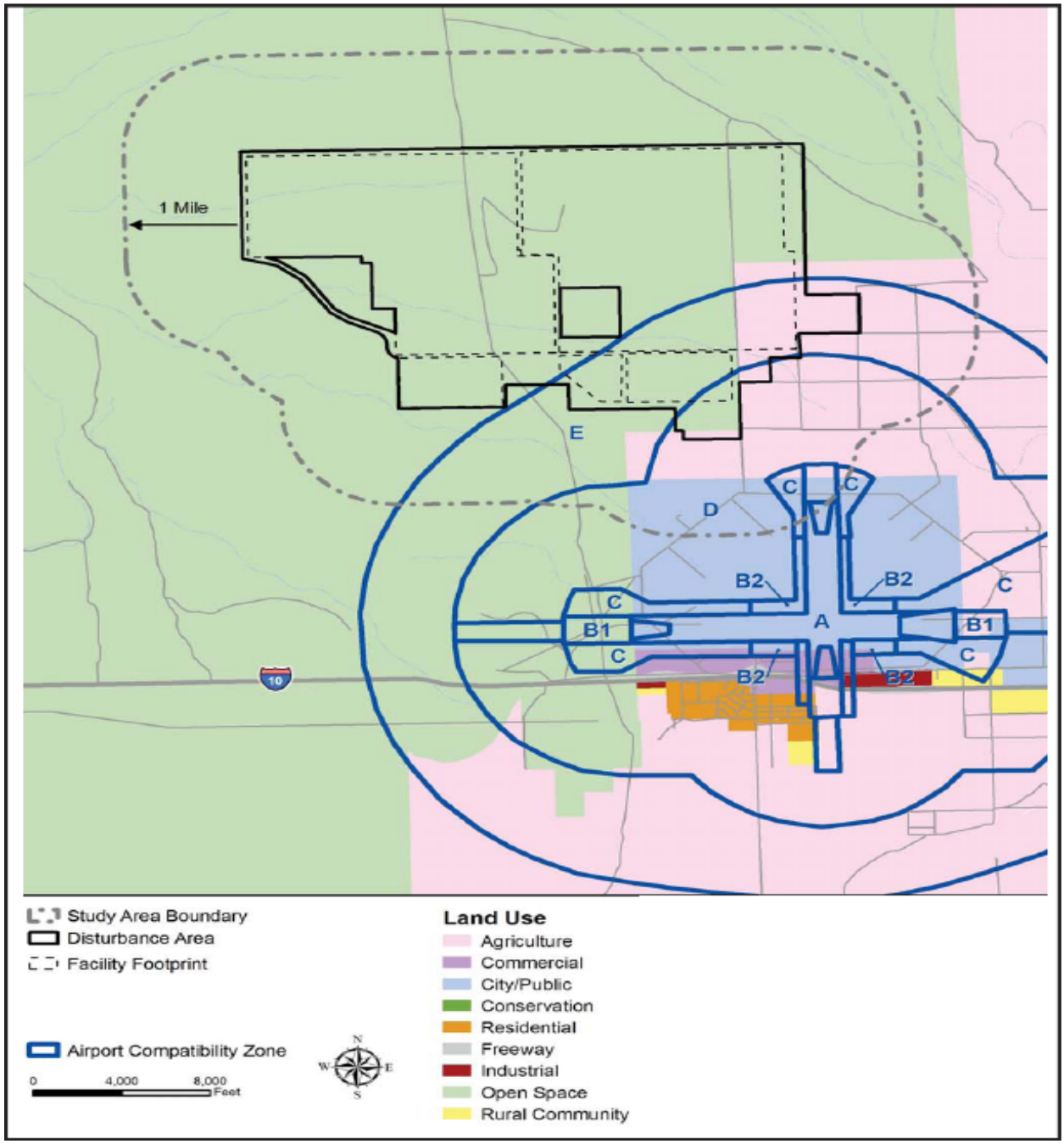
The majority of the existing agricultural land within a five-mile radius is located east of the project site as depicted in **Land Use Figure 1**. The southeast corner of the site and land to the southeast is "Farmland of Local Importance," and approximately one mile east of the Blythe Solar site is "Prime Farmland" and "Farmland of Statewide Importance." No rangeland allotments exist within this part of eastern Riverside County. (Ex. 200, p. C.6-5.) The project site also is not located in an area that is under a Williamson Act agricultural land conservation contract. (Ex. 200, p. C.6-8.)

LAND USE - FIGURE 1

Blythe Solar Power Project - Farmland of Local Importance, Statewide Importance & Prime - 5 mile Buffer



LAND USE - FIGURE 2
Blythe Solar Power Project - Airport Area of Influence



Portions of the gas line and transmission line would traverse areas designated by Riverside County as agricultural and open space land. Because they would be constructed within existing ROWs and construction impacts would be temporary, no farmland conversion impacts are expected as a result of linear facilities' construction, and the project would not involve other changes in the existing environment that could result in conversion of farmland to non-agricultural uses. (Ex. 200, p. C.6-8.)

There are no BLM livestock grazing allotments, BLM Areas of Critical Environmental Concern (ACEC) or wilderness lands, Herd Areas (HA) or Herd Management Areas (HMA) within the vicinity of the proposed project site. Therefore, no conversion of such lands would occur, and they would not be adversely affected by construction or operation of the proposed project. (Ex. 200, p. C.6-8.)

The project would convert almost 6,000 acres of land open space and rural desert to industrial solar. There are, however, large acreages of open space lands in the surrounding area that would not be impacted by the BSPP. (Ex. 200, p. C.6-8.)

The project would not physically divide an established community, and no existing roadways or pathways within an established community would be blocked. Due to the temporary nature of construction activities, construction-generated nuisances such as dust and noise are not expected to adversely affect land uses in the area. (Ex. 200, pp. C.6-8 to C.6-9.)

The project footprint would be within the Blythe Airport Influence Zone (Area) and both the project footprint and transmission line would extend into areas of the Blythe Airport Compatibility Zones designated by the Riverside County Airport Land Use Commission (ALUC). The ALUC has expressed concern that the project could violate Policy 4.3.7 of the Countywide Policies of the 2004 Riverside County Airport Land Use Compatibility Plan. This plan prohibits land uses that generate glare or distracting lights, or cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.

The evidence shows that there may be impacts from glint and glare. (Ex. 207, Aviation Assessment, p. 33). These impacts would be mitigated to the extent feasible, but it cannot be guaranteed that there will be no impacts from glint and

glare. Please refer to the **Traffic and Transportation** section of this Decision for further discussion of airport traffic issues.

The project would degrade and restrict the scenic value of the federal wilderness areas in the vicinity of the project. (Ex. 200, p. C.6-11.) These visual impacts would be significant and could not be mitigated to less-than-significant levels. (Ex. 200, p. C.6-16.) Please refer to the **Visual Resources** section of this Decision for further discussion of visual impacts.

The evidence indicates that the proposed project would be a compatible land use within the BLM's multiple use designation and would be consistent with applicable federal land use LORS. (Ex. 200, p. C.6-10.) With BLM's issuance of a CDCA Plan Amendment (necessary because the proposed project was not specifically identified in the plan), the proposed project would fully comply with the plan. It would be consistent with all other applicable land use LORS. (Ex. 200, p. C.6-16.)

Upon closure of the facility or decommissioning, it is likely that the applicant would be required to restore lands affected by the project to their pre-project state. Given the fact that the proposed project site is located on undeveloped land, staff anticipates that project decommissioning would have impacts similar in nature to proposed project construction activities. Therefore, given the temporary nature of decommissioning activities and the eventual return of the lands to their current state, the effects of decommissioning on land use are not expected to be adverse. (Ex. 200, p. C.6-11.)

BSPP would not contribute to significant cumulative impacts on rangelands and agricultural lands; cumulative impacts to BLM livestock grazing allotments, horses and burros would be less than significant; and no cumulative impacts are identified relative to creation of physical divisions of established residential communities. The project would, however, contribute to a cumulatively significant reduction in open space areas and associated reduction in scenic value due to conversion of currently undeveloped land to solar facilities. (Ex. 200, p. C.6-21.)

The evidence shows, however, that notwithstanding the unmitigable impacts, consideration needs to be given to the fact that the project is a solar power plant that will help California meet its renewable portfolio standard (RPS) of 33 percent in 2020 and AB 32 greenhouse gas emission reduction goals. As such, it will provide critical environmental benefits by helping the state reduce its greenhouse

gas emissions. (7/16/10 RT 33:17 – 35:24; Ex. 202, Comments Regarding a Possible Energy Commission Finding of Overriding Considerations.)

These positive attributes must be weighed against the project's adverse impacts. It is because of these benefits and the concerns regarding the adverse impacts that global warming will have upon the state and our environment, including desert ecosystems, that staff has recommended that the Commission approve the project based on a finding of overriding considerations, consistent with CEQA Guideline Section 15093 and section 1755 of the Commission's siting regulations, if the Commission adopts staff's proposed mitigation measures/conditions of certification. Additionally, staff believes it would be appropriate for the Commission to approve the project to find, pursuant to section 1752(k) that the project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity.

FINDINGS OF FACT

Based upon the persuasive weight of the evidence, we make the following findings and reach the following conclusions:

1. No farmland conversion impacts are expected as a result of linear facilities' construction, and the proposed project would not involve other changes in the existing environment which could result in conversion of farmland to non-agricultural uses.
2. No conversion of managed rangeland would occur, and rangelands would not be adversely affected by construction or operation of the proposed project.
3. The conversion of 5,950 acres of land to support the proposed project's components and activities would not have a significant impact on current recreational activities in established federal, state, and local recreation areas, and would not result in significant impacts to recreational users of these lands.
4. The proposed project would not impact any ACEC or wilderness values of these areas.
5. The proposed project would not result in any interference with BLM's management of an HMA or HA.
6. The BSPP would result in substantial adverse and unavoidable impacts to visual resources under CEQA, and therefore would be incompatible with surrounding land uses.

7. If the ROW and proposed CDCA land use plan amendment are approved by BLM, the proposed solar thermal power plant facility on public lands could be authorized in accordance with Title V of the FLMPA of 1976 and the Federal Regulations at 43 CFR part 2800.
8. The proposed project would be consistent with applicable Land Use LORS including the Riverside County Airport Land Use Compatibility Plan for the Blythe Airport, with the exception of the prohibition on glint and glare effects.
9. Direct impacts on agricultural lands, rangeland management, and open space would be less-than-significant, and there would be no impacts related to Williamson Act agricultural land conservation contracts. Impacts to recreation and wilderness resources would be less-than-significant**.** Impacts to horses and burros would be less-than-significant.
10. BSPP would not contribute to a significant cumulative impact on agricultural land, managed range lands. The project, in conjunction with other proposed projects, would reduce the scenic value of wilderness areas.
11. The project's impacts on open space would be cumulatively considerable when considered in combination with other solar and wind projects proposed in the region.
12. The project, as mitigated, will comply with applicable federal laws, ordinances, regulations and standards contained in the pertinent portion of **Appendix A** of this Decision, with the exception of the Riverside County Airport Land Use Compatibility Plan.
13. A Statement of Overriding Considerations will be required for impacts and LORS noncompliance associated with the project that will not be mitigated to less than significant levels.

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CONCLUSIONS OF LAW

1. We therefore conclude that the BSPP will create significant cumulative impacts related to loss of open space and reduction of scenic value, but that overriding considerations warrant the approval of the project as mitigated through the Conditions of Certification we adopt in this Decision.

2. We further find that the project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity.

CONDITIONS OF CERTIFICATION

No conditions of certification for land use are applicable to the BSPP.

B. TRAFFIC AND TRANSPORTATION

This section addresses the extent to which the project will affect the local area's transportation network. The record contains an analysis of: (1) potential problems related to construction and operational traffic; and (2) the possible effect of project operations on local airport flight traffic.

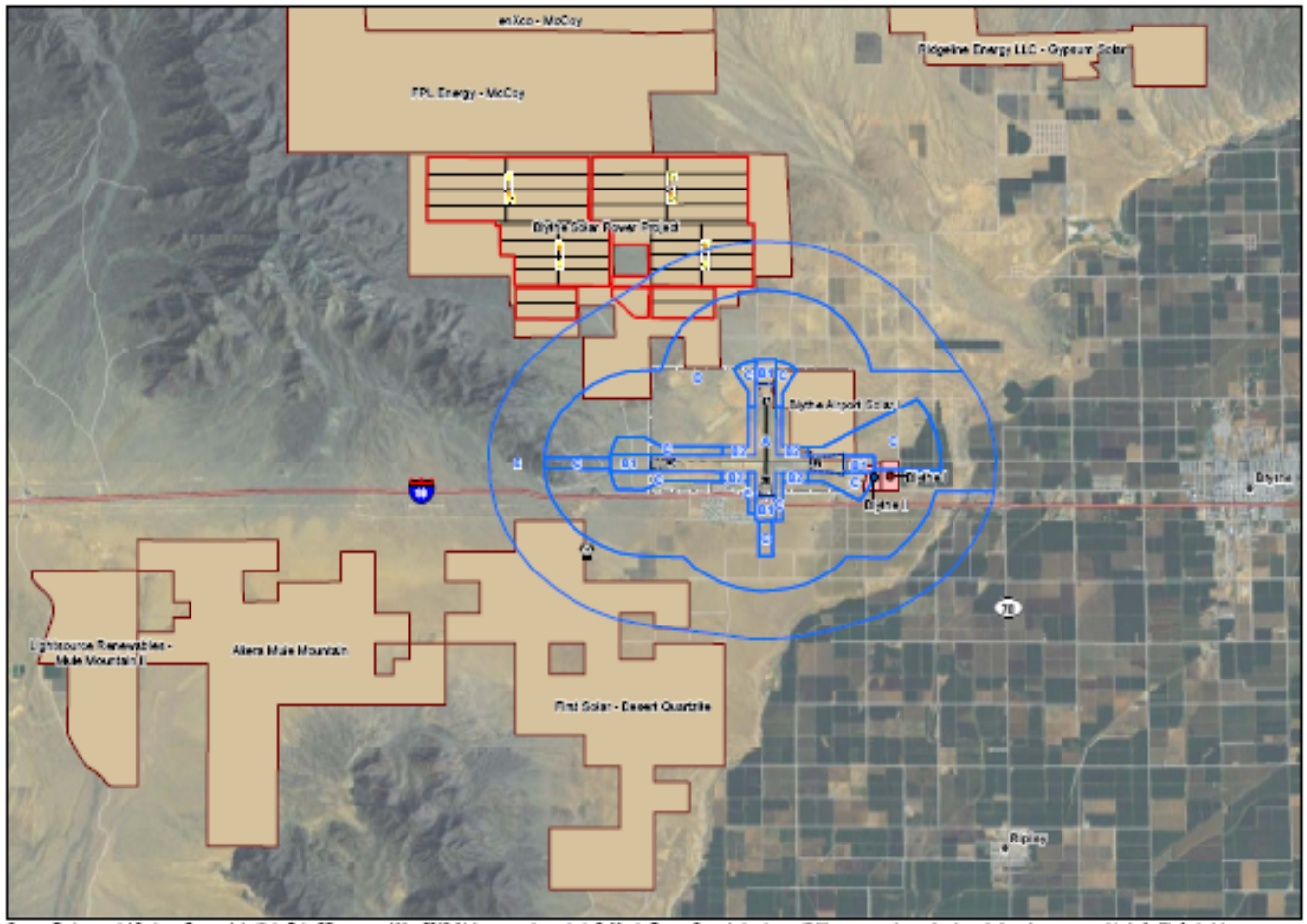
SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Site and Vicinity

The proposed project is to be located in the southern California inland desert, approximately eight miles west of the city of Blythe, two miles north of the Interstate-10 (I-10) freeway, and approximately one mile northwest of Blythe Municipal Airport (BLH), a general aviation facility in Riverside County, California. As proposed, the project is located in four Airport Compatibility Zones, as defined by the Riverside County Airport Land Use Commission and the *Airport Master Plan* as adopted by the Riverside County Board of Supervisors in 2001. Refer to **Traffic and Transportation Figure 1,** Project Location Relative to Existing and Proposed Power Plants and Blythe Municipal Airport (Ex. 200, p. C.10-5.)

The project would also include a ten-mile transmission line running south from the project; crossing I-10; and turning west to connect to Southern California Edison's proposed Colorado River substation (CRS), as well as a four-inch diameter natural gas pipeline heading two miles south from the proposed site and connecting to an existing Southern California Gas Company main pipeline south of I-10. A telecommunications line would also be built underground from the BSPP to the CRS, following the gen-tie route. All of these additional elements would be accessed from I-10, via the Wiley's Well Road interchange, 4.5 miles to the west. (Ex. 200, p. C.10-4 and Ex. 202, pp. A-54 and A-55.)

Access to the BSPP would be off I-10 to Mesa Drive, either by Exit 232 (West) or Mesa Drive (East) interchange. Travelers would drive northward about 300 feet to Black Rock Road, then westward on Black Rock Road to a new driveway extending northward into the site. (Ex. 200, p. C.10-4.)



Source: Environmental Systems Research Institute Data CD, accessed May 2010 (highways, major routes); California Energy Commission (compatibility zones, major roads, air-cooled condenser, power block, facility footprint, renewable energy right of way), accessed May 2010; Coffman Associates, 2001 (airport property line).
Prepared by: Ricondo & Associates, Inc., June 2010.

Figure 14

north

Existing and Proposed Power Plants in Eastern Riverside County

The critical roads and highways in the project are discussed below.

Interstate 10 (I-10): I-10, the southernmost, east-to-west, coast-to-coast interstate highway in the United States, begins in Santa Monica, California and ends in Jacksonville, Florida. In the project area, I-10 is a primary east/west regional arterial extending easterly from the Los Angeles area to Phoenix, Arizona, before it turns south and continues to Tucson, Arizona. In the project area, I-10 is classified as a freeway with two lanes in each direction. Access to the site from I-10 is through Exit 232, the Airport/Mesa Drive interchange at Mesa Drive. At this location, I-10 consists of two lanes in each direction. According to Caltrans, the average annual daily traffic count for the highway within the vicinity of this interchange in 2008 was 22,500 vehicles. (Ex. 200, p. C.10-5.)

Black Rock Road: Black Rock Road, a two lane, two-way roadway, extends westerly from Mesa Drive parallel to and on the north side of I-10. Its paved width is approximately 24 feet; the road has graded shoulders on both sides. Black Rock Road intersects Mesa Drive opposite Hobsonway approximately 300 feet north of the intersection of the westbound I-10 ramps with Mesa Drive. The four-legged intersection of Black Rock, Hobsonway, and Mesa Drive is controlled with stop signs on the Hobsonway and Black Rock approaches. (Ex. 200, p. C.10-6.)

Access Road: Access to the project site will be from Black Rock Road via a driveway leading to the site. Currently, the driveway is unpaved. An all-weather access road will be constructed to meet all county and local requirements, including those for access of emergency vehicles, including fire trucks and ambulances. See the **Worker Safety and Fire Protection** section of this document for additional information on the all-weather access road. (Ex. 200, p. C.10-6.)

Mesa Drive: Mesa Drive is a two lane, two-way roadway extending north and south from I-10 at the easterly edge of the Blythe Airport. The paved section of Mesa Drive north of I-10 currently ends at the intersection of Black Rock Road and Hobsonway. Between I-10 and Hobsonway, Mesa Drive is a paved road approximately 30 feet wide. From Hobsonway, Mesa Drive is a paved road approximately 70 feet wide which extends approximately 1,000 feet north before ending in a cul-de-sac adjacent to the Blythe Airport. (Ex. 200, p. C.10-6.)

Hobsonway: Black Rock Road continues as Hobsonway east of Mesa Drive. Hobsonway continues east for approximately 11 miles then turns southwest as Riviera Drive. Riviera Drive continues for approximately two miles before

terminating at US Route 95. According to the *City of Blythe General Plan*, Chapter 4, Circulation Element, Hobsonway is considered the city of Blythe's "Main Street." (Ex. 200, p. C.10-6.)

The existing Level of Service (LOS) of these roadways is shown in **TRAFFIC and TRANSPORTATION TABLES 1 and 2,** below.

TRAFFIC AND TRANSPORTATION Table 1
Existing Peak Hour Roadway Average Daily Levels of Service (2010)

Roadway/Segment	Travel Lanes	Volume	Capacity	LOS
I-10 West of Project Site	4	3,278	8,000	A
I-10 East of Project Site	4	3,278	8,000	A
Note: Baseline information from Caltrans 2009 data. Capacity represents approximate two-way capacity in vehicles per hour. Source: Ex, 200, p. C.10-14.				

TRAFFIC AND TRANSPORTATION Table 2
Existing Peak Hour Intersection Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (in seconds)	LOS	Delay (in seconds)	LOS
I-10 Westbound Ramps/Mesa Drive	1.7	A	2.4	A
I-10 Eastbound Ramps/Mesa Drive	3.2	A	3.7	A
Black Rock Road/Mesa Drive/ Hobson Way	2.7	A	3.4	A
Note: LOS pertains to intersection as a whole. Source: Ex, 200, p. C.10-15.				

As indicated in Traffic and Transportation Table 1 and Table 2, Interstate 10 east and west of the project site, as well as all intersections in the project vicinity currently operate at LOS A.

No cargo rail service is available in Blythe at this time (the Arizona & California Railroad Company received official permission to abandon service in San Bernardino County and Riverside County). In addition, no regional passenger railroad transportation exists in the immediate project area. The nearest passenger rail service is an Amtrak Station in Palm Springs to the west or Yuma, Arizona to the east. Local bus transportation is provided by the Palo Verde Valley Transit Agency (PVVTA), which operates three fixed bus routes as well as

a dial-a-ride service. National bus service is provided by Greyhound Lines, which has a station in Blythe. (Ex. 200, pp. C.10-6 and C.10-7.)

Generally, neither bicycle nor pedestrian facilities are located in the project vicinity, and such activities are limited to shoulders of rural highway and country roads. Bicycles are allowed, however, on I-10 from Dillon Road, Coachella to Mesa Drive in Blythe, and Hobsonway from Mesa Drive east toward the city of Blythe is designated as a Class II Bikeway in the Circulation Element of the Blythe General Plan. (Ex. 200, p. C.10-7.)

Two airport facilities are located in the general vicinity of the BSPP site: Blythe Municipal Airport (operational) and Desert Center Airport (now a privately-owned, private-use airport used for emergencies only). Only Blythe Airport was analyzed in detail in aviation assessments prepared for the BSPP. (Ex. 200, p. C.10-7.)

Blythe Airport is a public facility located approximately six miles west of the city of Blythe and, at its closest point, approximately 1.5 miles south and east of the project site. It has two operating runways: Runway 8-26 (oriented east-west), the primary runway, is 6,562 feet long, 150 feet wide; Runway 17-35 (oriented north-south) is 5,820 feet long, 100 feet wide. Currently, Blythe Airport is primarily used for general aviation (i.e., no military, regularly scheduled airline or regular cargo flights). Typically, this includes activities such as crop spraying operations, airplane rentals/charters, flight instruction, business travel, police, air ambulance, and personal/recreational flying. Within the Los Angeles/Desert Region, there are 11 Community General Aviation Airports, of which Blythe Airport is the only one that meets all of this classification's minimum standards. Because it has multiple runways and published instrument approach procedures, Blythe Airport is one of the most accessible airports in the region from an aviation standpoint. During the 12-month period ending in 2006, aircraft operations averaged 69 takeoffs or landings per day or more than 25,000 operations per year. The long-range forecast for Blythe Airport for 2020 in the *Airport Land Use Compatibility Plan* (ALUCP) prepared by the Riverside County Airport Land Use Commission is for a total of 58,100 annual operations. (Ex. 200, pp. C.10-7 and C.10-8; and Ex. 207, pp. 8 through 10.)

2. Construction Traffic and Parking

Potential traffic impacts associated with the construction of BSPP were evaluated for both construction workforce traffic and construction truck traffic.

Construction of the BSPP would be completed over an approximately 69-month period beginning in late 2010. The construction work force would peak during month 16 at approximately 1,000 workers per day and average approximately 600 workers over the course of construction. Construction of the transmission line is expected to require a limited crew with fewer than 25 workers during peak periods. However, the transmission line construction schedule would not coincide with the peak of plant site construction employment.

The worst-case scenario, where all workers commute in automobiles with only one occupant per vehicle, yields a peak trip generation of approximately 1,000 inbound trips during the morning peak period and another 1,000 outbound trips during the evening peak hour. Most workers would likely stay in hotels and motels in or near Blythe, however, and participate in some form of ridesharing or other programs designed to reduce traffic on I-10. (See Condition of Certification **TRANS-2**.) In the worst-case scenario, one-way worker trips would peak at 2,000 trips per day and an average of 1,200 one-way trips per day.

It is estimated that construction of the full CRS and associated project components could add 25 or more commuter round trips per day, in addition to construction vehicles. The number of trips associated with CRS construction would vary based on the degree of overlap of activities and whether workers carpool. (Ex. 202, p. A-55.)

The construction workforce for the BSPP project, CRS construction, gen-tie connection and implementation of the telecommunications system would be drawn from the surrounding local and regional area, including a small number from the greater Los Angeles Basin. A large portion of the construction workforce is expected to come from or at least be temporarily housed in the Blythe and Indio areas (including Coachella, Thermal, and Mecca). Most workers would approach the project site following I-10 from the east or west to Mesa Drive, where they would exit to the north and follow Blackrock Road west to the site. Some workers are likely to follow Hobsonway west directly to Blackrock Road. (Ex. 200, p. C.10-14.)

Traffic and Transportation Tables 3 and 4, below, contain peak construction traffic estimates for the BSPP. (Ex. 200, p. C.10-14.)

TRAFFIC AND TRANSPORTATION Table 3
2012 Peak Hour Roadway Average Daily Levels of Service
During Project Construction

Roadway/Segment	Travel Lanes	Volume	Capacity	LOS
I-10 West of Project Site	4	4,278	8,000	A
I-10 East of Project Site	4	4,178	8,000	A

Note: Baseline information from Caltrans 2009 data. Year 2009 traffic volumes expanded to Year 2012 at historical rates from year 2002 to 2007 (4.275 percent per year). Capacity represents approximate two-way capacity in vehicles per hour. CRS expansion, gen-tie connection and implementation of the telecommunications system would add a minor volume of trips and would not affect LOS or capacity.
Source: Ex, 200, p. C.10-14 and Ex. 202, p. A-55.

TRAFFIC AND TRANSPORTATION Table 4
2012 Peak Hour Intersection Levels of Service
During Project Construction (With Mitigation)

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (in seconds)	LOS	Delay (in seconds)	LOS
I-10 Westbound Ramps/Mesa Drive	5	A	1.1	A
I-10 Eastbound Ramps/Mesa Drive	8	A	6.4	A
Black Rock Road/Mesa Drive/ Hobsonway	11.3	B	9.1	A

Notes: Year 2009 traffic volumes expanded to Year 2012 at historical rates from years 2002 through 2007, or 4.275 percent per year. LOS assumes 1,000 person workforce split in two shifts of 500 employees arriving and departing one hour apart. LOS pertains to intersection as a whole. CRS expansion, gen-tie connection and implementation of the telecommunications system would add a minor volume of trips and would not affect LOS or delay.
Source: Ex, 200, p. C.10-15 and Ex. 202, p. A-55.

As indicated in **Traffic and Transportation Table 3**, I-10 east and west of the project site is expected to continue operating at LOS A during peak hour construction conditions. As Indicated in **Traffic and Transportation Table 4**, intersections would operate at LOS A or B with the implementation of applicant-recommended staggered travel times for construction workers designed to prevent vehicle traffic from becoming backed-up at stop signs as drivers exit I-10 to the project site. However, the construction of the BSPP is scheduled to overlap with the construction schedules of two other solar projects in the area, Palen Solar Power Project (PSPP) and Genesis Solar Energy Project (GSEP). These three projects would result in approximately 3,133 workers travelling on I-

10 to their work sites at the same time. Consequently, while the applicant-proposed condition to divide the workforce in shifts and stagger travel times would be a suitable mitigation for the BSPP project alone, it would not reduce the cumulative impacts on I-10 of the three projects. Therefore, Condition of Certification **TRANS-2** is included, to require the applicant for both the BSPP and the PSPP to work with Genesis Solar LLC/NextEra to formulate a transportation control plan for the BSPP that would include measures designed to maintain LOS C or better on I-10 for all three projects. (Ex. 200, p. C.10-14, and Ex. 202, pp. A-55 and A-56.)

Construction would also generate an average of approximately 15 to 20 one-way, truck trips per day with a peak of approximately 50 to 75 truck trips per day. The peak time for truck travel would occur during the construction of the foundation for the plant site and would not coincide with the peak on-site worker commute timeframe (month 16, in early 2012). (Ex. 200, p. C.10-12)

To accommodate the maximum parking and laydown requirements, the project would include temporary parking areas of approximately eight acres for construction personnel parking (assuming 350 square feet per vehicle), with additional areas for the staging and laydown of equipment, materials, and supplies. These areas would be relocated around the site as construction progresses. To prevent traffic hazards related to the use of public roadways for worker parking or equipment and supply laydown, Condition of Certification **TRANS-1** is included, ensuring adequate on-site and off-site parking areas and staging areas for all phases of project construction. (Ex. 200, pp. C.10-12 and C.10-13.)

In addition, it would be necessary to transport several pieces of equipment that exceed roadway load or size limits, including the steam turbine generator and main transformers, using multi-axle trucks, to the BSPP site via I-10 during construction. To transport this equipment, the applicant must obtain special ministerial permits from Caltrans to move oversized or overweight materials. In addition, the applicant must ensure proper routes are followed; proper time is scheduled for the delivery; and proper escorts, including advanced warning and trailing vehicles as well as law enforcement control are available, if necessary. Consequently, Condition of Certification **TRANS-3** is included to ensure the project owner would comply with vehicle size and weight limitations imposed by Caltrans and other relevant jurisdictions; Condition of Certification **TRANS-4** is included to ensure the applicant complies with Caltrans' and other relevant jurisdictions' limitations on encroachments into public rights of way; and

Condition of Certification **TRANS-5** is included to ensure that the project owner would restore all public roads, easements, and rights-of-way that have been damaged due to project-related construction activities. Repairs shall be of the kind to restore the roads, easements, and rights-of-way to their original or near-original condition. (Ex. 200, pp. C.10-15 and C.10-16.)

2. Operational Impacts and Mitigation

Potential operational impacts could be associated with vehicle traffic, aviation, emergency access, and hazardous materials. Five main components of the BSPP could potentially impact the Blythe Airport and aviation: glint and glare; thermal plumes; transmission poles and lines in airport compatibility zones; flocking birds; and flammable materials.

The proposed BSPP is not located near a navigable body of water or a railroad line crossing; therefore, the BSPP is not expected to affect water-related or rail transportation.

a. Vehicle Traffic

Roadways and intersections in the project vicinity are projected to operate well below capacity when BSPP is operational in 2016, taking into account continued local and regional growth, as well as the completion of the PSPP, located 35 miles west of Blythe. Operation of the BSPP would require an estimated 221 workers, arriving and departing in staggered, three eight-hour shifts to cover operations on a 24-hour, seven-day-a-week basis. Consequently, peak weekday traffic would be less than 150 vehicles, even if every employee were to commute in his or her own vehicle; the addition of this volume of project-generated operational traffic would not alter existing or future roadway operating characteristics.

In addition, BSPP operations would require approximately 12 truck trips per day for the delivery of materials and supplies as well as for offsite shipment of wastes. The volume of truck travel and other non-employee site visits would be very small and would typically occur during non-peak periods. Consequently, cumulative operational impacts would not be significant and not require mitigation.

b. Glint and Glare

With its large array of parabolic mirrors, the BSPP is a potential source of glint and glare that may affect the vision of pilots operating aircraft in the vicinity of Blythe Airport. Glint, a momentary flash of light, and glare, a relatively continuous source of excessive brightness relative to ambient lighting, are of most concern for pilots executing low altitude maneuvers and maintaining separation from other aircraft as they prepare to land. Effects can include permanent eye damage or temporary after-image, also known as flash blindness, which could lead to aircraft accidents. (Ex. 207, Aviation Assessment, pp. 26 through 29.) Potential effects of glint and glare for motorists on nearby roadways, hikers, and drivers of off-road vehicles are discussed in the **Visual Resources** section of this document.

With respect to the runways and traffic patterns at Blythe Airport, the mirror arrays at the proposed BSPP are oriented so that flash blindness would not be a problem to pilots in most circumstances. However, pilots could be exposed to flash blindness early in the morning as the mirrors are rotated out of nighttime stow positions and before sunset as they are rotated back to stow positions. In addition, flash blindness could be caused by accidental misalignment of the mirror arrays with the sun.

Specifically, flash blindness could occur in the following four operating configurations:

1. Runway 17 – Extended straight-In approaches
2. Runway 35 Departures – Extended straight-out departures and climbing left turns over BSPP
3. Entry to Runway 35 Pattern and Runway 26 Right Traffic Pattern

Pilots would have the flexibility to alter their headings on the pattern entry corridors, which could allow them to reduce the intensity of any glare to which they are exposed.

Furthermore, according to Policy 4.3.7 of the countywide policies of the 2004 Riverside County Land Use Compatibility Plan, the following use is prohibited:

- Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following take-off or towards an aircraft engaged in a straight final approach toward a landing at the airport.

It is important to note that there have been no complaints of flash blindness or other adverse effects from pilots using Daggett airport, which is located next to a parabolic trough solar facility. Nevertheless, Conditions of Certification **TRANS-7**, **TRANS-8**, **TRANS-9, and TRANS-10** are included to ensure proper notification of pilots regarding glint and glare potential; to require preparation of an Avigation Easement; to ensure that the project is built and operated to minimize the creation of glint and glare; and require complaint notification and follow-up procedures. These conditions would reduce, to the extent feasible, potential significant adverse impact to pilots at the Blythe Airport related to glint and glare from the BSPP facilities. (Ex. 207, Aviation Assessment, p. 33.) However, we find that overriding considerations warrant acceptance of this possible cumulative impact in this case, and have included override findings elsewhere in this Decision

c. Transmission Lines

Implementation of the BSPP would include construction of an overhead transmission line that, as originally configured, could have interfered with aircraft activities. In response to comments made by the Airport Land Use Commission, the project was modified to move the proposed transmission line outside airport compatibility zone B1 and off the extended centerline of runway 8-26, reducing the potential for the transmission line to impact aviation safety.

In addition, Condition of Certification **TRANS-11** is included to require marking and lighting of certain poles near the end of the runway to ensure they are sufficiently visible to pilots. (Ex. 207, Aviation Assessment, p. 13.)

d. Thermal Plumes

Heat exhaust in the form of thermal plumes from the air-cooled condensers operating at the proposed BSPP would potentially be hazardous to low-flying aircraft when winds are calm. Aircraft on arrival to the Blythe Airport that are flying over BSPP would be at altitudes low enough to experience turbulence from updrafts in excess of the critical average velocity of 4.3 meters per second. The risk of encountering turbulence would be heightened by the invisibility of the thermal plumes to pilots.

Low altitude over-flights of the air-cooled condensers could occur if pilots are flying for extended distances to make classic 45-degree entries to the downwind leg of the Runway 35 traffic pattern (or a right pattern to Runway 26).

Condition of Certification **TRANS-7** is included to reduce possible significant adverse impacts to pilots of thermal plumes, to the extent possible. This condition would require the applicant to ensure that measures are taken to inform pilots of the presence of these plumes through Aeronautical Charts, Airport/Facilities Directories (AFD) and Notice to Airmen (NOTAM). (Ex. 207, Aviation Assessment, p. 26.)

e. Evaporation Ponds as Bird Attractants

The evaporation ponds at the proposed BSPP site have the potential to become feeding and resting areas for birds, which could pose hazards to low-flying aircraft near the Airport. Condition of Certification **BIO-25** has been included, which requires (1) that all ponds to be netted to exclude birds and other wildlife; (2) additional visual bird deterrents and a rigorous monitoring program to verify that the netting is effective in excluding birds and other wildlife; and (3) adaptive management and remedial action to discourage wildlife use, if monitoring detects bird use at the ponds. Even if resident or migratory birds were initially attracted to the ponds, the netting would preclude use of the ponds for drinking, foraging, resting or nesting, and birds would be unlikely to linger in an area that provides no habitat or foraging opportunities.

With implementation of Condition of Certification BIO-25, the BSPP will not result in an increase in the number of birds in the vicinity of the Blythe Airport. (Ex. 207, Aviation Assessment, p. 35.)

f. Emergency Access

Two all-weather access roads are to be built to county and fire code requirements for adequate access to the project site from I-10 for emergency vehicles. The **Worker Health and Safety** section of this document addresses this issue. (Ex. 200, p. C.10-17.)

g. Hazardous Materials

Hazardous materials to be used by the BSPP consist of heat transfer fluid (Therminol VP-1™, a biphenyl) as well as diesel fuel, mineral insulating oil, and lube oil. Tanker trucks would use I-10 two times per month to make deliveries to the BSPP site. Federal and state regulations include specific procedures for transporting hazardous materials. Condition of Certification **TRANS-6** is included

to ensure compliance with all applicable state and federal regulations pertaining to the transportation of hazardous materials. (Ex. 200, p. C.10-22.)

In addition, however, Therminol is highly flammable, and fires have occurred at other solar generating stations that use it.[52] An aircraft accident at the proposed BSPP would likely result in an explosion and serious fire.

Given the location of the BSPP site with respect to Blythe Airport, neither the policies of the Riverside County ALUCP nor the guidance in the Caltrans *California Airport Land Use Planning Handbook* (2002) would suggest that the presence of hazardous materials at the site constitutes a substantial hazard to aircraft or to the public, based on the consequences of an aircraft accident.

As discussed in the previous sections, however, the proposed BSPP project has the potential to introduce hazards to air traffic in the form of thermal plumes and glare of sufficient strength to possibly result in flash blindness in certain circumstances. If such circumstances were to cause a plane to crash into the BSPP facility (a low probability event), the presence of large amounts of heat transfer fluid would likely ensure that such a crash would be fatal to the occupants of the plane. (Ex. 207, Aviation Assessment, pp. 36 and 37; and Blythe Airport Risk Assessment, p. 1.)

3. Cumulative Impacts

Approximately 17 solar projects are projected to be built within approximately 100 miles of the I-10 corridor. All of these projects have the potential to affect both the I-10 corridor between Desert Center and Blythe, and the Blythe Airport.

Without mitigation, the overlapping construction schedules of the BSPP, PSPP and GSEP solar projects have the potential to result in cumulatively considerable impacts to I-10 traffic, as well as to local streets, highways, and intersections in the project area. Conditions of Certification **TRANS-1**, **TRANS-2**, **TRANS-3**, **TRANS-4**, and **TRANS-5**, would reduce the cumulative impacts of the three projects to less than significant.

The remaining 14 solar projects are smaller, photovoltaic projects, which would have shorter construction schedules that would not overlap with the construction of the BSPP, PSPP and GSEP parabolic trough solar projects. Cumulative

[52] The thermal solar plant near Daggett, California suffered an explosion and fire in 1999. (File information provided by the California Energy Commission staff, June 2010)

impact to local roadways would be less than significant, particularly since Condition of Certification **TRANS-2** would be in place, which would require implementation of a traffic control plan.

The BSPP, in combination with the existing and proposed power plants in the project vicinity would contribute significantly to constraining the airspace available for low-flying aircraft operating at Blythe Airport. The BSPP would introduce thermal plumes and glint and glare into the airspace already compromised by the presence of Blythe I; the approved construction of Blythe II; one existing power plant and the proposed construction of two additional power plants in the Blythe Airport Land Use Compatibility zones; and two proposed solar tower plants located north of the BSPP. These existing and proposed plants introduce the risk of thermal updrafts and glint and glare into the airspace. In addition, the presence of the McCoy Mountains directly west of the Airport, already constrains the use of low altitude airspace in that area.

Conditions of certification are included to reduce and mitigate the impacts of the BSPP related to glint and glare to the extent possible, but it is undetermined if the effects of the proposed mitigation would reduce the cumulative impacts to less than significant. (Ex. 207, Aviation Assessment, pp. 41.) However, we find that overriding considerations warrant acceptance of this possible cumulative impact in this case, and have included override findings elsewhere in this Decision.

4. Compliance with LORS

With implementation of recommended conditions of certification, the BSPP would not conflict with any formal policies, plans, or programs related to transportation aspects of the project, except in the area of glint and glare. Although conditions of certification are included to reduce and mitigate the impact of glint and glare to the extent possible, it is undetermined whether mitigation will ensure compliance with LORS**.** (Ex. 200, p. C.10-25.)

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. All roads and intersections in the project vicinity operate at acceptable levels of service and would continue to do so after the addition of traffic associated with the construction and operations of the BSPP.

2. Adequate parking for workers and supply laydown space would be provided on site.

3. During construction, conditions of certification would ensure the safe transportation to the BSPP site via I-10 of pieces of equipment that exceed roadway load or size limits.

4. BSPP would provide adequate emergency vehicle access roads.

5. With the implementation of conditions of certification, the potential for overhead transmission lines and birds attracted to the project's evaporation ponds to interfere with aircraft activities would be reduced to less than significant.

6. The project has the potential to result in significant impacts to local aviation related to glint and glare from the BSPP facilities. Conditions of certification would reduce these impacts, to the extent feasible.

7. Thermal plumes from the air cooled condensers could potentially interfere with aircraft that overfly the plumes at low altitude. Conditions of certification would reduce possible significant adverse impacts to aviation of thermal plumes, to the extent possible.

8. Conditions of certification would ensure the safe transport of hazardous materials to and from the project site. The presence of hazardous materials at the site has been determined not to constitute a substantial hazard to aircraft or to the public, except with respect to the limited potential for an aircraft accident at the site caused by glint or glare to result in an explosion and serious fire.

9. Projects, which have been constructed, are undergoing construction, or are otherwise reasonably foreseeable have been considered in the cumulative impact analyses of record. .

10. Conditions of certification are included to reduce and mitigate the transportation-related impacts of the BSPP to the extent possible, but it is undetermined if the proposed mitigation related to glint and glare would reduce the related cumulative impacts to less than significant levels.

CONCLUSIONS OF LAW

1. The BSPP would comply with all applicable LORS related to traffic and transportation, except those related to glint and glare.

2. Implementation of the following Conditions of Certification will result in mitigation of significant direct, indirect, or cumulative impacts to traffic and transportation, but may not lower all project-related impacts to less than significant levels.
3. A Statement of Overriding Considerations will be required for impacts associated with the project that will not be lowered to less than significant levels.

CONDITIONS OF CERTIFICATION

TRANS-1 **Parking and Staging** Prior to start of construction of the BSPP and all related facilities, the project owner shall develop and implement a parking and staging plan for all phases of project construction to ensure that all project-related parking occurs on-site or in designated off-site parking areas.

Verification: At least 60 days prior to start of site mobilization, the project owner shall submit the plan to the County of Riverside, City of Blythe, and BLM Operations Manager for review and comment, and to the CPM for review and approval. The requirements outlined in this Condition of Certification shall be coordinated with requirements outlined in Condition of Certification **TRANS-3**.

TRANS-2 **Traffic Control Plan** Prior to start of construction of the Blythe Solar Power Project (BSPP) the project owner shall prepare and implement a Traffic Control Plan (TCP) for the Blythe Solar Power Project construction and operation traffic. The TCP shall address the movement of workers, vehicles, and materials, including arrival and departure schedules, and designated workforce and delivery routes.

The project owner shall consult with the County of Riverside and theDepartment of Transportation (Caltrans) District 8 office in the preparation and implementation of the Traffic Control Plan and shall submit the proposed Traffic Control Plan to the County of Riverside and the Department of Transportation (Caltrans) District 8 office in sufficient time for review and comment and to the Energy Commission Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction and implementation of the plan.

The project owner shall provide a copy of any written comments from the County of Riverside and the Department of Transportation (Caltrans) District 8 office and any changes to the Traffic Control Plan to the CPM prior to the proposed start of construction.

The Traffic Control Plan shall include:

- A work schedule and end-of-shift departure plan designed to ensure that stacking does not occur on intersections necessary to enter and exit the project sites. The project owner shall consider using one or more of the following measures designed to prevent stacking: staggered work shifts, off-peak work schedules as well as restricting travel to and departures from each project site to 10 or fewer vehicles every three minutes during peak travel hours on Interstate 10.

  The project owner may use any of the above traffic measures or any other measures if the project owner can demonstrate that the implemented measures would ensure that Interstate 10 operates at a Level of Service (LOS) C or higher during the peak travel hours.
- Provisions for an incentive program such as an employer-sponsored Commuter Check Program to encourage construction workers to carpool and/or use van or bus service.
- Limitation on truck deliveries to the project sites to only off-peak hours to ensure adequate exit and entry at appropriate intersections.
- Provisions for redirection of construction traffic with a flag person as necessary to ensure traffic safety and minimize interruptions to non-construction-related traffic flow.
- Placement of signage, lighting, and traffic control device at the project construction site and laydown areas.
- Signage along eastbound and westbound appropriate roads and at the entrance of each of the I-10 northbound and southbound off-ramps at appropriate roads notifying drivers of construction traffic throughout the duration of the construction period.
- A heavy-haul plan designed to address the transport and delivery of heavy and oversized loads requiring permits from Department of Transportation (Caltrans) or other state and federal agencies.
- Parking for workforce and construction vehicles.
- Emergency vehicle access to the project site.

Verification: At least 60 calendar days prior to the start of construction, including any grading or site remediation on the power plant site or its associated easements, the project owner shall submit the proposed traffic control plan to the County of Riverside and the Department of Transportation (Caltrans) District 8 office for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the County of Riverside and the Department of Transportation (Caltrans) District 8 office requesting review and comment.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from either the County of Riverside and the Department of Transportation (Caltrans) District 8 office, along with any changes to the proposed traffic control plan to the CPM for review and approval.

TRANS-3 **Limitations on Vehicle Size and Weight** The project owner shall comply with limitations imposed by Caltrans District 8 office and other relevant jurisdictions including County of Riverside and City of Blythe on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for use of roadways.

Verification: At least 30 calendar days prior to the start of construction, the project owner shall provide copies of permits obtained from either the County of Riverside or the Caltrans District 8 office to the CPM. In the Monthly Compliance Reports (MCRs), the project owner shall submit copies of any permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-4 **Encroachment into Public Rights of Way** The project owner or its contractor shall comply with Caltrans and other relevant jurisdictions' limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In the monthly compliance reports (MCRs), the project owner shall submit copies of permits received during the reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-5 **Restoration of All Public Roads, Easements, and Rights-of-Way** The project owner shall restore all public roads, easements, and rights-of-way that have been damaged due to project-related construction activities to original or near-original condition in a timely manner, as directed by the CPM. Repairs and restoration of access roads may be required at any time during the construction phase of the project to assure safe ingress and egress.

Prior to the start of site mobilization, the project owner shall consult with the County of Riverside and Caltrans District 8 and notify them of the proposed schedule for project construction. The purpose of this notification is to request that the County of Riverside and Caltrans consider postponement of public right-of-way repair or

improvement activities in areas affected by project construction until construction is completed and to coordinate with the project owner regarding any concurrent construction-related activities that are planned or in progress and cannot be postponed.

Verification: At least 30 days prior to the start of mobilization, the project owner shall photograph or videotape all affected public roads, easements, and right-of-way segments and/or intersections and shall provide the CPM, the affected local jurisdictions and Caltrans (if applicable) with a copy of these images. The project owner shall rebuild, repair and maintain all public roads, easements, rights-of-way in a usable condition throughout the construction phase of the project.

Within 60 calendar days after completion of construction, the project owner shall meet with the CPM, the County of Riverside and Caltrans District 8 to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide a letter signed by the County of Riverside and Caltrans District 8 stating their satisfaction with the repairs to the CPM.

TRANS-6 Securing Permits/Licenses to Transport Hazardous Materials The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.

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

TRANS-7 Prior to the start of operation, the project owner shall seek and obtain FAA approval to insert comments or notations in the appropriate Aeronautical Charts, Airport/Facilities Directories, and Notice to Airmen (NOTAM) publication, to ensure that pilots are properly notified of the location of BSPP and the possible existence of thermal plumes and glint or glare from the solar arrays.

Verification: At least 30 days prior to the start of operation of any phase of the project, the project owner shall provide documentation that the AFD, NOTAM publication has been modified accordingly.

TRANS-8 Prior to the start of operation of any phase of the project, the project owner shall prepare an Avigation Easement in accordance with Appendix D of the California Airport Land Use Planning Handbook and have it signed by the Bureau of Land Management.

Verification: At least 60 days prior to the start of construction, the project owner shall submit a BLM-signed avigation easement to the CPM for review and approval. Once approved by the CPM, applicant shall send the Avigation Easement to the Riverside County Land Use Commission staff for review and recording purposes. Once recorded, applicant shall send a copy of the recorded document to the CPM.

TRANS-9 Prior to the start of construction, the project owner shall provide a plan to the CPM which includes the measures to be taken to reduce glint and glare to the maximum extent possible. The plan shall include the following measures designed to:

- Block end-loss reflections from reaching the sky where aircraft are operating by installing walls or screens at the north end of the parabolic trough collectors or by extending the heat collection elements beyond the north end of the collectors far enough to capture reflections when the sun is in the southern horizon, thus reducing the risk of end loss reflections.
- Ensure the mirrors are (1) brought out of stowage before sunrise and are aligned to catch the first rays of the morning sun; and (2) returned to stow position after sunset.
- Ensure mirrors are continuously monitored for malfunctions and to ensure that they remain properly aligned with the sun. Acquire appropriate equipment and establish procedures to cover inoperative or malfunctioning mirrors immediately after malfunctions are discovered to prevent the escape of errant reflections.
- Establish procedures to avoid glare while intentionally moving individual collectors off-axis to "dump" power incident on the heat collection elements during periods of high insolation. For example, if the plant operator needs to dump power and rotate several modules off-axis, the operator should start with the modules at the north-most and west-most parts of the collector field, which is furthest from the Blythe Airport to the southeast. For each module that is rotated off-axis, the operator should consider the nearest flight pattern; if it is to the east, then the module should be rotated to the west, and vice-versa. This rotating shall be done in a manner that minimizes the impact of glare on aircraft (for example, rotating modules furthest from the airport in a direction that is away from flight patterns).
- Establish procedures to avoid glare when rotating mirrors into a wind-stow position. Plant operators shall check for aircraft in the vicinity before moving the collectors into a wind-stow position.

Verification: Within 30 days prior to the start of construction, the project owner shall submit the required plan for CPM review and approval. The project owner

shall also notify the CPM when the required modifications have been made and are available for inspection.

In addition, the project owner shall compile data concerning the date and time of any malfunctions, the remedies taken to correct the malfunctions, and the success of the remedies. That information shall be included in the monthly compliance reports during construction and semi-annual compliance report during operation.

TRANS-10 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related glare complaints. The project owner or authorized agent shall:

- Use the Complaint Resolution Form (below), or functionally equivalent procedure acceptable to the CPM, to document and respond to each complaint.
- Attempt to contact the person or persons making the complaint within 24 hours. If not contacted within 24 hours, attempt to contact the person or persons for a reasonable time period, to be determined by the CPM.
- Conduct an investigation to determine the source of glare related to the complaint.
- If the glare is project related, take all feasible measures to reduce the glare at its source.
- As soon as the complaint has been resolved to the complainant's satisfaction, submit to the CPM a report in which the complaint as well as the actions taken to resolve the complaint are documented. The report shall include (1) a complaint summary, including the name and address of the complainant; (2) final results of glare reduction efforts; and (3) a signed statement by the complainant, if obtainable, in which complainant states that the glare problem is resolved to his or her satisfaction.

Verification: Within five business days of receiving a glare complaint, the project owner shall file with the City of Blythe Development Services Department, the Riverside County Planning Department, and the CPM a copy of the Glare Complaint Resolution Form, documenting the resolution of the complaint. If mitigation is required to resolve a complaint and the complaint is not resolved within three business days, the project owner shall submit an updated Glare Complaint Resolution Form when the mitigation is implemented.

TRANS-11 Prior to the start of construction of the transmission line, the project owner shall submit a plan identifying measures to be taken to mark and light the lines and poles beneath runway approaches, typical pattern entry corridors, and typical departure routes pursuant to criteria included in FAAC 70/7460-1K. The plan shall identify the

number and location of poles that are subject to the criteria and the exact measures to be taken to properly mark and light the poles in conformance with FAAC 70/7460.

Verification: At least 30 days prior to the start of transmission line mobilization, the project owner shall provide a construction plan for review and approval. Once the plan has been approved and implemented, the project owner shall provide documentation showing completion of the transmission line, including the required marking and lighting measures.

Form 1 - GLARE COMPLAINT RESOLUTION FORM

Blythe Solar Power Project **(09-AFC-6)**
COMPLAINT LOG NUMBER _____ **Complainant's name and address:**   **Phone number: _____**
Date complaint received: _____ **Time complaint received: _____**
Nature of complaint:
Definition of problem after investigation by plant personnel: **Date complainant first contacted: _____**
Description of corrective measures taken:
Complainant's signature: _____ Date: _____
Approximate installed cost of corrective measures: $ _____ **Date installation completed: _____** **Date first letter sent to complainant: _____ (copy attached)** **Date final letter sent to complainant: _____ (copy attached)**
This information is certified to be correct: **Plant Manager's Signature: _____**

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Approximate installed cost of corrective measures: $ _____ **Date installation completed:** _____ **Date first letter sent to complainant:** _____ **(copy attached)** **Date final letter sent to complainant:** _____ **(copy attached)**
This information is certified to be correct: **Plant Manager's Signature:** _____

(Attach additional pages and supporting documentation, as required).

C. SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

This topic reviews the demographic characteristics of population centers near the project site to evaluate the potential impacts of project-induced population increases and the fiscal and physical capacities of local communities to accommodate population increases. The project's economic benefits, including local project-related expenditures, property and sales tax revenues, as well as school impact fees, are also discussed. Additionally, an environmental justice screening analysis is included to determine whether the project will result in disproportionate impacts on minority and/or low-income populations and, if so, whether mitigation is required.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Under CEQA Guidelines, a project may have a significant effect on socioeconomics if it would:

- Induce substantial population growth in an area, either directly or indirectly;
- Displace substantial numbers of people and/or existing housing, necessitating the construction of replacement housing elsewhere;
- Cause a substantial change in revenue for local businesses or government agencies; or
- Adversely impact acceptable levels of service for law enforcement, schools, and hospitals. (Ex. 203, p. C.8-2.)

The project site is in a sparsely populated area about 100 miles east of the City of Riverside. According to Staff, the most appropriate study area for evaluating the project's socioeconomic impacts includes the small, local communities nearest the site. These local communities include the City of Blythe, CA (approximately 8 miles east of the site); the City of Ehrenburg, AZ (approximately 12 miles east of the site); and the City of Quartzsite, AZ (approximately 25 miles east of the site.) The local economic structure in this area is based on tourism, mining, agriculture, and infrastructure since these rural/suburban locations are closely tied to the Interstate 10 (I-10) travel route between Los Angeles, CA and Phoenix, AZ. (Ex. 203, p. C.8-4.) The most recently published population and housing data for these communities are shown in Staff's Socioeconomics and Environmental Justice Table 3, replicated below.

Socioeconomics and Environmenal Justice Table 3
Population and Housing Profile of the Local Study Area

Area	Year		
	2008 Population	2008 Total Housing Units	2008 Vacancy Rate Percentage (%)
Blythe, CA	21,627	5,444	16.1
Ehrenburg, AZ	1,409	824[1]	34.9[1]
Quartzsite, AZ	3,745	3,186[1]	41.9[1]
Notes: [1] Data from 2000.			

(Ex. 203, p. C.8-4.)

1. Impacts

Construction of Blythe Solar will take place over a 69-month period. (Ex. 203, p. C,8-6.)

Over the 69-month construction period, an average of approximately 604 daily construction workers, with a peak daily workforce of 1004, will be required depending on the month and phase of development. (Ex. 203, p. C.8-6)

The evidence presumes the workforce will mostly come from the Riverside/San Bernardino/Ontario Metropolitan Statistical Area (MSA), which includes both Riverside and San Bernardino Counties. Since local workforce data were not available for nearby La Paz and Maricopa Counties in Arizona, data for the entire State of Arizona were reviewed because these counties represent the largest population centers in Arizona. According to the record, there is sufficient local availability of a construction workforce within the Riverside/San Bernardino/Ontario MSA and in Arizona to serve the project's direct construction labor needs. (Ex. 203, pp. C.8-6—C.8-8, Socioeconomics and Environmental Justice Table 4.)

According to Staff, construction workers tend to commute daily from their homes within a two-hour commuting distance. The project's peak requirement of 1004 construction workers represents less than one percent of the total available construction workforce within the regional MSA. Assuming that the majority of workers will commute up to two hours to the site, it is expected that no permanent in-migration will occur as a result of project-related construction activities. Therefore, project construction will not result in significant impacts to

existing population levels or employment distribution within the study area. (Ex. 203, p. C.8-7)

During the construction period, it is possible that some construction workers will temporarily relocate to the project area and stay in local hotels, motels, or other rental properties during the workweek but return to their homes on weekends. Staff assumed that about 150 construction workers could potentially seek local lodging in the study area based on temporary and fluctuating need. The evidence indicates there is an adequate supply of hotels/motels and rental properties in Blythe and other communities located from 1 to 1.5 hours drive from the project site to accommodate weekly commuters and/or temporary residents. Based on the availability of short-term housing in the local study area, the maximum temporary peak housing demand of 150 workers would not induce substantial growth or concentration of population in the local study area nor encourage workers and their families to permanently relocate to the area. (Ex. 203, pp. C.8–7--C.8–10.)

Applicant expects to hire about 221 permanent, full-time employees for project operation. The evidence shows that approximately 55 of those employees would seek permanent housing closer to the project site than their current residences. The evidence also shows that there is an abundance of housing units available within commuting distance. We therefore find that the addition of permanent Blythe Solar employees to either the local or regional area would not permanently induce substantial growth or concentration of population in excess of available housing or forecasted growth. (Exs. 1, p. 5.11-25; 203, pp. C.8-10 – C.8-11.)

Since project-induced population increases will be minimal, construction and operation of the project will not result in significant adverse impacts on schools, parks and recreation, public utilities, law enforcement, or emergency services in the local communities. (Ex. 203, pp. C.8-12 to C.8-17.)

Section 17620 of the California Education Code allows school districts to levy school development fees for new commercial or industrial construction within their boundaries. (See also Govt. Code, §§ 65996-65997.)

The Blythe Solar site is served by the Desert Center and Palo Verde Unified School Districts. Applicant has indicated that all components of the project would be constructed entirely on BLM land. Therefore, no private land or lands within the two districts would be affected and therefore, the provisions of Education Code Section 17620 would not apply. (Ex. 203, pp. C.8-14 – C.8-15.)

2. Section 25523(h) Public Benefit Findings

Public Resources Code section 25523(h) requires discussion of the project's public benefits. The project's fiscal benefits, based on property value, payroll, local purchases of equipment, supplies, and associated expenses, are set forth in the AFC, Exhibit 1, at pages 5.11-29 to 5.11-31, and are summarized in Staff's Socioeconomics and Environmental Justice Table 10, replicated below.

3. Environmental Justice Screening Analysis

California law defines environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." (Govt. Code § 65040.12(e); Pub. Res. Code, § 71116(j).)

Federal Executive Order 12898 (1994), "*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*," requires state and federal agencies to incorporate environmental justice concerns in their environmental analyses. The USEPA's *Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits* (USEPA, Aug. 2000) calls for a two-step analysis: (1) does the potentially affected community include minority and/or low-income populations and, if it does, (2) are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the community. See also, *Title VI Public Involvement Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs*, 71 Fed. Reg. 14207 et seq. (USEPA, Mar. 21, 2006).

According to the USEPA's *Guidance*, an environmental justice population exists if the minority and/or low-income populations of the affected area constitute 50 percent or more of the general population or if the minority population percentage in the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. (Ex. 1, App. 5.10B.)

We have previously found that the project will not cause a significant adverse direct, indirect, or cumulative impact on population, housing, or public services. It follows that, because there would be no adverse project-related socioeconomic impacts, minority and low-income populations would not be disproportionately impacted. (Ex. 203, p. C.8-35)

Socioeconomics and Environmental Justice Table 10
BSPP Economic Benefits (2009 dollars)

Fiscal Benefits	
Estimated annual property taxes	$400,000[1]
State and local sales taxes: Construction	$910,000
State and local sales taxes: Operation	$840,000
School Impact Fee	$0 (CEC 2010a)
Non-Fiscal Benefits	
Construction materials and supplies	$60.0 million
Operations and maintenance supplies	$9.6 million
Direct, Indirect, and Induced Benefits	
Estimated Direct Employment	
Construction	604 jobs (monthly average)
Income	$67.0 million
Operation	221 jobs
Income	$9.4 million
Estimated Indirect Employment	
Construction	309 jobs
Income	$15.0 million
Operation	71 jobs
Income	$5.0 million
Estimated Induced Employment	
Construction	209 jobs
Income	$14.0 million
Operation	68 jobs
Income	$4.0 million

Notes: [1] At present, there is no property tax assessed on solar components (mirrors, solar boiler, heat exchangers) improvements by law (Section 73 of the California Taxation and Revenue Code). Components included under the exemption include storage devices, power conditioning equipment, transfer equipment, and parts. The first operational year would generate an estimated $400,000 in annual property taxes.

Source: Ex. 203, p. C.8-34

4. Cumulative Impacts

Cumulative socioeconomics impacts may occur when overlapping construction schedules for several projects in the same vicinity create a demand for workers that cannot be met by the local labor force, resulting in an influx of non-local workers and their dependents. Operational cumulative socioeconomic impacts could occur when the development of multiple projects significantly impacts the population of an area thus resulting in a housing shortage, change in local employment conditions, and an increased demand on public services.
(Ex. 203, p. C.8-26)

a. Construction

Foreseeable development in the project area includes primarily renewable energy electrical generation and transmission infrastructure projects. With the large number of renewable energy projects occurring within the BSPP regional study area, it is possible that some overlap of construction phasing could occur between the BSPP and the cumulative development projects. Staff's Socioeconomics and Environmental Justice Table 8, reproduced below, presents the most recently published data (Year 2006-2016 projections) on labor force characteristics for the cumulative regional study area pertaining to electrical energy project construction labor skill sets and compares those to major cumulative projects located near the BSPP along the I-10 corridor, including the Palen Solar Power Project (PSPP), Genesis Solar Energy Project (GSEP), Rice Solar Energy Project (RSEP), and the Desert Sunlight PV Project (DSPV).

Socioeconomics and Environmental Justice Table 8
Cumulative Project Construction Employment Needs

Trade	BSPP Total # of Workers for Project Construction by Craft – Peak Month (Month 16)	PSPP Total # of Workers for Project Construction by Craft – Peak Month (Month 17)	GSEP Total # of Workers for Project Construction by Craft – Peak Month (Month 16)	RSEP Total # of Workers for Project Construction by Craft – Peak Month (Month 12)	DSPV Total # of Workers for Project Construction by Craft – Peak Month (Months 6-8)	*TOTAL*	Riverside/San Bernardino/ Ontario MSA 2006	Riverside/San Bernardino/ Ontario MSA 2016
Surveyor	16	12	0	0	N/A	*28*	1,420	1,670
Operator	94	90	0	0	N/A	*184*	4,790	5,460
Laborer	229	185	96	52	N/A	*637*	27,930[1]	32,080[1]
Truck Driver	28	35	0	0	N/A	*63*	27,930[1]	32,080[1]
Oiler	4	4	0	0	N/A	*8*	27,930[1]	32,080[1]
Carpenter	77	100	44	50	N/A	*300*	28,850	32,390
Boilermaker	9	11	0	0	N/A	*20*	4,630[2]	5,330[2]
Paving Crew	0	0	0	0	N/A	*0*	630	720
Pipe Fitter	290	326	200	80	N/A	*968*	4,630	5,330
Electrician	81	150	105	56	N/A	*449*	6,740	7,600
Cement Finisher	80	100	4	6	N/A	*197*	4,110	4,690
Ironworker	42	59	70	32	N/A	*246*	19,460	20,800
Millwright	18	25	22	16	N/A	*153*	2,630[3]	2,960[3]
Tradesman	8	10	382[6]	105[7]	N/A	*544*	27,930[1]	32,080[1]
Project Manager	2	3	0	0	N/A	*5*	10,990[4]	12,380[4]
Construction Manager	2	3	0	5	N/A	*10*	4,380	5,110
PM Assistant	2	4	0	0	N/A	*6*	10,990[4]	12,380[4]
Support	2	4	0	0	N/A	*6*	120[5]	130[5]
Support Assistant	2	4	0	0	N/A	*6*	120[5]	130[5]
Engineer	7	10	60	36	N/A	*127*	1,370	1,600
Timekeeper	2	3	0	0	N/A	*5*	10,990[4]	12,380[4]

Trade	BSPP Total # of Workers for Project Construction by Craft – Peak Month (Month 16)	PSPP Total # of Workers for Project Construction by Craft – Peak Month (Month 17)	GSEP Total # of Workers for Project Construction by Craft – Peak Month (Month 16)	RSEP Total # of Workers for Project Construction by Craft – Peak Month (Month 12)	DSPV Total # of Workers for Project Construction by Craft – Peak Month (Months 6-8)	*TOTAL*	Riverside/San Bernardino/ Ontario MSA 2006	Riverside/San Bernardino/ Ontario MSA 2016
Administrator	5	6	0	0	N/A	*11*	10,990[4]	12,380[4]
Welder	1	1	0	0	N/A	*2*	3,960	4,640
Total Peak Month	*1,001*	*1,145*	*983*	*438*	*622*	*4,189*	--	--
Local Housing Need[10]	*150*	*172*	*147*	*0*[11]	*93*	*562*	--	--

Notes: [1] The "Construction Laborers" category was used; [2] The "Plumbers, Pipefitters, and Steamfitters" category was used; [3] The "Machinists" category was used; [4] The "Supervisors, Construction and Extraction Workers" category was used; [5] The "Helpers- Construction Trades" category was used; [6] Includes: insulators, painters, teamsters, and 'Solar Field Craft". The solar field craft workers include an estimated five solar field installation crews, with each crew including a Foreman, Equipment Operators, Laborers, Electricians, Ironworkers, Carpenters, Masons, and Pipefitter/Welders; [7] Includes Teamesters, Heliostat Assembly Craft, Construction Staff, Subcontractors, and Technical Advisors; [8] Includes Insulators; [9] Includes Painters, Sheetmetal Workers, and Teamsters; [10] Assumes 15% of peak month workforce may seek temporary local housing during workweek; [11] On-site worker camp is provided for RSEP, providing housing for up to 300 trailers, eliminating local housing need; N/A: labor by craft data not available from BLM.
Source: Solar Millennium 2009a and b, GSEP 2009a, SR 2009a, and BLM 2010c.

Source: Ex. 203, p. C.8-29

All cumulative projects identified in SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE Table 8 would be expected to draw on the large regional construction workforce in and Riverside/San Bernardino/Ontario MSA, and as shown the MSA offers sufficient regional labor by skill set for all projects from within the regional study area. As indicated by Socioeconomics and Environmental Justice Table 8, cumulative development of these projects in a worst-case scenario of overlapping peak period months could result in the influx of 562 construction workers seeking local lodging within the area as a result of the large renewable energy projects being constructed. We find this scenario unlikely due to construction scheduling and peak months shown in Socioeconomics and Environmental Justice Table 8. While this in-flux of workers could impact the availability of local hotel/motel rooms within the local and regional study area, a high number of short-term housing units are available within increasing commute distances from the local area. We find that ample temporary short-term housing is available for workers seeking short-term local lodging and that cumulative project construction within the local study area would not significantly impact the population projections or require the need for new or expanded housing within the local study area. We therefore find that construction of Blythe Solar will not contribute to adverse cumulative socioeconomic impacts. (Ex. 203, p. C.8-31.)

In addition, short-term construction-related spending activities of the project will result in cumulative economic benefits for the study area. The cumulative benefits will increase when tax revenues and spending resulting from construction and operation of the BSPP are combined with spending, and local revenues accrued from other reasonably foreseeable development projects. (*Id*.)

b. Operation

Operation of the BSPP could potentially result in the permanent relocation of 55 workers into the local study area. Adequate permanent housing units are available to operational employees who choose to relocate locally to work at other foreseeable development projects. Therefore, the BSPP is not expected to contribute cumulatively to an increased demand for new housing in the area. (Ex. 203, p. C.8-32.)

It is reasonable to assume that any new cumulative demand on schools by permanent relocations to the local study area would be met to some extent through the payment of property taxes by the cumulative projects themselves as well as any home purchases. These property tax revenues contribute to local

public safety, school, and recreational facility funding. As hospitals are private supply and demand based facilities, it is assumed that the cumulative increase in local population can be adequately served by local study area emergency medical facilities. We therefore find that operation of the BSPP would not contribute cumulatively to an increase in the local population or require the need for new or expanded law enforcement, school, recreational, or emergency medical facilities or staff levels within the BSPP regional or local study areas. (Ex. 203, p. C.8-33.)

c. Decommissioning

Based on the cumulative impact analysis for BSPP construction activities, it is likely the impacts due to decommissioning of the BSPP would not contribute to cumulative impacts related to Socioeconomics because it is reasonable to assume the closure and decommissioning workforce would be drawn from the same regional and local study areas. However, impacts to future existing population levels, housing, or public services would be speculative because decommissioning activities will not likely occur for at least 30 years in the future.

FINDINGS OF FACT

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

1. A large labor pool within a two-hour commuting distance is available for construction and operation of the project.

2. Over the 69-month construction period, an average of approximately 604 daily construction workers, with a peak daily workforce of 1004, will be required depending on the month and phase of development.

3. The project will hire about 221 permanent, full-time employees from the local area for project operations.

4. The project will not cause an influx of a significant number of construction or operation workers to permanently relocate to the local area.

5. There is an adequate supply of hotels/motels and rental properties within the project vicinity to accommodate workers who stay in the area temporarily during the week and commute to their homes on the weekend.

6. The project will not result in significant adverse effects on local employment, housing, schools, public utilities, parks and recreation, law enforcement, or emergency services.

7. The anticipated construction payrolls, the local purchases of materials and supplies, and the sales tax revenues generated by the expenditures will have a beneficial effect on the local and regional economy.

8. The anticipated annual operations payroll, annual local capital expenditures and materials, and indirect economic effects will have a beneficial effect on the local and regional economy.

9. The project will generate property tax revenues of approximately $400,000 per year.

10. The project will provide direct, indirect, and induced economic benefits to Riverside County and surrounding communities.

11. The project will not create disproportionate impacts on minority and/or low-income populations because the mitigated project does not result in any significant health or environmental impacts to any population in the project vicinity.

12. Construction and operation of the project will not result in any direct, indirect, or cumulative significant adverse socioeconomic impacts.

CONCLUSIONS OF LAW

1. We therefore conclude that implementation of all Conditions of Certification in this Decision ensures that the project will comply with all applicable laws, ordinances, regulations, and standards relating to socioeconomic factors as identified in the pertinent portions of Appendix A.

2. The evidence of record contains an adequate analysis of socioeconomic effects related to the project and establishes that the project will not create any significant adverse socioeconomic effects as defined under the National Environmental Policy Act or the California Environmental Quality Act.

3. The evidence of record contains an adequate analysis of potential socioeconomic effects in accordance with federal and state guidelines on environmental justice and establishes that the project will not create any disproportionate adverse effects on minority or low-income populations.

CONDITION OF CERTIFICATION

No conditions of certification/mitigation measures are required as all potential socioeconomic impacts associated with the BSPP and alternatives would be less than significant.

D. NOISE AND VIBRATION

The construction and operation of any power plant will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts. In some cases, vibration may be produced as a result of construction activities such as blasting or pile driving; these activities have the potential to cause structural damage and annoyance. The evidence summarized below was uncontested and evaluates whether noise and vibration produced during project construction and operation will be mitigated sufficiently to comply with applicable law and avoid the creation of significant adverse impacts. (7/15/10 RT 22:16 – 22:22; Ex. 200, p. C.7-1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The BSPP will be constructed on 7,030 acres of a 9,400-acre site in Riverside County. The land use of the BSPP site is undeveloped open space, and the surrounding land uses include undeveloped land and a small developed private parcel adjacent and to the south. The primary noise source in the project area is vehicle traffic on I-10. Secondary noise sources include aircraft operations associated with the Blythe Airport, agricultural operations, the Blythe Skeet and Trap Shooting Club, and individual vehicles operating on surrounding local roadways. Noise levels at the nearest residence are dominated by wind, which ebbs and flows throughout the day as the temperature climbs and drops. The only identified sensitive noise receptor in the vicinity of the project is a mobile home located approximately 725 feet east and 775 feet south of the project site boundary. (Ex. 200, p. C.7-5.)

Federal and State Laws regulate worker noise exposure. The Noise Element of Riverside County's General Plan and the County's Noise Ordinance set property line sound level limits for sensitive receptors. (Ex. 200, pp. C.7-2 to C.7-4.)

For residential land uses, the County Noise/Land Use Compatibility Guidelines categorize noise levels of up to 60 dBA day/night average sound level (Ldn) or CNEL as "normally acceptable" and up to 70 dBA Ldn or CNEL as "conditionally acceptable." (Ex. 200, p. C.7-4).

The County Noise Ordinance limits operational noise on any property that affects the exterior noise level on any other occupied property to 55 dBA during the daytime hours and 45 dBA during the nighttime hours, for noise-sensitive

receptors within a very low density rural area, such the area surrounding the project site.

This Noise Ordinance also limits the hours of construction activities to the following hours: (Ex. 200, p. C.7-4.)

- Monday through Friday
    - o June through September 6:00 a.m. to 7:00 p.m.
    - o October through May 6:00 a.m. to 6:00 p.m.
- Saturday 9:00 a.m. to 5:00 p.m.
- Sunday and Holidays Not allowed

CEQA Guidelines set forth characteristics of noise impacts that may indicate potentially significant effects from project-related noise, such as "a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project." (Cal. Code Regs., tit. 14, § 15000 et seq., Appen. G, Section XI.) In accordance with this standard, the Commission uses the significance threshold of 5 dBA when project-related noise emissions exceed existing ambient noise levels at the nearest sensitive receptor. We believe that an increase in background noise levels of up to 5 dBA in a residential setting is insignificant and that an increase of more than 10 dBA is clearly significant. An increase of between 5 dBA and 10 dBA may be considered adverse, but could be either significant or insignificant depending upon the particular circumstances of a given case. (Ex. 200, pp. C.7-1 to C.7-2.)

Factors considered in determining the significance of an adverse impact as characterized above include: (1) the resulting noise level; (2) the duration and frequency of the noise; (3) the number of people affected; and (4) the land use designation of the affected receptor sites. Noise due to construction activities is usually considered insignificant in terms of CEQA compliance if the construction activity is temporary and the use of heavy equipment and noisy activities is limited to day-time hours. (Ex. 200, p. C.7-2.)

The evidence contains an ambient noise survey conducted by Applicant on June 2 to 4, 2009. This survey monitored existing noise levels near the closest residence to the project site. This is a single-family residence located approximately 725 feet east and 775 feet south of the project site boundary. (Ex. 200, p. C.7-5.)

The existing measured ambient noise levels are shown in Table 1, below.

NOISE Table 1
Summary of Measured Noise Levels

Measurement Sites	Measured Noise Levels, dBA	
	Average During Daytime Hours L_{eq}	Average During Nighttime Hours L_{90}/L_{eq}
LT, Nearest Residence	45	36

Source: Ex. 200, p. C.7-6.

The evidence further shows the effects the project's short-term construction activities and its long-term operation will have upon ambient levels.

1. Construction

Construction noise is a temporary event. (Ex. 200, p. C.7-6.) In this case, it is expected to occur over a 69-month period. (Ex. 1, p. 5.8-1.) Construction of related linear facilities typically moves along at a rapid pace, thus not subjecting any one receptor to noise impacts for more than two or three days. (Ex. 200, p. C.7-8.)

Construction noise levels and predicted increases are shown on Table 2, below.

NOISE Table 2: Predicted Construction Noise Level

Receptor	Highest Construction Noise Level L_{eq} (dBA) [1]	Measured Existing Ambient, Average Daytime L_{eq} (dBA) [2]	Cumulative, Using Highest Noise Level of 48 dBA	Change
LT	61	45	61	+16

Source: Ex. 200, p. C.7-6.

The applicable local noise LORS do not limit the loudness of construction noise. Condition of Certification **NOISE-6** limits construction within one-quarter mile of an existing residence to the days and times specified in the Riverside County Noise Ordinance. Therefore, the noise impacts of the BSPP project construction activities would comply with the noise LORS. (Ex. 200, pp. C.7-6 to C.7-7.)

As seen in **NOISE Table 2** above, last column, construction noise would elevate the existing ambient noise level at LT by 16 dBA, a considerable increase. Construction activities within an area that would potentially considerably impact the nearest residential receptor would not last more than several months, and are therefore considered temporary. (Ex. 200, p. C.7-7.)

Pile driving is not anticipated to be necessary for construction of the BSPP project; therefore, no vibration impacts are expected. (Ex. 200, p. C.7-8.)

To ensure construction noise levels will not be disruptive at the nearest receptor, in addition to Condition of Certification **NOISE-6**, we have adopted Conditions of Certification **NOISE-1** and **NOISE-2**. These two Conditions establish a notification and complaint process to resolve issues arising from any excessive construction noise. (Ex. 200, pp. C.7-17 to 18.)

High pressure steam (or compressed air) blows, used to flush the steam piping at the end of project construction, are typically the loudest noise encountered during construction. A series of short steam blows, lasting two or three minutes each, are performed several times daily over a period of two or three weeks. High pressure steam blows, if unsilenced, can typically produce noise levels as high as 129 dBA at a distance of 50 feet; this would amount to roughly 100 dBA at LT. With a silencer installed on the steam blow piping, noise levels are commonly attenuated to 89 dBA at 50 feet. A quieter steam blow process, referred to as low pressure steam blow, utilizes lower pressure steam over a continuous period of about 36 hours, with resulting noise levels of about 86 dBA at 50 feet. (Ex. 200, pp. C.7-7 to C.7-8.)

To ensure that steam blows will not be disruptive at the nearest receptor, we have adopted Condition of Certification **NOISE-7**, which establishes restrictions and notification requirements on steam blow processes. (Ex. 200, p. C.7-20.) Overall, the evidence establishes that construction noise impacts at affected receptors will be less than significant. (Ex. 200, p. C.7-7.)

To protect construction workers from injury due to excessive noise, Condition **NOISE-3** requires the project owner to implement a noise control program consistent with OSHA and Cal/OSHA requirements. (Ex. 200, p. C.7-18.)

2. Operations

The primary noise source of the BSPP plants would be the four power blocks (one for each 250 MW unit), where the steam turbine generator, air-cooled condenser, electric transformer, and various pumps and fans would be located. (Ex. 200, p. C.7-8.) The evidence indicates that operational noise levels will comply with the limit established by Riverside County. (Ex. 200, p. C.7-9.) The projected operational noise level is 1 dBA above the ambient level; as the increase is less than 5 dBA, it is considered less than significant. (Ex. 200, pp. C.7-9 to C.7-10.) Similarly, potential nighttime noise levels due to maintenance will be substantially lower than the average nighttime ambient noise level. (Ex. 200, pp. C.7-9 to C.7-10.) Condition **NOISE-4** ensures that project operations will not exceed 49 dBA L_{eq} measured at or near monitoring location LT. (Ex. 200, p. C.7-18.)

The evidence also establishes that strong tonal noises could be a source of annoyance. To avoid the creation of pure-tone noises, the project owner will balance the noise emissions of various power plant features. Condition **NOISE-4** ensures that tonal noises will not cause annoyances. (Ex. 200, p. C.7-10.)

As with construction activities, operational and maintenance activities will meet OSHA and Cal/OSHA standards to protect workers. (Condition of Certification **NOISE-5;** Ex. 200, p. C.7-11.) The evidence also establishes that operational vibration – whether ground borne or air borne – will be undetectable by potential receptors. (*Id*.) Water and gas pipes would be silent during plant operation, and noise effects from electrical interconnection lines would be inaudible to receptors. (Ex. 200, p. C.7-10.)

There are no future foreseeable projects close to the BSPP that could create cumulative noise impacts. (Ex. 200, p. C.7-15.)

The evidence addresses impacts of the Reduced Acreage Alternative and various No Project/No Action Alternatives in regard to this topic area. None of the Alternatives would substantially alter the level of noise impacts posed by the project. The BSPP does not create significant adverse impacts in this topic area. Therefore, it is not necessary to consider any of the Project's Alternatives as a means of lessening the project's impacts to below a level of significance. (Ex. 200, pp. C.7-12 to C.7-14.)

FINDINGS OF FACT

Based on the evidence of record, we make the following findings.

1. The nearest noise receptor is a single-family residence located approximately 725 feet east and 775 feet south of the project site boundary.

2. Operation of the BSPP will not significantly increase noise levels above existing ambient levels at the nearest receptor.

3. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by sound reduction devices, limiting construction to day-time hours, and providing a notice and complaint process to the public.

4. Project construction will increase noise levels at the nearest sensitive receptor. The evidence establishes that these increases will be temporary and not significant.

5. Adherence to Condition of Certification **NOISE-6** will assure that noise from construction activities is reduced to below a level of significance.

6. Adherence to Condition of Certification **NOISE-7** will assure that noise from steam blows is reduced to below a level of significance.

7. The project owner will implement measures to protect workers from injury due to excessive noise levels during both construction and operation.

8. The BSPP will not create ground or air borne vibrations which will cause significant off-site impacts.

9. Implementation of the Conditions of Certification, below, ensure that project-related noise emissions will not cause significant adverse impacts to the closest noise receptor.

10. The noise from the BSPP will not create a significant adverse cumulative impact.

11. The record addresses the impacts of the Reduced Acreage Alternative and various No Project/No Action Alternatives in regard to this topic area.

12. None of the Alternatives mentioned above would result in an increased construction or operational noise level at the nearest sensitive receptors.

13. Implementation of any of the Alternatives mentioned above is not necessary or preferable as a means of reducing project related impacts to below a level of significance.

CONCLUSIONS OF LAW

1. The Commission concludes that implementation of the following Conditions of Certification ensure that the BSPP will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of **Appendix A** of this Decision.

2. The project will not cause significant indirect, direct, or cumulative adverse noise impacts.

CONDITIONS OF CERTIFICATION

PUBLIC NOTIFICATION PROCESS

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

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

NOISE COMPLAINT PROCESS

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

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

Verification: Within five days of receiving a noise complaint, the project owner shall file a Noise Complaint Resolution Form, shown below, with both the local jurisdiction and the CPM, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is performed and complete.

EMPLOYEE NOISE CONTROL PROGRAM

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance to the applicable OSHA and Cal-OSHA standards.

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

NOISE RESTRICTIONS

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the project will not cause the noise levels due to plant operation alone, during the daytime hours of 7 a.m. to 10 p.m. to exceed an average of 49 dBA L_{eq} measured at or near monitoring location LT.

No new pure-tone components shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

A. When the project first achieves a sustained output of 85% or greater of rated capacity, the project owner shall conduct a 25-hour

community noise survey at monitoring location LT, or at a closer location acceptable to the CPM. This survey shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

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

B. If the results from the noise survey indicate that the power plant noise at the affected receptor site exceeds the above value during the above time period, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 30 days of the project first achieving a sustained output of 85% or greater of rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

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

OCCUPATIONAL NOISE SURVEY

NOISE-5 Following the project's attainment of a sustained output of 85% or greater of its rated capacity, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section

1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

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

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

CONSTRUCTION RESTRICTIONS

NOISE-6 Heavy equipment operation and noisy construction work relating to any project features within ¼ mile of an existing residence shall be restricted to the times delineated below, unless a special permit has been issued by the County of Riverside:

Mondays through Fridays:	
June through September:	6 a.m. to 7 p.m.
October through May:	6 a.m. to 6 p.m.
Saturdays:	9 a.m. to 5 p.m.
Sundays and Federal holidays:	No Construction Allowed

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

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

NOISE-7 If a traditional, high-pressure steam blow process is used the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 89 dBA measured at a distance of 100 feet. The steam blows shall be conducted between 8:00 a.m. and 5:00 p.m. unless arranged with the CPM such that offsite impacts would not cause annoyance to receptors. If a low-pressure, continuous steam blow process is used, the project owner shall submit to the CPM a description of the process, with expected noise levels and planned hours of steam blow operation.

Verification: At least 15 days prior to the first steam blow, the project owner shall notify all residents or business owners within one mile of the project site boundary. The notification may be in the form of letters, phone calls, fliers, or other effective means as approved by the CPM. The notification shall include a

description of the purpose and nature of the steam blow(s), the planned schedule, expected sound levels, and explanation that it is a one-time activity and not part of normal plant operation.

NOISE COMPLAINT RESOLUTION FORM

Blythe Solar Power Project
(09-AFC-6)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____
Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____

Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____

Final noise levels at complainant's property: _____ dBA Date: _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____
Date installation completed: _____
Date first letter sent to complainant: _____ (copy attached)
Date final letter sent to complainant: _____ (copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____

(Attach additional pages and supporting documentation, as required).

E. VISUAL RESOURCES

This section addresses the visual resources associated with the Blythe Solar Power Project (BSPP), including potential impacts related to Project construction, operation and decommissioning. Visual resources are the features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts in order to determine whether the project has the potential to cause substantial degradation to the existing visual character of the site and its surroundings, substantially affect a scenic vista or damage scenic resources, or create a new source of substantial light or glare affecting day or nighttime views in the area. (Cal. Code Regs., tit. 14 § 15382, Appen. G.)

Key Observation Points (KOPs) represent the most critical locations from which the project would be seen. These reflect, in particular, those key sensitive viewer groups most likely to be affected by the project. Assessments of project impact are determined from these KOPs. (Ex. 200, pp. C.12-2 and C.12-3.)

KOPs are rated from low to high using eight factors: visual quality, viewer concern, visibility, number of viewers, duration of view, contrast, dominance, and view blockage.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed Blythe Solar Power Project (BSPP or Project) site is located north of Interstate 10 (I-10), approximately eight miles northwest of Blythe in eastern Riverside County on the Palo Verde Mesa. The mesa is a broad alluvial plain characterized by a mostly undeveloped desert landscape of level terrain and sparse desert scrub vegetation. It is situated among the McCoy Mountains to the west, Little Maria Mountains to the north, the Big Maria Mountains to the northeast and the Mule Mountains to the south. The mountain ranges add visual variety to the otherwise flat desert landscape.

The project area view shed (area where the project would be visible from) includes Blythe Airport and I-10 to the south, the McCoy Mountains to the west, the Little Maria Mountains and Palen McCoy Wilderness to the north, the Big Maria Mountains and Wilderness to the northeast, and the Mule Mountains (and Area of Critical Environmental Concern (ACEC) to the south. From the east, the project would also be visible from Palo Verde Community College and the Mesa Bluffs Golf Community – both situated to the northwest of Blythe. The site would

also be visible from BLM's Midland Long-Term Visitor Area and Campground – both located northeast of the site, off Midland Road.

The project site consists primarily of desert scrub but also includes portions of McCoy Wash with desert dry wash woodlands. The mesa is visually dominated on the west by the steeply rising (to 2,830 feet) rugged McCoy Mountains (Ex. 1, p. 5.15-6). There are numerous BLM established four wheel drive (4WD) roads and tracks that provide recreational access to the mesa and the mountains beyond. **Visual Resources Figure 1** shows the location of the site relative to these roads and topographic features, as well as depicting project visibility. The natural features of the project site form a strong, coherent pattern, and the visual integrity in the natural landscape is high (Ex. 1, p. 5.15-8). The area immediately surrounding the project site is lightly populated (Ex. 1, p. 5.15-9).

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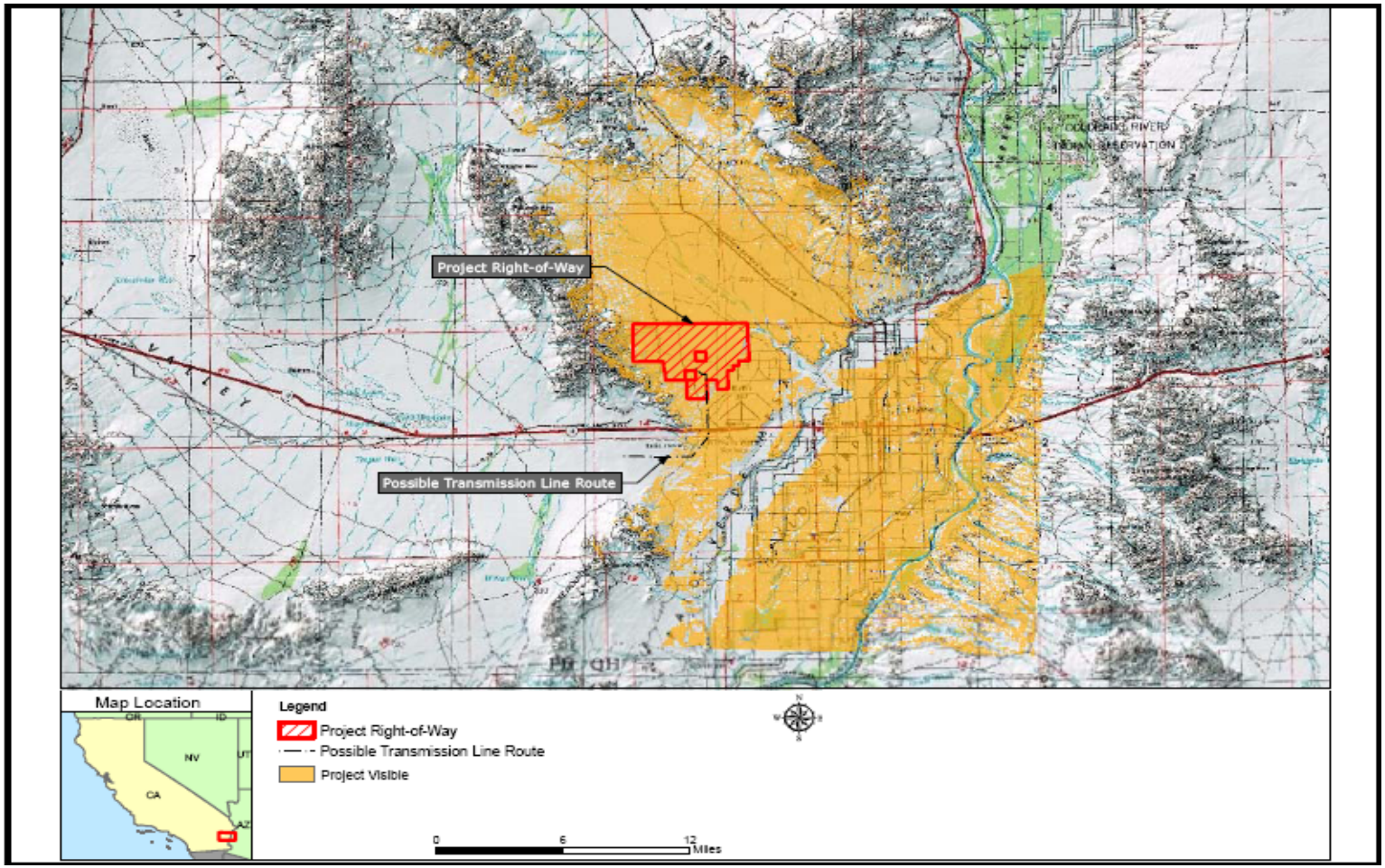
VISUAL RESOURCES - FIGURE 1

Blythe Solar Power Project – Project Setting and Viewshed Map for BSPP



Source: Exhibit 200.

The project will site facilities over approximately 7,025 acres, including 7,082 acres on site and 123 acres within associated linear facility corridors and a planned substation. Primary BSPP features with potential visual effect include:

1. 140-foot steel transmission line poles;
2. 120-foot air cooled condenser
3. 80-foot heat transfer fluid heater
4. 50-foot take off tower;
5. 40-foot high pipe rack;
6. 32-foot high cooling tower and auxiliary boiler;
7. 30-foot high warehouse
8. 24-foot buildings including administration, control, weather station, lab, and electrical structures;
9. 24-foot facilities including demineralized water tank, treated water tank, vacuum system, compressed air system, chemical injection skid, and generator step-up transformers;
10. additional smaller structures, parking lots, chain-link fencing and wind-fencing along west and east sides of the facility; and
11. parabolic trough mirrors.

(Ex. 200, p. C.12-16)

1. Direct/Indirect Impacts and Mitigation

a. Construction Impacts

Construction activities will occur over approximately 69 months. Construction will include site clearing and grading, facility construction, and site cleanup and restoration; and will involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Visible traffic will increase along I-10, West Hobsonway and Black Creek Road during construction and grading activities could generate large dust clouds. Some areas of disturbed soil surfaces (characterized by high color, line and texture contrasts) will remain post construction. Construction activities will be visible from I-10 (the primary travel corridor in the region), West Hobsonway, Black Creek Road, nearby BLM recreational access roads, Blythe Airport, nearby

residences, Palo Verde Community College, the Mesa Bluffs Golf Community, BLM's Midland Long-term Visitor Area and Campground, the McCoy Mountains, the Little Maria Mountains and Palen McCoy Wilderness, the Big Maria Mountains and Wilderness, and the Mule Mountains and ACEC.

Task-specific construction lighting will be used where feasible. The use of shielded directional exterior lights and fixtures of a non-glare type on the construction site and laydown area will minimize off-site light and glare impacts. We adopt Condition of Certification **VIS-3** to formalize appropriate construction lighting measures and Condition of Certification **VIS-2** to provide restoration of ground surfaces affected by temporary construction activities. We find the project's temporary construction activities, which may create a substantial visual impact, will be mitigated to a less than significant impact with the effective implementation of Conditions of Certification **VIS-2** and **VIS-3**. (Ex. 200, p. C.12-15.)

b. Operation Impacts

The visual setting and proposed project have been evaluated from viewing areas represented by the following 11 KOPs (shown on **Visual Resources Figures 2 and 3**):

Figure 2 KOPs:

- **KOP 1** – Blythe Airport, southeast of the project site looking northwest.
- **KOP 2** – Black Creek Road, in the southern portion of the project site looking northwest.
- **KOP 3** – Southwest corner of the development looking northeast.
- **KOP 4** – McCoy Mountains – Low Elevation, from the BLM recreational access road, looking east.
- **KOP 5** – McCoy Mountains – High Elevation along the main north-south ridge looking east.
- **KOP 6** – Westbound I-10, just east of the interconnecting transmission line span of I-10, looking west.
- **KOP 7** – Eastbound I-10, just west of the interconnecting transmission line span of I-10, looking east.

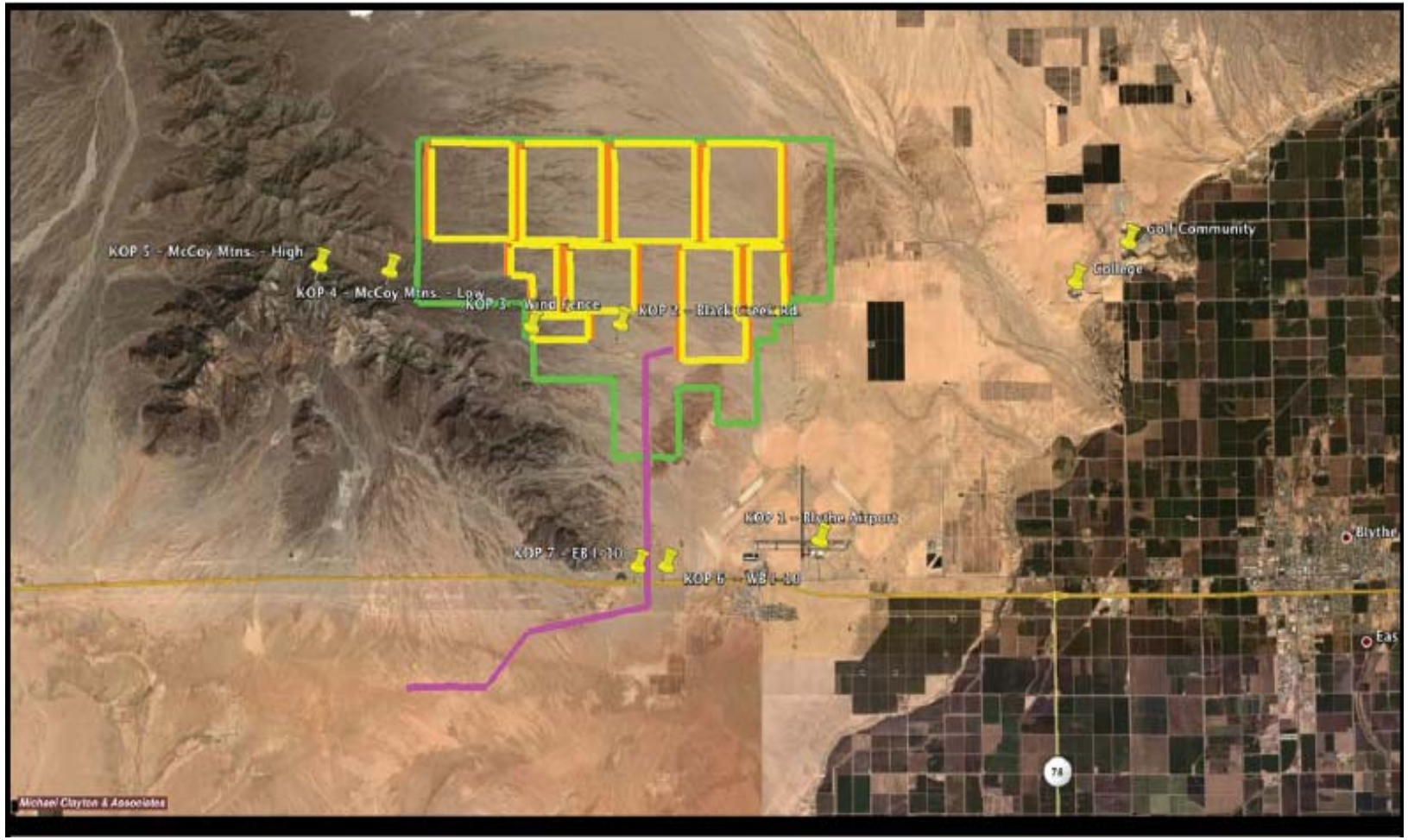
Figure 3 KOPs: ***(for convenience the Figure 3 KOPs 1 – 4 will be referred to in the discussion as 8 – 11)***

- **KOP 1** – Midland Long-Term Visitor Area Campground, looking southwest *(hereinafter referred to as KOP 8)*

- **KOP 2**– Midland Long-Term Visitor Area, looking southwest *(hereinafter referred to as KOP 9)*
- **KOP 3** – Mesa Bluffs Golf Community, looking west *(hereinafter referred to as KOP 10)*
- **KOP 4** - Palo Verde Community College, looking west *(hereinafter referred to as KOP 11)*

VISUAL RESOURCES - FIGURE 2

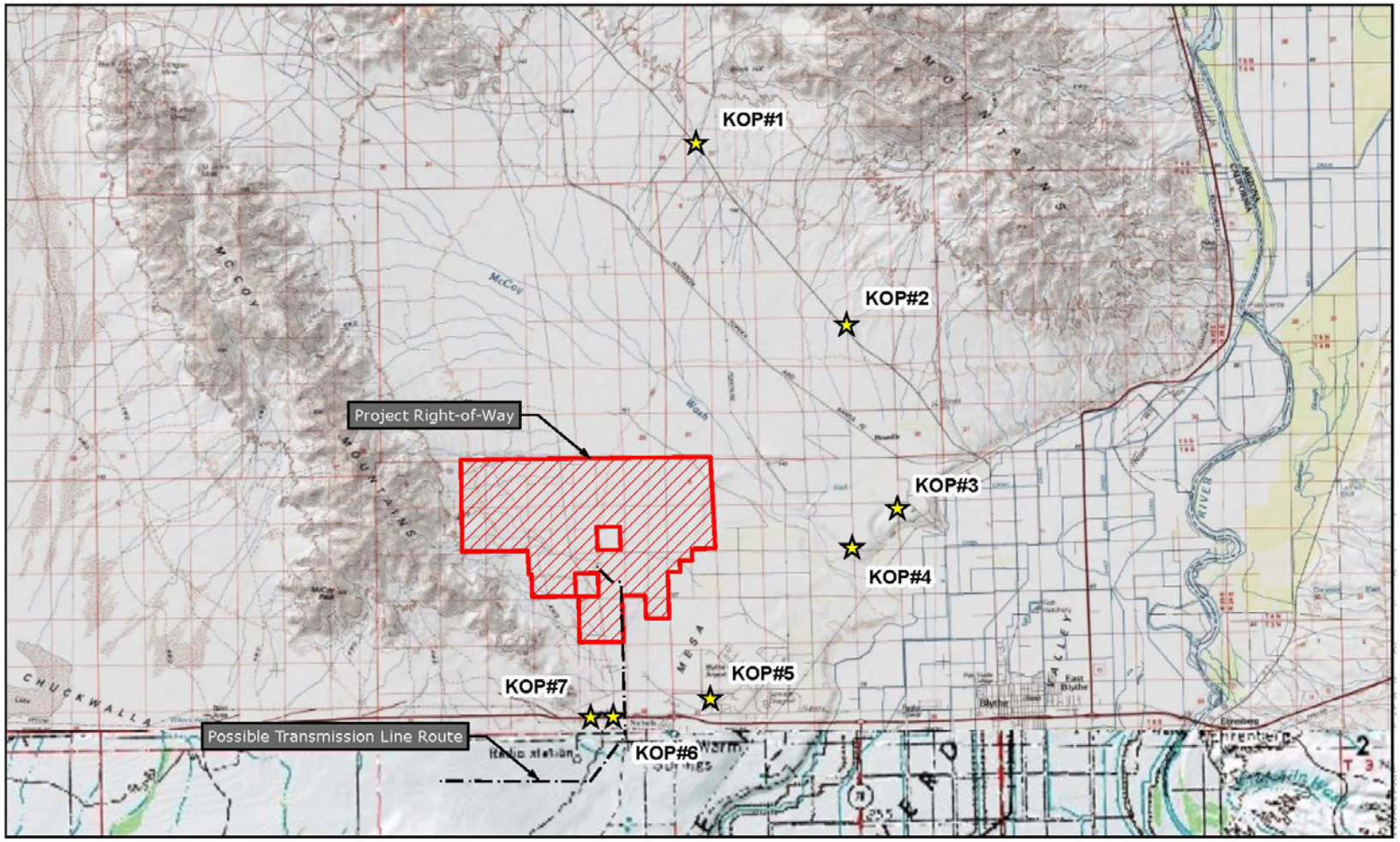
Blythe Solar Power Project – Location of Southerly Key Observation Points (KOPs) 1 Through 7



Source: Exhibit 200.

VISUAL RESOURCES - FIGURE 3

Blythe Solar Power Project – Location of Northerly Key Observation Points (KOPs) 1 through 4 ***(hereinafter referred to as 8 through 11)***



Source: Exhibit 1.

Before considering the more general issue of degradation of existing visual character and site quality, several focused issues are considered: whether the project will substantially affect a scenic vista, damage scenic resources, or create a new source of substantial light or glare affecting day or night time views in the area [Cal. Code Regs., tit. 14, Appen. G, § I, subds. (a), (b) and (d)].

A *scenic vista* is defined as a distant view of high pictorial quality perceived through and along a corridor or opening. There is no dispute that there are no federal, state, or local government designated scenic vistas in the project vicinity. (Ex. 200, p. C.12-25.)

Although no designated scenic vistas were identified, panoramic and scenic vistas of the Palo Verde Mesa and the project site are available from the McCoy Mountains to the west, the southern ridges of the Little Maria Mountains to the north and the Big Maria Mountains to the northeast. Viewers from the northern mountains, golf course community and college are approximately three to eight miles distant from proposed facilities, and in each case facilities would be visually dominated by the McCoy Mountains providing a backdrop. (Ex. 1, pp. 5.15-10, 11, 15 and 16.) The project would be prominently visible from various elevations in the McCoy Mountains where viewers will look down upon the site and project implementation would result in substantial adverse effects on these vista views. (Ex. 200, pp. C.12-8 through C.12-14.) This is further addressed in the KOP discussion below.

With regard to scenic resources, the project site is located approximately three miles north of I-10, which is not listed as an eligible State Scenic Highway and there are no notable scenic features or historic structures located within the site. We find that the project will not substantially damage scenic resources such as trees, rock outcroppings, or historic buildings within a state scenic highway. (Ex. 200, p. C.12-25.)

Night-time security lighting in the BSPP power block and solar fields will operate approximately 3,600 hours per year during non-operating, non-sunlight hours. Condition of Certification **VIS-3** requires lighting to be directed downward or toward the area to be illuminated on site; shielded from public view to the extent feasible; and (to the level consistent with operational safety and security) minimize the time that lights are on to when site areas are occupied through the use of switches, sensors, and timers. BSPP's new source of substantial light to nighttime views will be less than significant with the effective implementation of Condition of Certification **VIS-3**. (Ex. 200, p. C.12-26.)

With regard to potential daytime glare, parabolic troughs associated with the project solar collector arrays will track the sun's movement across the sky, and have potential to reflect the sky and a portion of sunlight for viewers at elevated locales. Condition of Certification **VIS-1** will result in the solar arrays having non-reflective surfaces and neutral colors to minimize visual effect. During movement into or out of stow position at the beginning or end of daily operations, however, the troughs have the potential to produce brief "bright spots." The Applicant did not specifically address these bright spots, although they found the potential for glare overall to be less than significant (Ex. 1, 5.15-19.). Staff identified a potential for significant impact and noted that bright spots can draw a viewer's attention to the facility. (Ex. 200, p. C.12-26.) As indicated above, however, these spots may manifest only twice during the day (at beginning or end of operations) and viewers need to be in a position to observe as well as looking toward the facility. This combination of occurrences is expected to occur, but will not constitute the prevalent or long-term condition. Additional specific analysis of the potential for glint and glare relative to Blythe Airport aerial traffic was undertaken with regard to potential hazards. (Ex. 202, pp. 26 through 48.) That study did not indicate that visual effects would exceed those disclosed herein, and testimony offered at the July 16, 2010 Evidentiary Hearing confirmed that there was "little potential" for any significant visual impact related to glint and glare. (7/16/10 RT 17:23 - 18:2.)

The evidence therefore indicates that with regard to aesthetic effects, the "bright spots" will be infrequent in the number of occurrences and of such short duration that they will not represent a substantial new source of glare in the area. We find that with the effective implementation of the proposed surface treatment in Condition of Certification **VIS-1**, project structures will not be a source of substantial glare that could adversely affect daytime views.

Since the evidence establishes that BSPP will not substantially damage scenic resources, nor create a new source of substantial light or glare, the remaining question is whether the project would substantially degrade the existing visual character or quality of the site and its surroundings, including the (non-designated) scenic vistas noted above [Cal. Code Regs., tit. 14, Appendix G, section I, subd. (a) and (c)].

The evidence shows that physical distance, context and/or viewer orientation combined with the effective implementation of Conditions of Certification **VIS-1, VIS-2, VIS-3 and VIS-4** (requiring minimization of contrast and glare related both to structures/facilities design and coloring as well as facility lighting, revegetation

of disturbed soils and siting of linears to minimize visibility) will result in less than significant project-related degradation to the existing visual character or quality of the site and surroundings from KOPs 1, 6, 8, 9, 10 and 11 (Exs. 1, pp. 5.15-10 and 5.15-11; 200, pp. C.12-17 to C.12-18 and C.12-23 to C.17-24.)

The evidence for KOPs 2, 3, 4, 5 and 7, however, shows that no available mitigation measures are available to reduce impacts to less than significant levels. (Ex. 200, pp. C.12-19 through 22 and C.12-25.)

Each KOP view contains consistent elements (a generally broad, open and predominantly undeveloped landscape with grasses and shrubs). Few built elements are present. The settings include mountain back drops at varying distances. (Ex. 200, pp. C.12-9 through 12 and C.12-14.) Due to their consistent nature, these elements are not detailed for each KOP discussed below. An additional consistent element for each of the KOPs relates to viewer concern. Opportunities for recreational experiences offering expansive views of intact and natural appearing desert landscapes are diminishing. Thus, viewers seeking unspoiled landscapes are generally sensitive to the introduction of industrial elements to natural appearing landscape. Overall viewer concern is therefore rated high. Viewer expectations for higher quality landscape features also are anticipated while traveling through a designated California Desert Conservation Area (CDCA). This expectation, combined with the high volume of travelers on I-10 (the primary travel corridor between southern California and Phoenix) results in a rating of high overall viewer concern on I-10. (Ex. 200, p. C.12-14.)

Similarly, the visible elements of the project are generally consistent. Project implementation will add prominent industrial features to the landscape; including the wind fence, solar arrays, overflow and expansion vessels, steam turbine, warehouse and support facilities, air cooled condenser, water treatment facilities, chain-link fencing and transmission line. Such characteristics are not found in the existing landscape. (Ex. 200, pp. C.12-18 through 20 and C.12-22.) At KOPs 4 and 5, viewers will see the project from higher elevations to the west. Conversion of a substantial portion of the existing, natural-appearing mesa to a facility characterized by geometric forms and complex to strong horizontal and vertical lines will be openly visible and the resulting visual contrast will be high. (Ex. 200, pp. C.12-20, 21 and 22.)

The remainder of this discussion reviews the 5 KOPs for which significant visual impacts are identified—KOPs 2, 3, 4, 5 and 7. The following Conditions of Certification will be implemented to minimize BSPP structure contrast impacts to

the extent possible: **VIS-1,** Surface Treatment of Project Structures and Buildings; **VIS-2,** Revegetation of Disturbed Soil Areas; **VIS-3,** Temporary and Permanent Exterior Lighting; and **VIS-4**, Project Design. Given the large scale of the impact area, however, we find that no available mitigation measures are adequate to mitigate the significant visual impacts to less than significant levels. Impacts at each of these KOPs remain significant and unavoidable. (Ex. 200, pp. C.12-19, 20, 21, and 22.)

KOP 2 – Black Creek Road Looking to the Northwest

Visual Resources Figure 4 is a Google Earth perspective that characterizes KOP 2 post-project views available to those accessing recreational destinations such as Palo Verde Mesa, McCoy Mountains, McCoy Wash, and Little Maria Mountains, from Black Creek Road approximately 0.4 mile from the southwestern development areas. The schematic illustrates KOP 2 proximity to the site and the 30-foot tall wind fence in particular (indicated by the horizontal orange line in the perspective). The yellow lines beyond the fence indicate the locations of development areas and height of approximately 24 to 25 feet.

VISUAL RESOURCES - FIGURE 4

Blythe Solar Power Project – Google Earth Perspective from KOP 2 On Black Creek Road

Source: Exhibit 200.

Visual Sensitivity

While viewer numbers are low, view duration is extended, with uninterrupted views to the site from Black Creek Road and other BLM access roads and 4WD trails occurring for substantial distances at low 4WD travel speeds. These elements combine to result in moderate-to-high viewer exposure. For viewers in the vicinity of KOP 2, a low-to-moderate visual quality combined with high viewer concern and moderate-to-high viewer exposure result in an overall moderate-to-high visual sensitivity. (Ex. 200, p. C.12-10.)

Visual Change

The visual contrast resulting from project implementation is rated high. The proposed project will appear prominent given its foreground location and will be comparable in prominence to the broad, horizontal forms of the foreground mesa, and the angular forms of the background mountain, so that it will appear co-dominant. From the vicinity of KOP 2, the wind fence, solar arrays and other project components will partially obstruct portions of Palo Verde Mesa and the background McCoy and Little Maria Mountains from view. The resulting view change is rated moderate-to-high. (Ex. 200, p. C.12-18.)

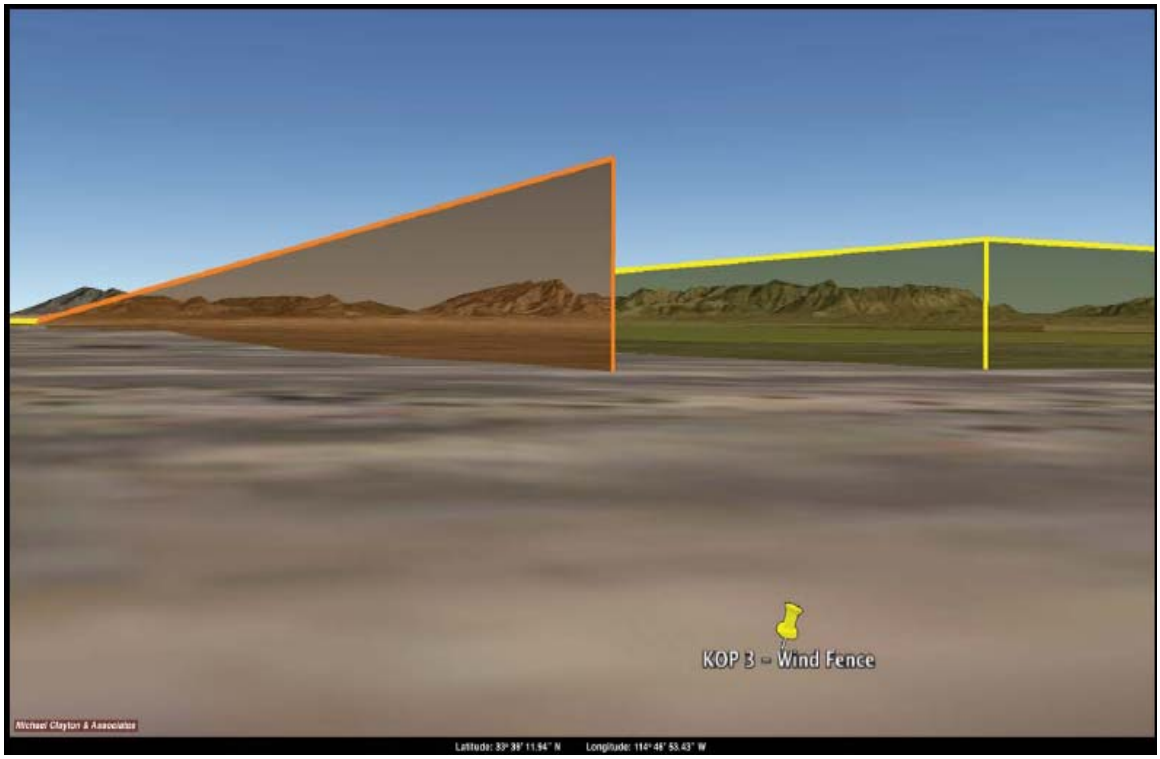
Taken together, the values for visual contrast, project dominance, and view blockage from KOP 2 constitute a moderate-to-high level of overall visual change. (Ex. 200, p. C.12-18.) When considered within the context of the overall moderate-to-high visual sensitivity of the existing landscape and viewing characteristics, the moderate-to-high visual change that would be perceived from KOP 2 will substantially degrade the existing visual character or quality of the site and will result in a significant visual impact. (Ex. 200, p. C.12-19.)

KOP 3 – BLM Access Road to the Southern End of McCoy Mountains Looking Northeast

Visual Resources Figure 5 provides a perspective of the project site from a publicly accessible BLM road providing access to the southern end of the McCoy Mountains. KOP 3 is located adjacent to the southern end of one of the west wind fence locations with an open and unobstructed view of the site. The 30-foot tall wind fence (indicated by the orange outline), is shown at a viewing distance of approximately 200 to 300 feet. The yellow lines beyond the fence indicate the locations of development areas at a height of approximately 24 to 25 feet (an approximate height of many of the project features).

VISUAL RESOURCES - FIGURE 5

Blythe Solar Power Project – Google Earth Perspective from KOP 3 on a BLM Recreational Access Road near the Southwest Corner of the Project Site



Source: Exhibit 200

Visual Sensitivity

Site visibility from KOP 3 is unobstructed and at a foreground to middleground viewing distance. The mountain range adds visual interest and contributes to the low-to-moderate rating for visual quality. (Ex. 200, p. C.12-10.) While the number of viewers is low, view duration is extended, with uninterrupted views to the site from BLM access roads and 4WD trails occurring for substantial distances at low 4WD travel speeds. These elements combine to result in moderate-to-high viewer exposure. (Ex. 200, p. C.12-11.)

For viewers at KOP 3 and along the various BLM access roads and 4WD trails, the low-to-moderate visual quality combined with high viewer concern and moderate-to-high viewer exposure result in an overall moderate-to-high visual sensitivity of the visual setting and viewing characteristics. (Ex. 200, p. C.12-11.)

Visual Change

The proposed project will add prominent industrial features to the foreground landscape, as noted above. Such characteristics are not found in the existing landscape. Portions of the mesa, background mountains, and sky would be blocked from view. The resulting visual contrast caused by these industrial characteristics would be high. (Ex. 200, p. C.12-19.)

The proposed project will be prominent given the foreground proximity of project features when viewed from the BLM access road. The project will appear comparable in prominence (co-dominant) to the broad, horizontal forms of the foreground mesa, and dominant to the more distant, angular forms of the background Big Maria Mountains. The vertical extension of the taller structures will contribute to the project's overall structural prominence. Overall project dominance is rated as co-dominant-to-dominant. (Ex. 200, pp. C.12-19 and 20.)

From the vicinity of KOP 3, the wind fence, solar arrays and other project components will block portions of Palo Verde Mesa; the background Big Maria Mountains; and sky (higher quality landscape features) from view. This view blockage is rated moderate-to-high. (Ex. 200, p. C.12-20.)

From KOP 3, the values for visual contrast, project dominance, and view blockage, when taken together, constitute a moderate-to-high level of overall visual change. Considered in the context of the overall moderate-to-high visual sensitivity of the existing landscape and viewing characteristics, the moderate-to-high visual change experienced from KOP 3 will constitute substantial degradation of the existing visual character or quality of the site, resulting in a significant visual impact. (Ex. 200, p. C.12-20.)

KOP 4 – McCoy Mountains – Low Elevation – Looking East-Northeast

Visual Resources Figure 6 characterizes views available from the lower elevations of the McCoy Mountains. KOP 4 is located on a 4WD access road at the eastern base of the McCoy Mountains. **Visual Resources Figure 7** depicts the location and extent of the proposed project's visible structures from this KOP.

VISUAL RESOURCES - FIGURE 6

Blythe Solar Power Project – View from KOP 4, Looking East-Northeast toward BSPP Site—Existing Condition

Source: Exhibit 200.

VISUAL RESOURCES - FIGURE 7

Blythe Solar Power Project – View from KOP 4, Looking East-Northeast toward BSPP Site—Simulated Condition

Source: Exhibit 200

Visual Sensitivity

The panoramic views from the base of the McCoy Mountains encompass the broad expanse of Palo Verde Mesa. Visual integrity of the desert landscape is moderate-to-high with minimal intrusions of discordant features. Overall visual quality is rated moderate. (Ex. 200, p. C.12-11.) The KOP 4 view to the site is unobstructed and at a foreground to middleground viewing distance resulting in high visibility. While the number of viewers is low, the view duration is extended from the 4WD trails along the base of the McCoy Mountains. These considerations combine to result in moderate-to-high viewer exposure. (Ex. 200, pp. C.12-11 and 121.)

For viewers at KOP 4 and other nearby viewing areas along the base of the McCoy Mountains, the moderate visual quality combined with high viewer concern and moderate-to-high viewer exposure result in an overall moderate-to-high visual sensitivity. (Ex. 200, p. C.12-12.)

Visual Change

The proposed project will be co-dominant as it will appear comparable in prominence to the broad, horizontal forms of the mesa, and the more distant angular forms of the background mountains. (Ex. 200, p. C.12-21.) From the vicinity of KOP 4, project facilities will block a substantial and central portion of Palo Verde Mesa from view. The resulting view blockage would be moderate-to-high. (Ex. 200, p. C.12-21.)

From KOP 4, the above values combined constitute a moderate-to-high level of overall visual change. Considered in the context of the overall moderate-to-high visual sensitivity of the existing landscape and viewing characteristics, the moderate-to-high visual change experienced from KOP 4 constitutes substantial degradation of the existing visual character or quality of the site, resulting in a significant visual impact. (Ex. 200, p. C.12-21.)

KOP 5 – McCoy Mountains – High Elevation – Looking East-Northeast

Visual Resources Figure 8 characterizes the visual impact on views from the higher elevations of the McCoy Mountains. KOP 5 is located approximately 1.7 miles west of the nearest development area, and provides an open and unobstructed elevated view of the site. From this elevated vantage point, the existing landscape appears predominantly natural except for the checkerboard patterns of the agricultural fields west of Blythe. **Visual Resources Figure 9**

presents a visual simulation of the proposed project from the general vicinity of KOP 5. Though it does not appear to fully capture the western extent of the development area, it depicts the scale of the project features on the valley floor. Vertical elements lose significant visual effect and the emphasis is on extent.

VISUAL RESOURCES - FIGURE 8

Blythe Solar Power Project –View from KOP 5, Looking East-Northeast toward BSPP Site – Existing Condition

Source: Exhibit 200

VISUAL RESOURCES - FIGURE 9

Blythe Solar Power Project – View from KOP 5, Looking East-Northeast toward BSPP Site – Simulated Condition

Source: Exhibit 200

Visual Sensitivity

The middleground to background panoramic views to Palo Verde Mesa and Palo Verde Valley demonstrate high visual integrity with minimal intrusions of visually discordant features. Overall visual quality is rated moderate-to-high. (Ex. 200, p. C.12-12.) The elevated view of the site from KOP 5 is unobstructed and the scale of the project will render it prominent in views to the east. While the number of viewers would be very low, view duration can be extended from viewpoints along the mountain ridges. These elements combine to result in moderate viewer exposure. (Ex. 200, pp. C.12-12 and 13.)

For viewers at KOP 5 and other nearby, elevated viewing locations within the McCoy Mountains, the moderate-to-high visual quality combined with high viewer

concern and moderate viewer exposure result in overall moderate-to-high visual sensitivity. (Ex. 200, p. C.12-13.)

Visual Change

- The project will appear comparable in prominence to the broad, horizontal forms of the mesa, and dominant to the more distant angular forms of the background mountain; resulting in overall co-dominant-to-dominant project dominance. (Ex. 200, p. C.12-22.) From the vicinity of KOP 5, project facilities will block a substantial and central portion of Palo Verde Mesa from view, resulting in moderate-to-high view blockage. (Ex. 200, p. C.12-22.)

- The combination of values for visual contrast, project dominance, and view blockage constitute a moderate-to-high level of overall visual change from KOP 5. (Ex. 200, p. C.12-22.)

- Considered in the context of the overall moderate-to-high visual sensitivity of the existing landscape and viewing characteristics, the moderate-to-high visual change experienced from KOP 5 constitutes substantial degradation of the existing visual character or quality of the site, resulting in a significant visual impact. (Ex. 200, p. C.12-22.)

2. Project Linears

The BSPP facility will connect to the SCE transmission system at the new Colorado River substation planned by SCE approximately five miles southwest of the BSPP site. The proposed BSPP generator-tie line is planned to be a bundled double circuit 230 kV line.

- **KOP 7 – Eastbound Interstate 10 at the Transmission Line Span – Looking East**

Visual Resources Figure 10 characterizes views seen by motorists on I-10, in the vicinity of the proposed transmission line span of I-10. **Visual Resources Figure 11** presents an east-bound visual simulation of the proposed 230 kV transmission line span of I-10 from this KOP.

VISUAL RESOURCES - FIGURE 10

Blythe Solar Power Project –View from KOP 7, Looking East toward SBPP Transmission Line –Existing Condition

Source: Exhibit 200

VISUAL RESOURCES - FIGURE 11

Blythe Solar Power Project – View from KOP 7, Looking East toward SBPP Transmission Line –Simulated Condition

Source: Exhibit 200

Visual Sensitivity

Although an existing transmission line is visible adjacent to the south side of I-10, much of the landscape visible to eastbound travelers on I-10 appears undeveloped. Panoramic views are available of the distant Dome Rock and Big Maria mountain ranges, which form the horizon for eastbound travelers and are prominently visible. Visual quality is moderate. (Ex. 200. p. C.12-14.) From KOP 7, the view of the transmission line route is unobstructed and in the foreground. The number of viewers on I-10 is high and the view duration will be extended with uninterrupted sightlines to the area for several miles, resulting in high viewer exposure. (Ex. 200. p. C.12-14.)

For viewers at KOP 7, the moderate visual quality, combined with high viewer concern and viewer exposure, result in an overall moderate-to-high visual sensitivity. (Ex. 200. p. C.12-14.)

Visual Change

The proposed transmission line will be visible as curvilinear spans (line arcs) between the prominent, vertical steel-pole structures. The span over the freeway and the transmission line south of I-10 will be prominently visible (at a viewing distance of less than one mile) from the residential development off of Mesa Drive, south of I-10 and Blythe Airport. Although nearby transmission line structures south of I-10 exhibit similar linear characteristics, the strong vertical lines of the steel poles will contrast with the prevailing horizontal lines of the mesa and the irregular ridgelines of the mountains beyond. The resulting visual contrast will be moderate-to-high. (Ex. 200. p. C.12-24.)

The proposed transmission feature will have foreground proximity to I-10 and will appear comparable in prominence to the linear form of the freeway, the broad horizontal form of the mesa, and the angular forms of the background mountains. Transmission structures and conductors will extend above the horizon line. Overall project dominance would be co-dominant. (Ex. 200. p. C.12-24.)

From the vicinity of KOP 7 (and on approach to the span), the transmission line will block portions of the Dome Rock Mountains and sky from view. Resulting view blockage will be moderate-to-high. (Ex. 200. p. C.12-24.)

From KOP 7, the combined values for visual contrast, project dominance, and view blockage constitute a moderate-to-high level of overall visual change. (Ex. 200. p. C.12-24.) Considered in the context of the overall moderate-to-high

visual sensitivity of the existing landscape and viewing characteristics, this will constitute substantial degradation of the existing visual character or quality of the site, resulting in a significant visual impact. (Ex. 200. p. C.12-24.)

No available mitigation measure to reduce the visual impact was identified other than undergrounding the line. That measure is not recommended due to cost. (Ex. 200. p. C.12-25.) The following Conditions of Certification will be implemented to minimize structure contrast and lighting and glare impacts to the extent possible: **VIS-1,** Surface Treatment of Project Structures and Buildings; **VIS-2,** Revegetation of Disturbed Soil Areas; and **VIS-4**, Project Design. Given the large scale of the impact area, however, and the inability to implement undergrounding of the line due to cost, we find that no available mitigation measures are adequate to mitigate the significant visual impacts to less than significant levels. Impacts remain significant and unavoidable. (Ex. 200. p. C.12-25.)

3. Cumulative Impacts and Mitigation

Cumulative impacts to visual resources would occur where project facilities occupy the same field of view as other built facilities or impacted landscapes, and an adverse change in the visible landscape character is perceived. In some cases, a cumulative impact could also occur if a viewer perceives that the general visual quality or landscape character of an area is diminished by the proliferation of visible structures or construction effects, even if the changes are not within the immediate field of view as existing (or future) structures or facilities. (Ex. 200, p. C.12-30.)

BSPP would be constructed within the I-10 corridor. We adopt Staff's definition of the I-10 corridor as set forth in the evidence (Ex. 200, pp. B.3-8 to B.3-13.) In this case, we reject, however, Staff's suggestion that BSPP's contribution to cumulative impacts could extend beyond that to include the entire CDCA. The concept of a "collective industrialization of the Conservation Area landscapes" (Ex. 200, p. C.12-33) adversely impacting the entire desert region or the CDCA is only loosely described in the record and lacks factual support.

Staff asserts that cumulative impacts across the entire desert region must be considered and concludes that the BSPP, when combined with past and foreseeable future projects, will have significant visual impacts in the CDCA. (Ex. 200, p. C.12-32.)

In our view, the use of such a large area for cumulative impact analysis in this case is not warranted by the evidence, and we decline to do so. Staff's analysis demonstrates that is not possible to do more than speculate in general terms about the nature of cumulative visual impacts in so large an area as the 25 million acre CDCA. Nor did Staff cite any compelling authority in support of its assertion. We find it appropriate here to define the area for cumulative analysis as the I-10 corridor.

a. Effects of Past and Present Projects

Four existing projects are located within the BSPP viewshed including I-10, the West-wide Section 368 Energy Corridor, the BLM Recreational Opportunities project for the Midland Long-Term Visitor Area, and the Devers-Palo Verde Transmission Line. (Ex. 200, p. B.3-8.) Of the four projects, only a portion of the Devers-Palo Verde Transmission Line is both located within the BSPP transmission line viewshed and shares similar visual characteristics and impacts. The BSPP interconnecting transmission line is expected to substantially contribute to a cumulatively significant effect within the context of existing cumulative conditions established by the Devers-Palo Verde 2 Transmission Line. (Ex. 200, p. C.12-32.)

b. Effects of Reasonably Foreseeable Future Projects

Excluding foreseeable commercial and residential projects in Blythe, 18 foreseeable future energy projects in the I-10 corridor would share similar visual characteristics with BSPP and would contribute to the conversion of natural desert landscapes to landscapes with industrial character (complex industrial forms and lines and surface textures and colors not found in natural desert landscapes). (Ex. 200, p. C.12-33.) A significant cumulative impact to visual resources is identified from the combination of BSPP and the 18 foreseeable projects. (Ex. 200, p. C.12-33.)

Given these considerations, we find that BSPP's visual impacts are cumulatively considerable in the context of the I-10 corridor's desert landscape when considering existing and foreseeable projects, both within the immediate project viewshed and in a broader context encompassing the whole of the I-10 corridor. The BSPP transmission line will also result in a substantial contribution to cumulative visual impacts in the context of existing cumulative conditions.

4. LORS Compliance

The proposed project is subject to the laws, ordinances, regulations, and standards (LORS) of the U.S. Government (Bureau of Land Management – BLM), State of California, and Riverside County.

Federal

The project is in compliance with the impact disclosure requirements of the CDCA Plan (through the visual impact analysis presented herein).

State

The proposed project was found to be in compliance with the State Scenic Highway Program as pertains to compliance with scenic highway management objectives (adjacent I-10 is neither an eligible nor designated scenic highway under the state program).

Local

The project does not comply with several County of Riverside requirements pertaining to protection/preservation of: natural features, the visual character of the existing landscape and scenic corridors. These requirements are found in LU 4.1(o) (preservation of natural features), LU 13.1 (preservation of scenic vistas), LU 13.3 (compatible appearance with surrounding environment), LU 13.8 (view blockage), LU 20.1 (environmental character), and LU 20.4 (open space and rural character). The project also does not comply with several landscaping requirements and pedestrian access requirements because landscaping is not proposed and pedestrians will not be allowed within the facility. Given the arid conditions and remote location, however, this is not considered significant. These requirements are found in LU 4.1(c), LU 4.1(d), LU 4.1(m), LU 4.1(n), and LU 4.1(p), with additional detail presented in Ex. 200, pp. C.12-34 through C.12-37.

5. Alternatives

The record establishes that neither the Reconfigured nor the Reduced Acreage alternatives would eliminate the project's visual impacts. Significant impacts would still exist at some KOPs. (Ex. 200, pp. C.12-27 to C.12-29.)

6. Public Comment

Comments from CNRCC Desert Committee (Letter dated December 23, 2009) and Galati/Blek, LLP (Letter dated April 19, 2010) were responded to by staff, as shown in the SA (Ex. 200, pp. C.12-37 through C.12-39.

FINDINGS OF FACT

Based on the evidence of record, we find and conclude as follows:

1. Construction will occur over approximately 69 months.
2. The project's temporary construction activities' impact on visual resources will be mitigated to a less than significant impact with the effective implementation of Conditions of Certification **VIS-2** and **VIS-3**.
3. There is no federal, state, or local government designated scenic vista in the project vicinity.
4. Non-designated panoramic and scenic vistas are present and the proposed project will adversely affect these vistas.
5. There is no identified scenic resource on the project site and there is no defined scenic resource identified in the vicinity of the project site that the proposed project would substantially damage and I-10 is not a State Scenic Highway.
6. The impact of BSPP's lighting to nighttime views will be less than significant with the effective implementation of the applicant's specified mitigation measures and Condition of Certification **VIS-3**.
7. The potential amount of spilled reflected rays from the parabolic trough solar collectors during normal operation will be so infrequent in the number of occurrences and so short in duration of time that they will not represent a significant new source of glare in the area.
8. All BSEP equipment other than the solar arrays will have non-reflective surfaces and neutral colors such that the project structures will not be a significant source of glare that could adversely affect daytime views
9. The project's potential impacts on visual resources were analyzed from 11 defined KOPs (9 at different locations surrounding the project site and 2 in the vicinity of the transmission line crossing of I-10).
10. Implementation of BSPP will result in significant visual impacts to non-designated scenic vistas from KOPs 2, 3, 4, 5 and 7.
11. Effective implementation of Conditions of Certification **VIS-1, VIS-2, VIS-3** and **VIS-4**, is required for impacts to views represented by KOPs 2, 3, 4, 5 and 7, but will not lower residual impacts to these KOPs to less than significant levels.
12. The project's permanent impact on visual resources will be less than significant at KOPs 1 ,6, 8,9,10 and 11 due to distance, viewer orientation and/or implementation of Conditions of Certification **VIS-1, VIS-2, VIS-3** and **VIS-4**, as applicable.

13. The visual effects of the BSPP and transmission line in combination with past, present, and reasonably foreseeable projects in the I-10 corridor will substantially contribute to significant cumulative impacts.

CONCLUSIONS OF LAW

1. Implementation of the following Conditions of Certification will result in attenuation of significant direct, indirect, or cumulative impacts to visual resources, but will not lower all project-related impacts to less than significant levels.
2. The project will comply with federal and state applicable laws, ordinances, regulations and standards. The project will not comply with all local laws, ordinances, regulations and standards related to protection and preservation of natural features and visual character of existing landscape as well as other requirements related to Visual Resources.
3. The BSPP will contribute to anticipated cumulative visual impacts of past and foreseeable future solar projects in the I-10 corridor which are considered cumulatively considerable and potentially significant.
4. A Statement of Overriding Considerations will be required for direct and cumulative impacts associated with the project that will not be lowered to less than significant levels.

CONDITIONS OF CERTIFICATION

Surface Treatment of Project Structures and Buildings

VIS-1 The project owner shall treat the surfaces of all project structures and buildings visible to the public such that: a) their colors minimize visual intrusion and contrast by blending with (matching) the existing characteristic landscape colors; b) their colors and finishes do not create excessive glare; and(c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

Following in-field consultation with the Energy Commission/BLM Visual Resources specialist and other representatives as deemed necessary, the project owner shall submit for Compliance Project Manager (CPM) review and approval, a specific Surface Treatment Plan that will satisfy these requirements. The treatment plan shall include:

A A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes based on the characteristic landscape. Colors will be field

tested using the actual distances from the KOPs to the proposed structures, using the proposed colors painted on representative surfaces;

B A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and pantone number; or according to a universal designation system;

C One set of color brochures or color chips showing each proposed color and finish;

D A specific schedule for completion of the treatment; and

E A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

Verification: At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to Riverside County for review and comment. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for approval.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit to each one set of electronic color photographs from the project KOPs. The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a): the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of major maintenance activities for the next year.

Revegetation of Disturbed Soil Areas

VIS-2 The project owner shall revegetate disturbed soil areas to the greatest practical extent, as described in Condition of Certification **BIO-8.** In order to address specifically visual concerns, the required closure, Revegetation

and Rehabilitation Plan shall include reclamation of the area of disturbed soils used for laydown, project construction, and siting of the other ancillary operation and support structures.

Verification: Refer to Condition of Certification **BIO-8.**

Temporary and Permanent Exterior Lighting

VIS-3 To the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting and all temporary construction lighting such that a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky, except for required FAA aircraft safety lighting (which should be an on-demand, audio-visual warning system that is triggered by radar technology); d) illumination of the project and its immediate vicinity is minimized, and e) the plan complies with local policies and ordinances. The project owner shall submit to the CPM for review and approval and simultaneously to the County of Riverside for review and comment a lighting mitigation plan that includes the following:

A. Location and direction of light fixtures shall take the lighting mitigation requirements into account;

B. Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;

C. Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;

D. Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security;

E. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and

F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 90 days prior to ordering any permanent exterior lighting or temporary construction lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting mitigation plan. At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to the County of Riverside for review and comment a lighting mitigation plan. If the CPM determine that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If after inspection, the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days.

Project Design

VIS-4 To the extent possible, the project owner will use proper design fundamentals to reduce the visual contrast to the characteristic landscape. These include proper siting and location; reduction of visibility; repetition of form, line, color (see **VIS-1**) and texture of the landscape; and reduction of unnecessary disturbance. Design strategies to address these fundamentals will be based on the following factors:

Earthwork: Select locations and alignments that fit into the landforms to minimize the size of cuts and fills. Avoid hauling in or hauling out of excess earth cut or fill. Avoid rounding and/or warping slopes. Retain existing rock formations, vegetation, and drainage. Tone down freshly broken rock faces with emulsions or stains. Use retaining walls to reduce the amount and extent of earthwork. Retain existing vegetation by using retaining walls or fill slopes, reducing surface disturbance, and protecting roots from damage during excavations. Avoid soil types that generate strong color contrasts. Reduce dumping or sloughing of excess earth and rock on downhill slopes.

Vegetation Manipulation: Retain as much of the existing vegetation as possible. Use existing vegetation to screen the development from public viewing. Use scalloped, irregular cleared edges to reduce line contrast. Use irregular clearing shapes to reduce form contrast. Feather and thin the edges of cleared areas and retain a representative mix of plant species and sizes.

Structures: Minimize the number of structures and combine different activities in one structure. Use natural, self-weathering materials and

chemical treatments on surfaces to reduce color contrast. Bury all or part of the structure. Use natural appearing forms to complement the characteristic landscape. Screen the structure from view by using natural land forms and vegetation. Reduce the line contrast created by straight edges.

Linear Alignments: Use existing topography to hide induced changes associated with roads, lines, and other linear features. Select alignments that follow landscape contours. Avoid fall-line cuts and bisecting ridge tops. Hug vegetation lines and avoid open areas such as valley bottoms. Cross highway corridors at less sharp angles.

Reclamation and Restoration: Reduce the amount of disturbed area and blend the disturbed areas into the characteristic landscape. Replace soil, brush, rocks, and natural debris over disturbed area. Newly introduced plant species should be of a form, color, and texture that blends with the landscape.

Verification: As early as possible in the site and facility design, the project owner shall meet with BLM's Authorized Office and the CPM to discuss incorporation of these above factors into the design plans. At least 90 days prior to final site and facility design, the project owner shall contact the CPM to review the incorporation of the above factors into the final facility and site design plans. If the CPM determines that the site and facility plans require revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

VIII. OVERRIDE FINDINGS

Our analysis of the Blythe Solar Power Project (BSPP) finds that it will have several significant unmitigated environmental impacts. Before approving the project, the California Environmental Quality Act (CEQA) requires that we make certain findings. We address that requirement as follows:

The applicable CEQA requirement is contained in Public Resources Code Section 21081:

> "21081. Pursuant to the policy stated in Sections 21002 and 21002.1, no public agency shall approve or carry out a project for which an environmental impact report has been certified which identifies one or more significant effects on the environment that would occur if the project is approved or carried out unless both of the following occur:
>
> (a) The public agency makes one or more of the following findings with respect to each significant effect:
>
> (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
>
> (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
>
> (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.
>
> (b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment."

The Project may also violate Riverside County Land Use laws, ordinances, regulations, and standards (LORS) pertaining to land uses which may affect aviation activity in the vicinity of the Blythe Airport, triggering our duty to make Traffic & Transportation findings pursuant to Public Resources Code Sections 25525 and 25523(d).

1. Significant Project Impacts

As identified and discussed in the specific topic sections of this Decision we find that BSPP will have the following significant environmental impacts and incompatibilities with Riverside County LORS:

- **Cultural Resources**. The project may permanently change and/or result in the destruction of cultural resources, both known and as yet unknown, contributing to a cumulatively considerable impact which will be mitigated to the extent possible, but may not be fully mitigated.
- **Land Use**. The contribution of BSPP, in combination with the other renewable energy projects proposed in the region, to the loss of desert lands, is cumulatively significant. Lands formerly available for multiple uses—habitat, open space, grazing, and recreation—would no longer be available for those uses once a power plant is constructed.

- **Traffic and Transportation**. While all reasonably feasible measures would be implemented to reduce glint and glare as it might affect aircraft and vehicle traffic, it cannot be predicted with certainty whether those measures would reduce this impact below a level of significance. Furthermore, according to Policy 4.3.7 of the countywide policies of the 2004 Riverside County Land Use Compatibility Plan, the following use is prohibited:

  Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following take-off or towards an aircraft engaged in a straight final approach toward a landing at the airport.

- **Visual Resources**. The BSPP project would result in the installation of a large, industrial facility in the I-10 corridor. We find significant visual impacts from several Key Observation Points in the Chuckwalla Valley, McCoy Mountains, and along I-10. A significant cumulative impact to visual resources in eastern Riverside County is identified from the combination of BSPP and 18 other existing and proposed energy projects. The BSPP transmission line will result in a substantial contribution to cumulative visual impacts in the context of existing cumulative conditions. BSPP's contribution to visible industrialization of the desert landscape also constitutes a substantial contribution to a significant visual impact when considering existing and foreseeable projects, both within the immediate project viewshed and in a broader context encompassing the whole of the I-10 corridor.

2. Project Benefits

The BSPP, if constructed and operated as proposed, will provide the following benefits to California and its residents:

- BSPP will provide 1000 MW of renewable energy power, which will assist in meeting California's Renewable Portfolio Standard, which specifies that retail sellers of electricity serve 20 percent of their load with renewable energy by 2010. (Pub. Util. Code, § 399.11 et seq.) Gubernatorial Executive Orders increase the requirement to 33 percent by 2020. (Governor's Executive Order S-14-08.)

- Producing electricity from renewable resources provides a number of significant benefits to California's environment and economy, including improving local air quality and public health, reducing global warming emissions, developing local energy sources and diversifying our energy supply, improving energy security, enhancing economic development and creating green jobs. (2009 CEC Integrated Energy Policy Report, page 231)

- Scientific studies quantify the negative impacts of global climate change to California's and the world's population, environment, food supplies, flora and fauna, coastal regions, and public health. In order to reduce the impact, the State has adopted goals to reduce greenhouse gas emissions through renewable energy development.

- BSPP will assist the state in meeting its ambitious greenhouse gas reduction targets by generating 1000 MW of electricity with vastly lower greenhouse gas emissions than existing fossil fuel burning generating facilities.

- By generating electricity with the use of a small amount of fossil fuels, BSPP will reduce California's dependence on fossil fuels, a diminishing energy source.

- BSPP will provide construction jobs for an average and peak workforce of 604 and 1004, respectively, and approximately 221 jobs during operations. Most of those jobs will require highly trained workers.

- Construction and operation of BSPP will provide a boost to the economy from the purchase of major equipment, payroll, and supplies, increased sales tax revenue, and property taxes. Additional indirect economic benefits, such as employment in local service industry jobs and induced employment, will result from these expenditures as well.

3. Comparison of Project Alternatives

As is discussed in the Alternatives section, none of the project alternatives will significantly reduce the project impacts while still meeting the defined project objectives. The no-project alternative, which would eliminate the project's impacts, would also eliminate its benefits. The distributed solar energy (photovoltaic or thermal) generation and other renewable technologies are required *in addition to* large scale projects such as this in order to meet our renewable energy and GHG policy goals; the two complement, rather than compete with, each other.

4. Site Characteristics

The Blythe project site is adjacent to, and in the vicinity of, extensive existing development, including two state prisons, Interstate 10, and existing electricity infrastructure, including major transmission lines, and an existing natural gas-fired power plant.

5. Testimony of Terry O'Brien

Terry O'Brien, Deputy Director of the California Energy Commission Siting, Transmission and Environmental Protection Division, representing the Energy Commission staff, submitted written testimony entitled Comments Regarding a Possible Energy Commission Finding of Overriding Considerations. Mr. O'Brien testified that in staff's opinion it would be appropriate for the Commission to approve the project and find, pursuant to section 1752(k), that the project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity. (7/16/10 RT, pp. 33:13 to 35:25; Ex. 202.)

6. In arriving at the following findings, we have taken official notice of the following documents:

- Climate Action Team Report to Governor Schwarzenegger and the Legislature. CalEPA, March 2006.
- AB 32 Scoping Plan. CARB, December 2008.
- Integration of Renewable Resources. CAISO, Nov. 2007.

- 2007 Integrated Energy Policy Report. CEC, Nov. 2007.

- 2009 Integrated Energy Policy Report. CEC. Nov. 2009.

- Draft Final Opinion on Greenhouse Gas Regulatory Strategies:
    - Joint Agency Proposed Final Opinion. CPUC/CEC 2008.

- Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California. CEC (MRW and Associates). May 2009.

Based upon the above evidence and Staff recommendations, we find that overriding considerations warrant the approval of the project as mitigated through the Conditions of Certification we adopt herein. We further find that the project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity.

FINDINGS OF FACT

Based on the evidence and the conclusions drawn in other sections of this Decision, we make the following findings and conclusions

1. Climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.

2. The proposed project will have the following significant impacts which cannot be mitigated to insignificant levels:

    a. The cumulative loss of federally administered multiple use lands in the Chuckwalla Valley and Colorado Desert due to the project's cumulatively considerable contribution of impacts when considered in combination with other solar and wind projects proposed in the Southern California desert.

    b. Permanent change and/or destruction of cultural resources, both known and as yet unknown, contributing to a cumulatively considerable impact which will be mitigated to the extent possible, but may not be fully mitigated.

    c. Degradation of scenic vistas for motorists, recreationists, hikers, and others from various points in the Chuckwalla Valley, McCoy Mountains, and I-10 corridor.

    d. Possible glint and glare impacts to aircraft and vehicle traffic.

3. This Decision imposes all feasible mitigation measures to reduce the significant impacts of the project to the lowest possible, though still significant, levels.

4. The project will provide the following benefits:

    a. Contribution of 1000 MW of renewable energy power toward meeting California's Renewable Portfolio Standard and our renewable energy and GHG policy goals.

    b. A significant reduction in greenhouse gas emissions when compared with existing fossil fuel-burning generating facilities.

    c. Other important benefits to California's environment and economy include improving local air quality and public health, developing local energy sources, and diversifying our energy supply.

    d. Reduction of California's dependence on fossil fuels.

    e. Creation of construction jobs for an average and peak workforce of 604 and 1004, respectively, and approximately 221 jobs during operations, most requiring highly trained workers.

    f. Provide a boost to the economy from the purchase of major equipment, payroll, and supplies, increased sales tax revenue, and property taxes. Additional indirect economic benefits, such as indirect employment, and induced employment, will result from these expenditures as well.

5. The BSPP is adjacent to, and in the vicinity of, extensive existing development, including two state prisons, Interstate 10, and existing electricity infrastructure, including major transmission lines, and an existing natural gas-fired power plant.

6. We further find that the project may not comply with Policy 4.3.7 of the countywide policies of the 2004 Riverside County Land Use Compatibility Plan pertaining to land uses in the vicinity of the Blythe Airport. As required by sections 25525 and 25523 (d)(1) of the Warren-Alquist Act, we have determined that an override of this possible LORS noncompliance is warranted due to the fact that the project is required for public convenience and necessity and that there are not more prudent and feasible means of achieving public convenience and necessity. We have informed the Riverside County Airport Land Use Commission of this possible nonconformity pursuant to our obligation as set forth in section 25523(d)(1).

7. The project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity.

CONCLUSIONS OF LAW

1. The above described project benefits outweigh the significant impacts identified above.

2. It is appropriate to approve the BSPP despite its remaining significant environmental impacts.

3. It is the intent of this Commission to take all reasonable measures to preserve the continued existence of the desert special-status species. This Commission believes that this project, and other renewable energy projects, will result in the reduction of greenhouse gases which will help curb or reduce the impact of climate change to California, thereby allowing for the continued existence of the desert special-status species.

4. Therefore, this decision overrides the remaining significant unavoidable impacts that may result from this project, even with the implementation of the required mitigation measures described in this decision.

Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Exhibit List*

Appendix C: *Proof of Service List*

APPENDICES

AIR QUALITY

Applicable LORS	*Description*
Federal	
40 Code of Federal Regulations (CFR) Part 52	Nonattainment New Source Review (NSR) requires a permit and requires Best Available Control Technology (BACT) and Offsets. Permitting and enforcement is delegated to Mojave Desert Air Quality Management District (MDAQMD). Prevention of Significant Deterioration (PSD) requires major sources or major modifications to major sources to obtain permits for attainment pollutants. The BSPP is a new source that does not have a rule listed emission source thus the PSD trigger levels are 250 tons per year for NOx, VOC, SOx, PM10, PM2.5 and CO.
40 CFR Part 60	New Source Performance Standards (NSPS), Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generation Units. Establishes recordkeeping and reporting requirements for natural gas fired steam generating units. Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Establishes emission standards for compressions ignition internal combustion engines, including emergency generator and fire water pump engines.
40 CFR Part 93 General Conformity	Requires determination of conformity with State Implementation Plan for Projects requiring federal approvals if project annual emissions are above specified levels.
State	
Health and Safety Code (HSC) Section 40910-40930	Permitting of source needs to be consistent with Air Resource Board (ARB) approved Clean Air Plans.
HSC Section 41700	Restricts emissions that would cause nuisance or injury.

Applicable LORS	*Description*
California Code of Regulations (CCR) Section 93115	Airborne Toxics Control Measure for Stationary Compression Ignition Engines. Limits the types of fuels allowed, established maximum emission rates, establishes recordkeeping requirements on stationary compression ignition engines, including emergency generator and fire water pump engines.
Local (Mojave Desert Air Quality Management District, MDAQMD)	
Rule 201 and 203 Permits Required	Requires a Permit to Construct before construction of an emission source occurs. Prohibits operation of any equipment that emits or controls air pollutant without first obtaining a permit to operate.
Rules 401, 402, and 403 Nuisance, Visible Emissions, Fugitive Dust	Limits the visible, nuisance, and fugitive dust emissions and would be applicable to the construction period of the project.
Rule 404 Particulate Matter - Concentration	Limits the particulate matter concentration from stationary source exhausts.
Rule 406 Specific Contaminants	The rule prohibits sulfur compound emissions in excess of 500 ppmv.
Rule 407 Liquid and Gaseous Air Contaminants	The rule prohibits carbon monoxide emissions in excess of 2,000 ppmv.
Rule 409 Combustion Contaminants	Limits the emissions from fossil fuel combustion.
Rule 431 Sulfur Content of Fuels	Limits the sulfur content of liquid fuels to no more than 0.5% by weight.
Rule 900 Standard of Performance for New Stationary Source	Incorporates the Federal NSPS (40 CFR 60) rules by reference.
Rule 1303 New Source Review	Specifies BACT/Offsets technology and requirements for a new emissions unit that has potential to emit any regulated pollutants.
Rule 1306 Electric Energy Generating Facilities	Describes actions to be taken for permitting of power plants that are within the jurisdiction of the Energy Commission.

GREENHOUSE GAS

The BSPP, as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity generating facilities as currently required by the California Air Resources Board (ARB) for compliance with the California Global Warming Solutions Act of 2006 (AB 32 Núñez, Statutes of 2006, Chapter 488, Health and Safety Code sections 38500 et seq.) (ARB 2008a).

The BSPP, as a renewable energy generation facility, is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 (Chapter 11, Greenhouse Gases Emission Performance Standard, Article 1, Section 2903 [b][1]).

Since the proposed project would have emissions that are below 25,000 MT/year of CO2E, the proposed project would not be subject to federal mandatory reporting of greenhouse gases. It would also be exempt from the state's greenhouse gas reporting requirements.

ALTERNATIVES

California Environmental Quality Act (CEQA)

Energy Commission staff is required by agency regulations to examine the "feasibility of available site and facility alternatives to the Applicant's proposal which substantially lessen the significant adverse impacts of the proposal on the environment." (Cal. Code Regs., tit. 20, § 1765.)

The "Guidelines for Implementation of the California Environmental Quality Act," Title 14, California Code of Regulations, Section 15126.6(a), requires an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project."

In addition, the analysis must address the No Project Alternative. (Cal. Code Regs., tit. 14, § 15126.6[e].) The analysis should identify and compare the impacts of the various alternatives, but analysis of alternatives need not be in as much detail as the analysis of the proposed project.

The range of alternatives is governed by the "rule of reason," which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative if its effect cannot be reasonably ascertained and if its implementation is remote and speculative. (Cal. Code Regs., tit. 14, §15126.6[f][3].) However, if the range of alternatives is defined too narrowly, the analysis may be inadequate (*City of Santee v. County of San Diego* [4th District, 1989] 214 Cal. App. 3d 1438).

BIOLOGICAL RESOURCES

Applicable LORS	***Description***
Federal	
Federal Endangered Species Act (Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq.)	Designates and protects federally threatened and endangered plants and animals and their critical habitats.
Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26))	Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the U.S. Army Corps of Engineers (USACE) for a discharge of dredged or fill materials into waters of the U.S., including wetlands. Section 401 requires a permit from a regional water quality control board (RWQCB) for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards.
Eagle Act (Title 50, Code of Federal Regulations, section 22.26)	Would authorize limited take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) under the Eagle Act, where the taking is associated with, but not the purpose of activity, and cannot practicably be avoided.
Eagle Act (Title 50, Code of Federal Regulations, section 22.27)	Would provide for the intentional take of eagle nests where necessary to alleviate a safety hazard to people or eagles; necessary to ensure public health and safety; the nest prevents the use of a human – engineered structure, or; the activity, or mitigation for the activity, will provide a net benefit to eagles. Only inactive nests would be allowed to be taken except in the case of safety emergencies.
Bald and Golden Eagle Protection Act (Title 16, United States Code section 668)	This law provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the Act.
Northern and Eastern Colorado Desert Coordinated Management Plan (NECO)	A regional amendment to the CDCA Plan approved in 2002, NECO protects and conserves natural resources while simultaneously balancing human uses in the northern and eastern portion of the Colorado Desert.
California Desert Protection Act of 1994 (CDPA)	An Act of Congress which established 69 wilderness areas, the Mojave National Preserve, expanded Joshua Tree and Death Valley National Monuments and redefined them as National Parks. Lands transferred to the National Park Service were formerly administered by the BLM and included substantial portions of grazing allotments, wild horse and burro Herd Management Areas, and Herd Areas.
Migratory Bird Treaty (Title 16, United States Code, sections 703 through 711)	Makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird) as designated in the Migratory Bird Treaty Act.
Executive Order 11312	Prevent and control invasive species.
Wild Free-Roaming	Wild horses and burros are protected from capture, branding,

Applicable LORS	*Description*
Horse and Burro Act (Public Law 92-195)	harassment, and death, and managed with the intent to achieve and preserve the natural ecological balance on public lands.
California Desert Conservation Area Plan	The California Desert Conservation Area (CDCA) comprises one of two national conservation areas established by Congress at the time of the passage of the Federal Land and Policy Management Act (FLPMA). The FLPMA outlines how the BLM will manage public lands. Congress specifically provided guidance for the management of the CDCA and directed the development of the 1980 CDCA Plan.
Desert Tortoise (Mojave Population) Recovery Plan (USFWS 1994) and Draft Revised Recovery Plan (USFWS 2008a)	Describes a strategy for recovery and delisting of the desert tortoise.
State	
California Endangered Species Act of 1984 (Fish and Game Code, sections 2050 through 2098)	Protects California's rare, threatened, and endangered species.
Protected furbearing mammals (California Code of Regulations, Title 14, section 460)	Fisher, marten, river otter, desert kit fox and red fox may not be taken at any time.
California Code of Regulations (Title 14, sections 670.2 and 670.5)	Lists the plants and animals of California that are declared rare, threatened, or endangered.
Fully Protected Species (Fish and Game Code, sections 3511, 4700, 5050, and 5515)	Designates certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also California Code of Regulations Title 14, section 670.7).
Nest or Eggs (Fish and Game Code section 3503)	Protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird.
Birds of Prey (Fish and Game Code section 3503.5	Unlawful to take, possess, or destroy any birds in the orders Falconiformes and Strigiformes or to take, possess, or destroy the nest or eggs of any such bird.
Migratory Birds (Fish and Game Code section 3513)	Protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds.
Nongame mammals (Fish and Game Code section 4150)	Makes it unlawful to take or possess any non-game mammal or parts thereof except as provided in the Fish and Game Code or in accordance with regulations adopted by the commission.
Significant Natural Areas (Fish and Game Code section 1930 and following)	Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.
California Environmental Quality Act (CEQA), CEQA Guidelines section 15380	CEQA defines rare species more broadly than the definitions for species listed under the state and federal Endangered Species Acts. Under section 15830, species not protected through state or federal listing but nonetheless demonstrable as "endangered" or "rare" under CEQA should also receive consideration in environmental analyses. Included in this category are many plants considered rare by the California Native Plant Society (CNPS) and some animals on the CDFG's Special Animals List.

Applicable LORS	*Description*
Streambed Alteration Agreement (Fish and Game Code sections 1600 and following)	Regulates activities that may divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake in California designated by CDFG in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. Impacts to vegetation and wildlife resulting from disturbances to waterways are also reviewed and regulated during the permitting process.
California Native Plant Protection Act of 1977 (Fish and Game Code section 1900 and following)	Designates state rare, threatened, and endangered plants.
California Desert Native Plants Act of 1981 (Food and Agricultural Code section 80001 and following and California Fish and Game Code sections 1925-1926)	Protects non-listed California desert native plants from unlawful harvesting on both public and private lands in Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties. Unless issued a valid permit, wood receipt, tag, and seal by the commissioner or sheriff, harvesting, transporting, selling, or possessing specific desert plants is prohibited.
Porter-Cologne Water Quality Control Act	Regulates discharges of waste and fill material to waters of the State, including “isolated” waters and wetlands.
Local	
Riverside County General Plan	Protection and preservation of wildlife for the maintenance of the balance of nature.

CULTURAL RESOURCES

Applicable LORS	*Description*
Federal	
Antiquities Act of 1906 16 United States Code (USC) 431–433	Establishes criminal penalties for unauthorized destruction or appropriation of "any historic or prehistoric ruin or monument, or any object of antiquity" on federal land; empowers the President to establish historical monuments and landmarks.
Archaeological Resources Protection Act of 1979 (ARPA) 16 USC 470aa et seq.	Protects archaeological resources from vandalism and unauthorized collecting on public and Indian lands.
State	
Public Resources Code (PRC), Section 5097.98(b) and (e)	Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the Native American Heritage Commission-identified Most Likely Descendents (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to re-inter the remains elsewhere on the property in a location not subject to further disturbance.
PRC, Sections 5097.99 and 5097.991	5097.99 establishes as a felony the acquisition, possession, sale, or dissection with malice or wantonness Native American remains or funerary artifacts. 5097.991 establishes as state policy the repatriation of Native American remains and funerary artifacts.
Health and Safety Code (HSC), Section 7050.5	Makes it a misdemeanor to mutilate, disinter, wantonly disturb, or willfully remove human remains found outside a cemetery; Requires a project owner to halt construction if human remains are discovered and to contact the county coroner.
Local	
Riverside County General Plan, Multipurpose Open Space Element (Chapter 5), Open Space Policies OS 19.2–19.4	OS 19.2 requires the review of all proposed development for archaeological sensitivity; OS 19.3 Employs procedures to protect the confidentiality and prevent inappropriate public exposure of sensitive archaeological resources when soliciting the assistance of public and volunteer organizations. OS 19.4 Require a Native American Statement as part of the environmental review process on development projects with identified cultural resources.
Riverside County General Plan, Multipurpose Open Space Element (Chapter 5), Open Space Policies OS 19.5–19.7	OS 19.5 allows the History Division of the Riverside County Regional Park and Open-Space District to evaluate large project proposals for their potential preservation or destruction of historic sites; requires projects to provide feasible mitigation for impacts to historic sites prior to county approval. OS 19.6 enforces the California State Historic Building Code so that historic buildings can be preserved and used without posing a hazard to public safety. OS 19.7 endorses the allocation of resources and/or tax credits to prioritize retrofit of historic structures.

Applicable LORS	***Description***
Riverside County General Plan, Exhibit A, CEQA Findings of Fact and Statement of Overriding Considerations, Mitigation Monitoring Program, Measures 4.7.1A, 4.7.1B, and 4.7.1C	Outlines mitigation measures for cultural resources monitoring programs.

FACILITY DESIGN

Applicable LORS	*Description*
Federal	Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards
State	2007 (or the latest edition in effect) California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations)
Local	Riverside County regulations and ordinances.
General	American National Standards Institute (ANSI) American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)

GEOLOGY AND PALEONTOLOGY

Applicable LORS	*Description*
Federal	
Antiquities Act of 1906 (16 United States Code [USC], 431-433)	The proposed BSPP facility site is located entirely on land currently administered by the BLM. Although there is no specific mention of natural or paleontologic resources in the Act itself, or in the Act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations [43 CFR Part 3], 'objects of antiquity' has been interpreted to include fossils by the Federal Highways Act of 1956, the National Park Service (NPS), the BLM, the Forest Service (USFS), and other Federal agencies.
National Environmental Policy Act (NEPA) of 1970 (42 USC 4321, et. seq.)	Established the Council on Environmental Quality (CEQ) in the Executive Office of the President, which is charged with preserving 'important historic, cultural, and natural aspects of our national heritage'.
Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701-1784)	Mandates that the BLM manage public lands under the principles of multiple use and sustained yield unless otherwise specified by law; and to protect the quality scientific, scenic, historical, archeological, and other values, and to develop 'regulations and plans for the protection of public land areas of critical environmental concern', which include 'important historic, cultural or scenic values'. Also charged with the protection of 'life and safety from natural hazards'.
Paleontologic Resources Preservation Act (PRPA) (Public Law [PL] 111-011)	Authorizes Departments of Interior and Agriculture Secretaries to manage the protection of paleontologic resources on Federal lands.
National Historic Preservation Act of 1966 (NHPA) (16 USC 470)	Establishes policies for the 'preservation of the prehistoric and historic resources of the United States', under the direction of the Secretary of the Interior and the BLM.
State	
California Building Code (CBC), 2007	The CBC (2007) includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control).
Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), section 2621–2630	Mitigates against surface fault rupture of known active faults beneath occupied structures. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. Portions of the site and proposed ancillary facilities are located within designated Alquist-Priolo Fault Zones. The proposed site layout places occupied structures outside of the 50-foot setback zone.
The Seismic Hazards Mapping Act, PRC Section 2690–2699	Areas are identified that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches.
PRC, Chapter 1.7, sections 5097.5 and 30244	Regulates removal of paleontologic resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.

Applicable LORS	*Description*
Warren-Alquist Act, PRC, sections 25527 and 25550.5(i)	The Warren-Alquist Act requires the Energy Commission to "give the greatest consideration to the need for protecting areas of critical environmental concern, including, but not limited to, unique and irreplaceable scientific, scenic, and educational wildlife habitats; unique historical, archaeological, and cultural sites…" With respect to paleontologic resources, the Energy Commission relies on guidelines from the Society for Vertebrate Paleontology, indicated below.
California Environmental Quality Act (CEQA), PRC sections 15000 et seq., Appendix G	Mandates that public and private entities identify the potential impacts on the environment during proposed activities. Appendix G outlines the requirements for compliance with CEQA and provides a definition of significant impacts on a fossil site.
Society for Vertebrate Paleontology (SVP), 1995	The "Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontologic Resources: Standard Procedures" is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontologic resources. The measures were adopted in October 1995 by the SVP, a national organization of professional scientists.
Local	
Riverside County General Plan 2000, Safety Element	Adopts the Uniform Building Code (UBC) (1997), which provides design criteria for buildings and excavations. The UBC is superseded by the CBC (2007). Requires mitigation measures for geologic hazards, including seismic shaking, surface rupture (adopts APEFZ Act), liquefaction, unstable soils and slopes, and flooding.
Riverside County General Plan 2000, Multipurpose Open Space Element	Provides for 'preservation of cultural, historical, archaeological, paleontologic, geologic and educational resources'. Also provides a map showing paleontologic sensitivity in the county.

HAZARDOUS MATERIALS MANAGEMENT

Applicable LORS	*Description*
Federal	
The Superfund Amendments and Reauthorization Act of 1986 (42 USC §9601 et seq.)	Contains the Emergency Planning and Community Right To Know Act (also known as SARA Title III).
The Clean Air Act (CAA) of 1990 (42 USC 7401 et seq. as amended)	Established a nationwide emergency planning and response program and imposed reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous materials.
The CAA section on risk management plans (42 USC §112(r)	Requires states to implement a comprehensive system informing local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq.
49 CFR 172.802	The U.S. Department of Transportation (DOT) requirement that suppliers of hazardous materials prepare and implement security plans.
49 CFR Part 1572, Subparts A and B	Requires suppliers of hazardous materials to ensure that all their hazardous materials drivers are in compliance with personnel background security checks.
The Clean Water Act (CWA) (40 CFR 112)	Aims to prevent the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Requires a written spill prevention, control, and countermeasures (SPCC) plan to be prepared for facilities that store oil that could leak into navigable waters.
Title 49, Code of Federal Regulations, Part 190	Outlines gas pipeline safety program procedures.
Title 49, Code of Federal Regulations, Part 191	Addresses transportation of natural and other gas by pipeline: annual reports, incident reports, and safety-related condition reports. Requires operators of pipeline systems to notify the DOT of any reportable incident by telephone and then submit a written report within 30 days.
Title 49, Code of Federal Regulations, Part 192	Addresses transportation of natural and other gas by pipeline and minimum federal safety standards, specifies minimum safety requirements for pipelines including material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use that characterize the surrounding land. This part also contains regulations governing pipeline construction (which must be followed for Class 2 and Class 3 pipelines) and the requirements for preparing a pipeline integrity management program.
Federal Register (6 CFR Part 27) interim final rule	A regulation of the U.S. Department of Homeland Security that requires facilities that use or store certain hazardous materials to submit information to the department so that a vulnerability assessment can be conducted to determine what certain specified security measures shall be implemented.
State	
Title 8, California Code of Regulations, section 5189	Requires facility owners to develop and implement effective safety management plans that ensure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the Risk Management Plan (RMP) process.

Applicable LORS	*Description*
California Health and Safety Code, section 41700	Requires that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)	Prevents certain chemicals that cause cancer and reproductive toxicity from being discharged into sources of drinking water.
Hazardous Material Business Plan, Cal HSC Sections 25500 to 25541; 19 CCR Sections 2720 to 2734	Requires the submittal of a chemical inventory and planning and reporting for management of hazardous materials.
Hazardous Substance Information and Training Act, 8 CCR Section 339; Section 3200 et seq., 5139 et seq., and 5160 et seq.	Requires listing and implementation of specified control measures for management of hazardous substances.
California HSC Sections 25270 through 25270.13	Requires the preparation of a Spill Prevention, Control, and Countermeasures (SPCC) Plan if 10,000 gallons or more of petroleum is stored on-site. The above regulations would also require the immediate reporting of a spill or release of 42 gallons or more to the California Office of Emergency Services and the Certified Unified Program Authority (CUPA).
Process Safety Management: Title 8 CCR Section 5189	Requires facility owners to develop and implement effective process safety management plans when toxic, reactive, flammable, or explosive chemicals are maintained on site in quantities that exceed regulatory thresholds
Local	
Riverside County Fire Code, Riverside County Code Chapter 8.32: Ordinance No. 787	Adopts the California Fire Code, 2007 Edition, with some of its appendices, into Riverside County regulations.
Disclosure of Hazardous Materials and the Formulation of Business Emergency Plans: Riverside County Ordinance 651	Requires disclosure where businesses handle hazardous materials and requires the development of response plans; designates Riverside County Department of Environmental Health as responsible for administration and enforcement of local codes.

LAND USE

Applicable LORS	*Description*
Federal	
Federal Land Policy and Management Act (FLPMA), 1976 – 43 CFR 1600, Sec. 501. [43 U.S.C. 1761]	Establishes public land policy; guidelines for administration; and provides for the management, protection, development, and enhancement of public lands. In particular, the FLPMA's relevance to the proposed project is that Title V, Section 501 establishes BLM's authority to grant rights-of-way for generation, transmission, and distribution of electrical energy (FLPMA 2001).
Bureau of Land Management -California Desert Conservation Area (CDCA) Plan, 1980 as Amended (BLM 1980) Northern and Eastern Colorado Desert (NEC0) Coordinated Management Plan	The 25 million-acre CDCA contains over 12 million acres of public lands spread within the area known as the California Desert, which includes the following three deserts: the Mojave, the Sonoran, and a small portion of the Great Basin. The 12 million acres of public lands administered by the BLM are half of the CDCA. The CDCA Plan is a comprehensive, long-range plan with goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA, and it is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. The plan's goals and actions for each resource are established in its 12 elements. Each of the plan elements provides both a desert-wide perspective of the planning decisions for one major resource or issue of public concern as well as more specific interpretation of multiple-use class guidelines for a given resource and its associated activities. The NECO plan is a landscape-scale planning effort for most of the California portion of the Sonoran Desert ecosystem. The planning area encompasses over five million acres. The NECO Plan amended the CDCA plan in 2002 and is currently undergoing evaluation for further amendment. The CDCA Plan/NECO is related to the Draft Solar Energy Programmatic Environmental Impact Statement which is expected to be leased in 2011 and could give guidance as to how and where solar projects can be built on BLM lands.
Wild and Free-Roaming Horse and Burro Act (1971) (BLM 2009h)	The BLM protects, manages, and controls wild horses and burros under the authority of the Wild Free-Roaming Horses and Burros Act of 1971 (Act) to ensure that healthy herds thrive on healthy rangelands. The BLM manages these animals as part of its multiple-use mission under the 1976 Federal Land Policy and Management Act. One of the BLM's key responsibilities under the Act is to determine the "appropriate management level" (AML) of wild horses and burros on the public rangelands.
Local	
Riverside County General Plan and Vision, Land Use Element	The Land Use Element designates the general distribution, location, and extent of land uses, such as housing, business, industry, open space, agriculture, natural resources, recreation, and public/quasi-public uses. The Land Use section of the Palo Verde Valley Area Plan discusses the city of Blythe Airport Influence Area. The Land Use designation is Open Space Rural.

Applicable LORS	*Description*
Open Space-Rural Policies: LU 20.1 LU 20.4 Palo Verde Valley Area Plan – Land Use (2003) Blythe Airport Influence Area Land Use Designation Multipurpose Open Space- LU Policies LU.20.1 and 20.4 noted above would also apply	The "Open Space Rural" land use designation is applied to remote privately owned open space areas with limited access and a lack of public services. Require that structures be designed to maintain the environmental character in which they are located. Ensure that development does not adversely impact the open space and rural character of the surrounding area Land uses, concentrations of population, and height of proposed development within this airport influence area are restricted in certain areas. There are a number of safety zones within the Blythe Airport Influence Area. The project would affect Zones E, D, C, and B1. The project area is designated rural desert. Require that structures be designed to maintain the environmental character in which they are located. Ensure that development does not adversely impact the open space and rural character of the surrounding area
Riverside County Land Use Ordinance	Assigns zones to land within unincorporated areas in the County, describes land uses allowed in each zone, and generally includes direction for implementing the County general plan.
Riverside County Airport Land Use Compatibility Plan	Contains land use compatibility guidelines for the Blythe Airport. The Riverside County Airport Land Use Commission (RCALUC) reviews major land use projects within the Airport Influence Area to determine if they are consistent with the Compatibility Plan adopted by the RCALUC for the airports environs.

NOISE AND VIBRATION

Applicable LORS	*Description*
Federal	
Occupational Safety & Health Act (OSHA): 29 U.S.C. § 651 et seq. U.S. Environmental Protection Agency (USEPA)	Protects workers from the effects of occupational noise exposure. Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration, (OSHA) adopted regulations (29 C.F.R. § 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation. Guidelines are available from the U.S. Environmental Protection Agency (USEPA) to assist state and local government entities in developing state and local LORS for noise. Because there are existing local LORS that apply to this project, the USEPA guidelines are not applicable. There are no federal laws governing off-site (community) noise. The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 vibrational decibel (VdB), which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.

Applicable LORS	*Description*
State	
California Occupational Safety & Health Act (Cal-OSHA): 29 U.S.C. § 651 et seq., Cal. Code Regs., tit. 8, §§ 5095-5099	Protects workers from the effects of occupational noise exposure. California Government Code Section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its general plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The State of California, Office of Noise Control, prepared the Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards. This model also defines a simple tone, or "pure tone," as one-third octave band sound pressure levels that can be used to determine whether a noise source contains annoying tonal components. The Model Community Noise Control Ordinance further recommends that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by five A-weighted decibels (dBA). The California Occupational Safety and Health Administration (Cal-OSHA) has promulgated occupational noise exposure regulations (Cal. Code Regs., tit. 8, §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to federal OSHA standards
Local	
Riverside County General Plan, Noise Element Riverside County Noise Ordinance, Ordinance 847 (Regulating Noise)	Establishes goals, objectives, and procedures to protect the public from noise intrusion. The project is located within Riverside County. The Noise Element of the Riverside County General Plan (Riverside County 2007) and the Riverside County Noise Ordinance (Riverside County 2008) apply to this project. **Riverside County Noise Element** The County Noise/Land Use Compatibility

Applicable LORS	*Description*
	Guidelines, provided in the Noise Element, are used to evaluate potential noise impacts and provide criteria for environmental impact findings and conditions for project approval. Land use compatibility defines the acceptability of a land use in a specified noise environment. For residential land uses, these guidelines categorize noise levels of up to 60 dBA day/night average sound level (Ldn) or CNEL as “normally acceptable” and up to 70 dBA Ldn or CNEL as “conditionally acceptable”. **Riverside County Noise Ordinance** The Noise Ordinance allows for different levels of acceptable noise depending upon land use. Section 4 of Ordinance No. 847 (Regulating Noise) limits noise on any property that causes the exterior noise level on any other occupied property to 55 dBA during the daytime hours and 45 dBA during the nighttime hours, for noise-sensitive receptors within a very low density rural area, such the area surrounding the project site. This Noise Ordinance also limits the hours of construction activities to the hours of 6:00 a.m. to 7:00 p.m., June through September, 6:00 a.m. to 6:00 p.m., October through May, Mondays through Fridays, and to 9:00 a.m. to 5:00 p.m. on Saturdays.

POWER PLANT EFFICIENCY

No federal, state, local, or county laws, ordinances, regulations and standards (LORS) apply to the efficiency of this project.

POWER PLANT RELIABILITY

No federal, state, local, or county laws, ordinances, regulations and standards (LORS) pertain to the reliability of this project.

PUBLIC HEALTH

Applicable LORS	*Description*
Federal	
Clean Air Act section 112 (Title 42, U.S. Code section 7412)	This act requires new sources that emit more than 10 tons per year of any specified Hazardous Air Pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology.
State	
California Health and Safety Code section 25249.5 et seq. (Proposition 65)	These sections establish thresholds of exposure to carcinogenic substances above which Prop 65 exposure warnings are required.
California Health and Safety Code section 41700	This section states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."
California Health and Safety Code Sections 44300 et seq.	Air Toxics Hot Spots Program requires participation in the inventory and reporting program at the District level.
California Health and Safety Code Sections 44360 - 44366	Air Toxics Hot Spots Information and Assessment Act requires that based on results of an HRA conducted per CARB/OEHHA guidelines, toxic contaminants do not exceed acceptable levels.
California Public Resource Code section 25523(a); Title 20 California Code of Regulations (CCR) section 1752.5, 2300–2309 and Division 2 Chapter 5, Article 1, Appendix B, Part (1); California Clean Air Act, Health and Safety Code section 39650, et seq.	These regulations require a quantitative health risk assessment for new or modified sources, including power plants that emit one or more toxic air contaminants (TACs).
Local	
Mojave Desert Air Quality Management District (MDAQMD) Rule 402	Prohibits the discharge of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public; endanger the comfort, repose, health or safety of the public; or cause injury or damage to business or property.
MDAQMD Regulation X Emission Standards for Additional Specific Air Contaminants	Provides notice to the regulated community that California Air Toxic Control measures (ATCMs) are enforceable by the MDAQMD within its jurisdiction and federal maximum achievable control technology (MACT) and NESHAPS are adopted by reference and enforced by the MDAQMD.
MDAQMD Rule 1320	Requires the use of BACT and T-BACT at certain projects and the preparation of an HRA.
MDAQMD Rule 1520	Implementation of HSC Section 44300 et seq., Air Toxics "Hot Spots" Information and Assessment Act.

SOCIOECONOMICS

Applicable LORS	*Description*
State	
California Education Code, Section 17620	The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.
California Government Code, Sections 65996-65997	Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.

SOIL & WATER RESOURCES

Federal

Clean Water Act (CWA) of 1977 (Including 1987 Amendments)

- *Section 401*
- *Section 402*
- *Section 404*
- The U.S. Bureau of Reclamation, Colorado River – Proposed Accounting Surface Rule, 73 Federal Register 40, 916 (July 16, 2008) (subsequently withdrawn)

State

State of California Constitution Article X, Section 2

California Storm Water Permitting Program

California Water Code

- *Section 1200 "Water Rights."*

Porter-Cologne Water Quality Control Act

- *Section 13050*
- *Section 13260 et seq.*
- *Section 13173 (Designated Wastes)*

- *Section 13240 et seq. (Water Control Plan)*
- *Section 13243*
- *Section 13263 (Waste Discharge Requirements)*
- *Section 13271 (Discharge Notification)*
- *Section 13550*
- *Section 13551*
- *Section 13552*
- *Section 13571*

California Code of Regulations

Title 22, Article 3, Sections 64400.80 through 64445

- *Title 23, Division 3, Chapter 9*
- *Title 23, Division 3, Chapter 15*
- *Title 27, Section 2000 et seq. and Title 23, Section 2510 et seq.*

State Water Resources Control Board Policies

- *Anti-Degradation Policy (Resolution No. 68-16)*
- *Power Plant Cooling Water Policy (Resolution No. 75-58)*
- *Water Reclamation Policy (Resolution No. 77-01)*
- *Sources of Drinking Water Policy (Resolution No. 88-63)*
- *Policies and Procedures for Investigations and Clean-up and Abatement of Discharges Under CWC Section 13304 (Resolution No. 92-49)*
- *Water Quality Control Policy for Recycled Water (Resolution No. 209-0011)*

Public Resources Code

- *Section 25300 et seq.*

California Constitution

Warren-Alquist Act

Regional and Local

Riverside County Ordinance Code, Title 13, Chapter 13.20 – Water Wells

- *Section 13-.20.160 Well Logs*
- *Section 13.20.190 Water Quality Standards*
- *Section 13.20.220 Well Abandonment*
- *Section 13.20.240 Declaration of Proposed Reuse*

Riverside County Ordinance Code, Title 8, Chapter 8.124 - Sewage Discharge

- *Section 8.124.030, General Requirements for an Approval and Construction Permit*
- *Section 8.124.050 Operation Permits*

Riverside County Title 15 Chapter 15, 24 Uniform Plumbing Code

- *Section 15.24.010. Adopted by Reference, Appendix K, Section K1 amended – Private Sewage Disposal – General*
- *Section 15.24.010. Adopted by Reference, Appendix K, Section K6(i) amended – Disposal fields*

Riverside County Title 15 Chapter 15.80 Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program

TRAFFIC AND TRANSPORTATION

Applicable LORS	*Description*
Federal	
Code of Federal Regulations (CFR), Title 14, Aeronautics and Space; Part 77, Objects Affecting Navigable Airspace (14 CFR 77)	Includes standards for determining physical obstructions to navigable airspace; information about requirements for notices, hearings, and requirements for aeronautical studies to determine the effect of physical obstructions to the safe and efficient use of airspace.
*Code of Federal Regulations (*CFR*)*, Title 49, Subtitle B, Sections 171-177; Sections 350-399; Appendices A-G Other Regulations Relating to Transportation	49 CFR Subtitle B includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) as well as safety measures for motor carriers and motor vehicles operating on public highways.
State	
California Vehicle Code (CVC), Division 2, Chapter 2.5, Div. 6; Chap. 7, Div. 13; Chap. 5, Div. 14.1; Chap. 1 and 2, Div. 14.8, Div. 15	Pertain to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and transporting hazardous materials.
California Streets and Highway Code, Section 117; Section 660-695; Section 700-711; Section 1450; 1460 et seq.; and 1480 et. Seq.	Pertain to regulating rights-of-way encroachments and granting permits for encroachment on state highways and freeways and on county roads.
California Health and Safety Code; Section 25160 et seq.	Pertain to operators of vehicles transporting hazardous materials
Local	
Riverside County General Plan, Circulation Element and Palo Verde Valley Area Plan, which is part of the Riverside County General Plan	Pertains to public policies and strategies for the transportation system in Riverside County, including those pertaining to transportation routes, terminals, and facilities; construction of extensions of existing streets; and levels of services (LOS), and airports.
Riverside County Municipal Code, Title 10, Vehicles and Traffic, Section 10.08	Pertains to requirements for oversize and overweight vehicles.
Riverside County Airport Land Use Compatibility Plan	Pertains to heights of projects as well as other restrictions in areas located near airports. All applicable policies and procedures in the Riverside plan are incorporated as part of the city of Blythe's policies.

Applicable LORS	***Description***
City of Blythe General Plan 2025, Chapter 4, Circulation Element	Establishes regional transportation objectives, policies, and implementation measures for various modes of transportation as well as levels of service. Plan is also coordinated with Palo Verde Valley Area Plan and County of Riverside General Plan.
City of Blythe General Plan 2025, Chapter 7, Safety Element	Establishes policies pertaining to airport safety, including minimizing injury to aircraft occupants and preventing creation of hazards to flights. Guiding policies of this section include Blythe Airport Master Plan; Land Use Compatibility Plan; and Federal Aviation Regulations Part 77. Section also contains five guiding policies concerning hazards to airspace; visual disturbances involving light and glare; and electronic devices.
City of Blythe Municipal Code, Title 10, Section 19	Pertains to permit requirements for moving heavy loads and equipment on city streets.
Palo Verde Valley Area Plan	Includes height and other restrictions pertaining to the Blythe Airport.

TRANSMISSION LINE SAFETY AND NUISANCE

Applicable LORS	*Description*
Aviation Safety	
Federal	
Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable Air Space"	Describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards.
FAA Advisory Circular No. 70/7460-1G, "Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space"	Addresses the need to file the "Notice of Proposed Construction or Alteration" form (Form 7640) with the FAA in cases of potential for an obstruction hazard.
FAA Advisory Circular 70/460-1G, "Obstruction Marking and Lighting"	Describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.
Interference with Radio Frequency Communication	
Federal	
Title 47, CFR, section 15.2524, Federal Communications Commission (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication and requires mitigation of any interference by the owner of the source.
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52)	Governs the construction and operation of power and communications lines to prevent or mitigate interference.
Audible Noise	
Local	
Riverside County General Plan, Noise Element	Establishes policies and programs to ensure that noise levels are appropriate to land uses.
Riverside County Noise Ordinance	Establishes performance standards for planned residential or other noise-sensitive land uses.
Hazardous and Nuisance Shocks	
State	
CPUC GO-95, "Rules for Overhead Electric Line Construction"	Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.
Title 8, California Code of Regulations (CCR) section 2700 et seq. "High Voltage Safety Orders"	Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.
National Electrical Safety Code	Specifies grounding procedures to limit nuisance shocks. Also specifies minimum conductor ground clearances.
Industry Standards	
Institute of Electrical and Electronics Engineers (IEEE) 1119, "IEEE Guide for Fence Safety Clearances in Electric-Supply Stations"	Specifies the guidelines for grounding-related practices within the right-of-way and substations.
Electric and Magnetic Fields	
State	

Applicable LORS	*Description*
GO-131-D, CPUC ”Rules for Planning and Construction of Electric Generation Line and Substation Facilities in California”	Specifies application and noticing requirements for new line construction including EMF reduction.
CPUC Decision 93-11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields.
Industry Standards	
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines	Specifies standard procedures for measuring electric and magnetic fields from an operating electric line.
Fire Hazards	
State	
14 CCR sections 1250-1258, “Fire Prevention Standards for Electric Utilities”	Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.

TRANSMISSION SYSTEM ENGINEERING

Applicable LORS	*Description*
The North American Electric Reliability Corporation (NERC)	North American Reliability Council (NERC) Reliability Standards for the Bulk Electric Systems of North America provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC Reliability Standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Reliability Standards are similar to NERC/WECC Standards, certain aspects of the NERC/WECC Standards are either more stringent or more specific than the NERC Standards for Transmission System Contingency Performance. The NERC Reliability Standards apply not only to interconnected system operation but also to individual service areas (NERC 2006).
Western Electricity Coordinating Council's (WECC)	The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. These standards require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. Certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section I.A of the standards, "NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table" and on Section I.D, "NERC and WECC Standards for Voltage Support and Reactive Power". These standards require that the results of power

	flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WECC 2006).
California Public Utilities Commission (CPUC) General Order 95 (GO-95*), Rules for Overhead Electric Line Construction*	Specifies uniform requirements for the construction of overhead electric lines. Compliance with this order ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of overhead electric lines, and for the safety of the general public.
CPUC General Order 128 (GO-128), *Rules for Underground Electric Line Construction*	Establishes uniform requirements for the construction of underground electric lines. Compliance with this order also ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of underground electric lines, and for the safety of the general public.
National Electric Safety Code 1999	Provides electrical, mechanical, civil, and structural requirements for overhead electric line construction and operation.
California Independent System Operator (CAISO)	California ISO Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the California ISO transmission grid facilities. The California ISO Grid Planning Standards incorporate the NERC/WECC and NERC Reliability Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar

	to the NERC/WECC or NERC Reliability Planning Standards for Transmission System Contingency Performance. However, the California ISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The California ISO Standards apply to all participating transmission owners interconnecting to the California ISO controlled grid. They also apply when there are any impacts to the California ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the California ISO (California ISO 2002a). California ISO/FERC Electric Tariff provides guidelines for construction of all transmission additions/upgrades (projects) within the California ISO controlled grid. The California ISO determines the “Need” for the proposed project where it will promote economic efficiency or maintain system reliability. The California ISO also determines the Cost Responsibility of the proposed project and provides an Operational Review of all facilities that are to be connected to the California ISO grid (California ISO 2007a).

VISUAL RESOURCES

Applicable LORS	*Description*
Federal	
California Desert Conservation Area (CDCA) Plan	The BSP Project is located within the California Desert Conservation Area Plan, which is the BLM Resource Management Plan applicable to the project site (USDOI, 1980, as amended). The CDCA Plan did not include Visual Resource Management (VRM) inventory or management classes. However, a BLM-approved Visual Resource Inventory (VRI) was conducted in 2005 for the Devers-Palo Verde 2 Transmission Line Project EIS/EIR, which covers the project site. The BSPP site is classified in the CDCA Plan as Multiple-Use Class (MUC) M (Moderate Use). Management of MUC M lands is based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety of present and future uses such as mining, live- stock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources, which permitted uses may cause. The CDCA Plan includes a table (Table 1), which illustrates the types of allowable land uses by MUC Class. The table specifically includes Electrical Power Generation Facilities including Wind/Solar facilities. Guidance provided under this section allows for the authorization of such facilities within MUC M lands in compliance with NEPA requirements. New major electric transmission facilities may be allowed only within designated utility corridors. Existing facilities within designated utility corridors may be maintained and upgraded or improved in accordance with existing rights-of-way or amendments to right-of-way grants.
State	
State Scenic Highway Program	The California State Department of Transportation (Caltrans) identifies a state system of eligible and designated scenic highways which, if designated, are subject to various controls intended to preserve their scenic quality (Ca. Streets and Highways Code, Sections 260 through 263). Interstate 10 within the project viewshed is not listed as an eligible State Scenic Highway.
Local	
Riverside County Integrated Plan LU-4 Relating to Project Design	LU 4.1 Requires that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts: c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review.

Applicable LORS	*Description*
	d. Require that new development utilize drought- tolerant landscaping and incorporate adequate drought-conscious irrigation systems.
	l. Mitigate noise, odor, lighting, and other impacts on surrounding properties.
	m. Provide and maintain landscaping in open spaces and parking lots.
	n. Include extensive landscaping.
	o. Preserve natural features, such as unique natural terrain, drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.
	p. Require that new development be designed to provide adequate space for pedestrian connectivity and access, recreational trails, vehicular access and parking, supporting functions, open space, and other pertinent elements.
	LU 4.2 Require property owners to maintain structures and landscaping to a high standard of design, health, and safety through the following: c. Promote and support community and neighborhood based efforts for the maintenance, upkeep, and renovation of structures and sites.
County Scenic Corridors	LU 13.1 Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.
	LU 13.3 Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.
	LU 13.7 Require that the size, height, and type of on-premise signs visible from Designated and Eligible State and County Scenic Highways be the minimum necessary for identification. The design, materials, color, and location of the signs shall blend with the environment, utilizing natural materials where possible.
	LU 13.8 Avoid the blocking of public views by solid walls.
The following policies apply to properties designated as Open Space-Rural on the area plan land use maps.	LU 20.1 Require that structures be designed to maintain the environmental character in which they are located.
	LU 20.2 Require that development be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance.
	LU 20.3 Require that adequate and available circulation facilities, water resources, sewer facilities, and/or septic capacity exist to meet the demands of the proposed land use.
	LU 20.4 Ensure that development does not adversely impact the open space and rural character of the surrounding area.

WASTE MANAGEMENT

Applicable LORS	*Description*
Federal	
Title 42, United States Code (U.S.C.), §6901, et seq. Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al.)	The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA) et al., establishes requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The statute also addresses program administration, implementation and delegation to states, enforcement provisions, and responsibilities, as well as research, training, and grant funding provisions. RCRA Subtitle C establishes provisions for the generation, storage, treatment, and disposal of hazardous waste, including requirements addressing: • Generator record keeping practices that identify quantities of hazardous wastes generated and their disposition; • Waste labeling practices and use of appropriate containers; • Use of a manifest when transporting wastes; • Submission of periodic reports to the United States Environmental Protection Agency (U.S. EPA) or other authorized agency; and • Corrective action to remediate releases of hazardous waste and contamination associated with RCRA-regulated facilities. RCRA Subtitle D establishes provisions for the design and operation of solid waste landfills. RCRA is administered at the federal level by U.S. EPA and its 10 regional offices. The Pacific Southwest regional office (Region 9) implements U.S. EPA programs in California, Nevada, Arizona, and Hawaii.
Title 42, U.S.C., §9601, et seq. Comprehensive Environmental Response, Compensation and Liability Act	The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as *Superfund*, establishes authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment. Among other things, the statute addresses: • Reporting requirements for releases of hazardous substances; • Requirements for remedial action at closed or abandoned hazardous waste sites, and brownfields; • Liability of persons responsible for releases of hazardous substances or waste; and • Requirements for property owners/potential buyers to conduct “all appropriate inquiries” into previous ownership and uses of the property to 1) determine if hazardous substances have been or may have been released at the site, and 2) establish that the owner/buyer did not cause or contribute to the release. A Phase I Environmental Site Assessment is commonly used to satisfy CERCLA “all appropriate inquiries” requirements.
Title 40, Code of Federal Regulations (C.F.R.), Subchapter I – Solid Wastes	These regulations were established by U.S. EPA to implement the provisions of the Solid Waste Disposal Act and RCRA (described above). Among other things, the regulations establish the criteria for classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and

	requirements for management of used oil and universal wastes. • Part 257 addresses the criteria for classification of solid waste disposal facilities and practices. • Part 258 addresses the criteria for municipal solid waste landfills. • Parts 260 through 279 address management of hazardous wastes, used oil, and universal wastes (i.e., batteries, mercury-containing equipment, and lamps). U.S. EPA implements the regulations at the federal level. However, California is an RCRA-authorized state, so most of the solid and hazardous waste regulations are implemented by state agencies and authorized local agencies in lieu of U.S. EPA.
Title 49, C.F.R., Parts 172 and 173. Hazardous Materials Regulations	These regulations address the United States Department of Transportation (DOT) established standards for transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping of hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests. Section 172.205 specifically addresses use and preparation of hazardous waste manifests in accordance with Title 40, CFR, section 262.20.
Federal Clean Water Act, 33 U.S.C. § 1251 *et seq.*	The Clean Water Act controls discharge of wastewater to the surface waters of the U.S.
State	
California Health and Safety Code (Health and Safety Code), Chapter 6.5, §25100, et seq. Hazardous Waste Control Act of 1972, as amended	This California law creates the framework under which hazardous wastes must be managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards (regulations) that are equal to or, in some cases, more stringent than federal requirements. The California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) administers and implements the provisions of the law at the state level. Certified Unified Program Agencies (CUPAs) implement some elements of the law at the local level.
Title 22, California Code of Regulations (Cal. Code Regs.), Division 4.5. Environmental Health Standards for the Management of Hazardous Waste	These regulations establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA. As with the federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers; prepare manifests before transporting the waste off site; and use only permitted treatment, storage, and disposal facilities. Generator standards also include requirements for record keeping, reporting, packaging, and labeling. Additionally, while not a federal requirement, California requires that hazardous waste be transported by registered hazardous waste transporters. The standards addressed by Title 22, CAL. CODE REGS. include: • Identification and Listing of Hazardous Waste (Chapter 11, §66261.1, et seq.). • Standards Applicable to Generator of Hazardous Waste (Chapter 12, §66262.10, et seq.). • Standards Applicable to Transporters of Hazardous Waste (Chapter 13, §66263.10, et seq.).

	• Standards for Universal Waste Management (Chapter 23, §66273.1, et seq.). • Standards for the Management of Used Oil (Chapter 29, §66279.1, et seq.). • Requirements for Units and Facilities Deemed to Have a Permit by Rule (Chapter 45, §67450.1, et seq.). The Title 22 regulations are established and enforced at the state level by DTSC. Some generator and waste treatment standards are also enforced at the local level by CUPAs.
Health and Safety. Code, Chapter 6.11 §§25404 – 25404.9 Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)	The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the six environmental and emergency response programs listed below. • Aboveground Petroleum Storage Act requirements for Spill Prevention, Control, and Countermeasure (SPCC) Plans. • Hazardous Materials Release and Response Plans and Inventories (Business Plans). • California Accidental Release Prevention (CalARP) Program. • Hazardous Materials Management Plan / Hazardous Materials Inventory Statements. • Hazardous Waste Generator / Tiered Permitting Program. • Underground Storage Tank Program. The state agencies responsible for these programs set the standards for their programs while local governments implement the standards. The local agencies implementing the Unified Program are known as CUPAs. Note: The Waste Management analysis only considers application of the Hazardous Waste Generator/Tiered Permitting element of the Unified Program.
Title 27, Cal. Code Regs., Division 1, Sub-division 4, Chapter 1, §15100, et seq. Unified Hazardous Waste and Hazardous Materials Management Regulatory Program	While these regulations primarily address certification and implementation of the program by the local CUPAs, the regulations do contain specific reporting requirements for businesses. • Article 9 – Unified Program Standardized Forms and Formats (§§ 15400–15410). • Article 10 – Business Reporting to CUPAs (§§15600–15620).
Public Resources Code, Division 30, §40000, et seq. California Integrated Waste Management Act of 1989	The California Integrated Waste Management Act (CIWMA) establishes mandates and standards for management of solid waste in California. The law addresses solid waste landfill diversion requirements; establishes the preferred waste management hierarchy (source reduction first, then recycling and reuse, and treatment and disposal last); sets standards for design and construction of municipal landfills; and addresses programs for county waste management plans and local implementation of solid waste requirements.
Title 14, Cal. Code Regs., Division 7, §17200, et seq. California Integrated Waste Management Board	These regulations implement the provisions of the California Integrated Waste Management Act and set forth minimum standards for solid waste handling and disposal. The regulations include standards for solid waste management, as well as enforcement and program administration provisions. • Chapter 3 – Minimum Standards for Solid Waste Handling and Disposal. • Chapter 3.5 – Standards for Handling and Disposal of Asbestos Containing Waste. • Chapter 7 – Special Waste Standards.

	• Chapter 8 – Used Oil Recycling Program. • Chapter 8.2 – Electronic Waste Recovery and Recycling.
Health and Safety Code, Division 20, Chapter 6.5, Article 11.9, §25244.12, et seq. Hazardous Waste Source Reduction and Management Review Act of 1989	This law was enacted to expand the state's hazardous waste source reduction activities. Among other things, it establishes hazardous waste source reduction review, planning, and reporting requirements for businesses that routinely generate more than 12,000 kilograms (approximately 26,400 pounds) of hazardous waste in a designated reporting year. The review and planning elements are required to be done on a four-year cycle, with a summary progress report due to DTSC every fourth year.
Title 22, Cal. Code Regs., §67100.1 et seq. Hazardous Waste Source Reduction and Management Review	These regulations further clarify and implement the provisions of the Hazardous Waste Source Reduction and Management Review Act of 1989 (noted above). The regulations establish the specific review elements and reporting requirements to be completed by generators subject to the act.
Title 23, Cal. Code Regs., Division 3, Chapters 16 and 18	These regulations relate to hazardous material storage and petroleum UST cleanup, as well as hazardous waste generator permitting, handling, and storage. The DTSC Imperial County CUPA is responsible for local enforcement.
Local	
County of Riverside General Plan, Safety Element: Policy S 6.1	Describes the County's policies and siting criteria identified in the County of Riverside Hazardous Waste Management Plan including coordination of hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority
Riverside County Code Title 8 Chapters 8.60, 8.84, and 8.132, Health and Safety	Establishes requirements for the use, generation, storage, and disposal of hazardous and non-hazardous materials and wastes within the County.
Riverside County Code, Chapter 8.32, Ordinance No. 787, Fire	Adopted the 2007 California Fire Code.

WORKER SAFETY AND FIRE PROTECTION

Applicable LORS	*Description*
Federal	
Title 29 U.S. Code (USC) section 651 et seq (Occupational Safety and Health Act of 1970)	This act mandates safety requirements in the workplace with the purpose of "[assuring] so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651).
Title 29 Code of Federal Regulation (CFR) sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	These sections define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector.
29 CFR sections 1952.170 to 1952.175	These sections provide federal approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the federal requirements found in 29 CFR sections 1910.1 to 1910.1500.
State	
Title 8 California Code of Regulations (Cal Code Regs.) all applicable sections (Cal/OSHA regulations)	These sections require that all employers follow these regulations as they pertain to the work involved. This includes regulations pertaining to safety matters during construction, commissioning, and operations of power plants, as well as safety around electrical components, fire safety, and hazardous materials use, storage, and handling.
24 Cal Code Regs. section 3, et seq.	This section incorporates the current addition of the Uniform Building Code.
Health and Safety Code section 25500, et seq.	This section presents Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility.
Health and Safety Code sections 25500 to 25541	These sections require a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility.
Local (or locally enforced)	
Riverside County Ordinance 457	Adopts specific building, mechanical, plumbing, and electrical codes from sources such as the California Building Standards Commission with county-specific modifications.
Riverside County Ordinance 787	Adopts the 2007 edition of the California Fire Code and portions of the 2007 edition of the California Building Code with county-specific modifications.

Applicable LORS	*Description*
Riverside County Ordinance 615	Establishes requirements for the use, generation, storage and disposal of hazardous materials within the County.
Riverside County Dept. of Environmental Health, Hazardous Materials Releases	Adopts State requirements and guidelines to govern hazardous materials release response plans and inventories.
Chapter 22 of the 2007 California Fire Code	This section of the CFC addresses requirement for Motor Fuel-Dispensing Facilities and Repair Garages. It has been adopted by Riverside County and will apply to the fuel depot at the site.
NFPA 30a	This is the NFPA code for Motor Fuel Dispensing Facilities and Repair Garages (2008Edition) and is the industry standard for fuel depots.

Project Name and Docket Number: ***BLYTHE SOLAR POWER PROJECT – Docket No. 09-AFC-6***

FINAL EXHIBIT LIST

APPLICANT'S EXHIBITS

Exhibit	Witness	Brief Description	Offered	Admitted
1	All	**Application for Certification Volumes I & II**, dated August 24 2009, and docketed on August 24, 2009.	X	7/15/2010
2	Hamel Head Kingsley	**Air Quality Modeling Files**, dated August 2009, and docketed on August 31, 2009.	X	7/15/2010
3	Harron Ingram Hollenbacher Thor Kelley	**Letter from Assembly Person V. Manuel Perez (Project Support Letter for PSPP & BSPP)**, dated October 21, 2009, and docketed on October 26, 2009.	X	7/15/2010
3	Harron Ingram Larson	**Letter from Assembly Person V. Manuel Perez (Project Support Letter for PSPP & BSPP)**, dated October 21, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Hamel Head Kingsley	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010

4	Jordan Vargas	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Dracker	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Flack Corsetti	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Harron Ingram Hollenbacher Thor Kelley	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Dracker	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Flack Hagmaier Thor Harvey	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Hollenbacher Ardolino	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Paulson Balentine	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
4	Dudasko Luttrell	**Data Adequacy Supplement**, dated October 26, 2009, and docketed on October 26, 2009.	X	7/15/2010
5	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**Streamed Alteration Agreement Application**, dated November 2009, and docketed on November 25, 2009.	X	7/15/2010

5	Flack Hagmaier Thor Harvey	**Streamed Alteration Agreement Application**, dated November 2009, and docketed on November 25, 2009.	X	7/15/2010
6	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**Pre-Development Drainage Conditions Report**, dated November 25, 2009, and docketed on November 30, 2009.	X	7/15/2010
6	Flack Hagmaier Thor Harvey	**Pre-Development Drainage Conditions Report**, dated November 25, 2009, and docketed on November 30, 2009.	X	7/15/2010
7	Jordan Vargas	**New Alternative Approach to Staff Review for Cultural**, dated December 1, 2009, and docketed on December 1, 2009.	X	7/15/2010
8	Jordan Vargas	**Selection of Cultural Resources Evaluation Approach**, dated December 21, 2009, and docketed on December 22, 2009.	X	7/15/2010
9	Hamel Head Kingsley	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Dracker Luttrell	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Graham Guigliano McMillan Anguiano Harbin- Ireland	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Jordan Vargas	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010

9	Dracker	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Flack Corsetti	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Head Kinglsey	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Dracker	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Flack Hagmaier Thor Harvey	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Hollenbacher Ardolino	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Paulson Balentine	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Dudasko Luttrell	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
9	Harron Arvidson Petto Bak	**Palo Verde Solar I, LLC's Responses to CEC Data Request, Set 1 (1 through 260)**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
10	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**Application for the California Endangered Species Act Incidental Take Permit and Revised Desert Tortoise Technical Report**, dated January 2010 and docketed on January 13, 2010.	X	7/15/2010

11	Flack Hagmaier Thor Harvey	**Attachment G WSA, (Attachment G- Water Supply Assessment of Response to DR 206)**, dated January 2010 and docketed on January 18, 2010.	X	7/15/2010
12	Hamel Head Kingsley	**Palo Verde Solar I, LLC's Supplemental Responses to CEC Data Request Set 1**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
12	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Palo Verde Solar I, LLC's Supplemental Responses to CEC Data Request Set 1**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
12	Paulson Balentine	**Palo Verde Solar I, LLC's Supplemental Responses to CEC Data Request Set 1**, dated January 2010, and docketed on January 22, 2010.	X	7/15/2010
13	Hamel Head Kingsley	**Mojave Desert Air Quality Management District's Preliminary Determination of Compliance**, dated January 28, 2010 and docketed on January 29, 2010.	X	7/15/2010
14	Jordan Vargas	**Palo Verde Solar I, LLC's Data Responses to CEC Queries & Attachment DR-CR-120a & b (Cultural Resources Impact Blocks)**, dated January 2010, and docketed on January 29, 2010.	X	7/15/2010
15	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Palo Verde Solar I, LLC's Data Response to DR-BIO-58 (Post Development Drainage Conditions Report)**, dated January 29, 2010 and docketed on January 29, 2010.	X	7/15/2010
15	Flack Hagmaier Thor Harvey	**Palo Verde Solar I, LLC's Data Response to DR-BIO-58 (Post Development Drainage Conditions Report)**, dated January 29, 2010 and docketed on January 29, 2010.	X	7/15/2010

16	Graham Guigliano McMillan Anguiano Harbin- Ireland	**Report of Conversation (Between S. Sanders & J. Mace (United Army Corps of Engineers)) Regarding Status of Jurisdictional Determination**, dated January 28, 2010 and docketed on February 1, 2010.	X	7/15/2010
17	Hollenbacher Ardolino	**Palo Verde Solar I, LLC's Responses to CEC January 15, 2010 and January 20, 2010 E-mail Queries from CEC Staff, Additional Info Regarding Transmission System Engineering**, dated February 2010, and docketed on February 3, 2010.	X	7/15/2010
18	Graham Guigliano McMillan Anguiano Harbin- Ireland	**Palo Verde Solar I, LLC's Response to January 14, 2010 Workshop Query and January 29, 2010 Email Query**, dated February 2010, and docketed on February 4, 2010.	X	7/15/2010
18	Jordan Vargas	**Palo Verde Solar I, LLC's Response to January 14, 2010 Workshop Query and January 29, 2010 Email Query**, dated February 2010, and docketed on February 4, 2010.	X	7/15/2010
18	Wilson Balentine Kelly Moss Thor	**Palo Verde Solar I, LLC's Response to January 14, 2010 Workshop Query and January 29, 2010 Email Query**, dated February 2010, and docketed on February 4, 2010.	X	7/15/2010
19	Hamel Head Kingsley	**Responses to January 14, 2010 CEC Workshop Queries**, dated February 2010, and docketed on February 8, 2010.	X	7/15/2010
20	Graham Guigliano McMillan Anguiano Harbin- Ireland	**Responses to January 28, 2010 CEC Email Queries**, dated February 2010, and docketed on February 11, 2010.	X	7/15/2010

21	Flack Hagmaier Thor Harvey	**Responses to January 14, 2010 CEC Workshop Queries**, dated February 2010, and docketed on February 11, 2010.	X	7/15/2010
22	Ingram Graham	**Letter from Riverside County Planning Department (Re: Comments on AFC and NOI for BSPP & PSPP)**, dated February 16, 2010, and docketed on February 17, 2010.	X	7/15/2010
23	Hamel Head Kingsley	**Heat Transfer Fluid Emissions Conference Call Record of Conversation (Between W. Walters (Aspen) and CEC, Abengoa Solar, Inc, Abener N. America, Atmospheric Dynamics & Solutia, Inc)**, dated January 27, 2010, and docketed on February 24, 2010.	X	7/15/2010
24	Hamel Head Kingsley	**Palo Verde Solar I, LLC's Comments on the Preliminary Determination of Compliance**, dated February 26, 2010, and docketed on March 3, 2010.	X	7/15/2010
25	Wilson Balentine Kelly Moss Thor	**Riverside County Airport Land Use Commission (RCALUC) Application for Major Land Use Action Review**, dated February 2010, and docketed on March 3, 2010.	X	7/15/2010
26	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Palo Verde Solar I, LLC's Draft Biological Assessment**, dated March 2010, and docketed on March 8, 2010.	X	7/15/2010
27	Flack Hagmaier Thor Harvey	**Palo Verde Solar I, LLC's Responses to January 14, 2010 CEC Workshop Queries (Groundwater)**, dated March 2010, and docketed on March 11, 2010.	X	7/15/2010

28	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Palo Verde Solar I, LLC's Issues Statement for April 15, 2010 Status Conference**, dated April 12, 2010, and docketed on April 12, 2010.	X	7/15/2010
28	Wilson Banentine Kelly Moss Thor	**Palo Verde Solar I, LLC's Issues Statement for April 15, 2010 Status Conference**, dated April 12, 2010, and docketed on April 12, 2010.	X	7/15/2010
28	Paulson Balentine	**Palo Verde Solar I, LLC's Issues Statement for April 15, 2010 Status Conference**, dated April 12, 2010, and docketed on April 12, 2010.	X	7/15/2010
28	Flack Hagmaier Thor Harvey	**Palo Verde Solar I, LLC's Issues Statement for April 15, 2010 Status Conference**, dated April 12, 2010, and docketed on April 12, 2010.	X	7/15/2010
29	Harron Ingram Hollenbacher Thor Kelly	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Dracker Luttrell	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Hamel Head Kingsley	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010

29	Graham Guigliano McMillan Anguiano Harbin- Ireland	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Jordan Vargas	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Dudasko Luttrell	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Ingram Graham	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Goodson Petto Luttrell	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Flack Hagmaier Thor Harvey	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Wilson Balentine Kelly Moss Thor	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Paulson Balentine	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Dudasko Luttrell	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010

29	Harron Arvidson Petto Bak	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
29	Dracker	**Palo Verde Solar I, LLC's Initial Comments on the SA, DEIS**, dated April 19, 2010, and docketed on April 19, 2010.	X	7/15/2010
30	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Palo Verde Solar I, LLC's Biological Resources Spring Survey Protocols**, dated April 2010, and docketed on June 11, 2010.	X	7/15/2010
31	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Comments on the Draft Desert Tortoise Relocation/ Translocation Plan**, dated April 15, 2010, and docketed on April 29, 2010.	X	7/15/2010
32	Wilson Balentine Kelly Moss Thor	**County of Riverside County Airport Land Use Commission May 2010 Staff Report**, dated May 2010, and docketed on May 10, 2010.	X	7/15/2010
33	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Palo Verde Solar I, LLC's Draft Summary Preliminary Spring 2010 Survey Results for Desert Tortoise, Rare Plants**, and Jurisdictional Waters, dated May 7, 2010, and docketed on May 11, 2010.	X	7/15/2010
34	Harron Arvidson Petto Bak	**Responses to Questions from CEC April 28, 29 and May 7 Workshops Re: Worker Safety, Hazardous Materials, and Water Resources**, dated May 13, 2010, and docketed May 13, 2010.	X	7/15/2010

34	Dudasko Luttrell	**Responses to Questions from CEC April 28, 29 and May 7 Workshops Re: Worker Safety, Hazardous Materials, and Water Resources**, dated May 13, 2010, and docketed May 13, 2010.	X	7/15/2010
34	Flack Hagmaier Thor Harvey	**Responses to Questions from CEC April 28, 29 and May 7 Workshops Re: Worker Safety, Hazardous Materials, and Water Resources**, dated May 13, 2010, and docketed May 13, 2010.	X	7/15/2010
35	Harron Arvidson Petto Bak	**Responses to Questions from CEC April 28, 29 and May 7 Workshops Re: Worker Safety & Hazardous Materials**, dated May 14, 2010, and docketed on May 14, 2010.	X	7/15/2010
35	Dudasko Luttrell	**Responses to Questions from CEC April 28, 29 and May 7 Workshops Re: Worker Safety & Hazardous Materials**, dated May 14, 2010, and docketed on May 14, 2010.	X	7/15/2010
36	Harron Arvidson Petto Bak	**Responses to April 28, 29 & May 7 Workshops Re: Operation Phase Fire Protection**, dated May 14, 2010, and docketed on May 14, 2010.	X	7/15/2010
36	Dudasko Luttrell	**Responses to April 28, 29 & May 7 Workshops Re: Operation Phase Fire Protection**, dated May 14, 2010, and docketed on May 14, 2010.	X	7/15/2010
37	Harron Arvidson Petto Bak	**Responses to April 28, 29 & May 7 Workshops Re: HTF Fluid (Burn Rate Discussion)**, dated May 14, 2010, and docketed on May 14, 2010.	X	7/15/2010
37	Dudasko Luttrell	**Responses to April 28, 29 & May 7 Workshops Re: HTF Fluid (Burn Rate Discussion)**, dated May 14, 2010, and docketed on May 14, 2010.	X	7/15/2010
38	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**Response to CEC April 28, 29 and May 7 Workshop Queries Re: Southern CA Edison Colorado River Substation Project Description**, dated April 15, 2010, and docketed on May 17, 2010.	X	7/15/2010

38	Hollenbacher Ardolino	**Response to CEC April 28, 29 and May 7 Workshop Queries Re: Southern CA Edison Colorado River Substation Project Description**, dated April 15, 2010, and docketed on May 17, 2010.	X	7/15/2010
38	Dracker	**Response to CEC April 28, 29 and May 7 Workshop Queries Re: Southern CA Edison Colorado River Substation Project Description**, dated April 15, 2010, and docketed on May 17, 2010.	X	7/15/2010
39	Flack Hagmaier Thor Harvey	**Application/ Report of Waste Discharge --Proposed Evaporation Ponds**, dated May 14, 2010, and docketed on May 17, 2010.	X	7/15/2010
39	Harron Ingram Hollenbacher Thor Kelly	**Application/ Report of Waste Discharge --Proposed Evaporation Ponds**, dated May 14, 2010, and docketed on May 17, 2010.	X	7/15/2010
40	Flack Hagmaier Thor Harvey	**Assessment of Impacts from a Revision in Well Configuration for Proposed Water Supply**, dated May 10, 2010, and docketed on May 17, 2010.	X	7/15/2010
41	Hamel Head Kingsley	**Mojave Desert Air Quality Management District's Revised Preliminary Determination of Compliance,** dated May 25, 2010, and docketed on May 26, 2010.	X	7/15/2010
42	Harron Ingram Hollenbacher Thor Kelly	**Notification of Revision Memorandum—Blythe Solar Power Project Gen-Tie**, dated May 28, 2010 and docketed on May 28, 2010.	X	7/15/2010
42	Hollenbacher Ardolino	**Notification of Revision Memorandum—Blythe Solar Power Project Gen-Tie**, dated May 28, 2010 and docketed on May 28, 2010.	X	7/15/2010
43	Graham Guigliano McMillan Anguiano Harbin-Ireland	**Responses to CEC April 28, 29 and May 7, 2010 CEC Workshop Queries Re: Biological Resources (Preliminary Spring 2010 Biological Survey Results)**, dated May 14, 2010, and docketed on May 20, 2010.	X	7/15/2010

44	Hamel Head Kingsley	**Revised Health Risk Assessment for the Preliminary Determination of Compliance**, dated May 2010, and docketed on May 20, 2010.	X	7/15/2010
44	Head Kingsley	**Revised Health Risk Assessment for the Preliminary Determination of Compliance**, dated May 2010, and docketed on May 20, 2010.	X	7/15/2010
45	Ingram Graham	**Land Use Consistency Letters**, dated June 11, 2010, and docketed on June 11, 2010.	X	7/15/2010
46	Graham Guiguliano McMillan Anguiano Harbin-Ireland	**Colorado River Substation Biological Resources Survey Results and Impact Calculations**, dated June 14, 2010, and docketed on June 14, 2010.	X	7/15/2010
47	Graham Guiguliano McMillan Anguiano Harbin-Ireland	**Biological Resources 2010 Surveys Data,** dated June 14, 2010, and docketed on June 14, 2010.	X	7/15/2010
48	Wilson Balentine Kelly Moss Thor	**Responses to RCALUC's March 22, 2010 Comments Re: RCALUC Application, April 13, 2010 Email Correspondence, and May 13, 2010 Meeting Comments**, dated May 2010, and docketed on June 15, 2010.	X	7/15/2010
49	Wilson Balentine Kelly Moss Thor	**Response to RCALUC's June 10, 2010 Request Re: Additional Graphics Depicting GenTie Clearance from 3-Degree Glide Slope for Runway 08,** dated June 15, 2010 and docketed on June 15, 2010.	X	7/15/2010
50	Harron Ingram Hollenbacher Thor Kelley	**Blythe Solar Power Project Utility Corridors, Preliminary**, dated June 16, 2010, and docketed on June 15, 2010.	X	7/15/2010

51	Wilson Balentine Kelly Moss Thor	**Public Letters to the ALUC Re: BSPP,** dated May 2010 and June 2010, and docketed on June 15, 2010.	X	7/15/2010
52	All	**PVSI, LLCs Opening Testimony Package,** dated June 11, 2010, and docketed on June 11, 2010.	X	7/16/2010
53	All	**PVSI, LLCs Rebuttal Testimony Package,** dated June 16, 2010, and docketed on June 16, 2010.	X	7/16/2010
54	Wilson Balentine Kelly Moss Thor	**Computational Fluid Dynamics Modeling of an Air Cooled Condenser in a Convectively Unstable Boundary Layer**, dated June 16, 2010, and docketed on June 16, 2010.	X	7/16/2010
55	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**Western Burrowing Owl Technical Report**, dated June 16, 2010, and docketed on June 16, 2010.	X	7/16/2010
56	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**BSPP Biological Resources Technical Report**, dated June 16, 2010, and docketed on June 16, 2010.	X	7/16/2010
57	Hamel Head Kingsley	**HTF Fugitive Component Emission Factor Determination**, dated June 16, 2010, and docketed on June 16, 2010.	X	7/16/2010

58	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**BSPP Golden Eagle Survey Results**, dated June 16, 2010, and docketed on June 16, 2010.	X	7/16/2010
59	Wilson Balentine Kelly Moss Thor	**Letter from D. Moss to H. Balentine Re: GenTie Location at Blythe Airport,** dated June 15, 2010, and docketed on June 16, 2010.	X	7/16/2010
60	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**Response to Blythe Follow-Up Items –** Bio Resources; dated June 2010 and docketed on June 28, 2010.	X	7/16/2010
61	Harron Ingram Larson	**Palo Verde Solar I, LLC's Rebuttal Testimony;** Socioeconomics, dated July 9, 2010 and docketed July 9, 2010.	X	7/16/2010
62	Wilson Balentine Kelly Moss Thor	**Riverside County Airport Land Use Commission's** Evaluation of areas of Concern for BSPP, dated July 14, 2010.	X	7/16/2010
63	Graham Guiguliano McMillan Anguiano Harbin- Ireland	**Palo Verde Solar I, LLC's Proposed Phased Construction and Mitigation,** dated July 6, 2010 and docketed July 15, 2010.	X	7/16/2010

STAFF EXHIBIT LIST

Exhibit	Witness	Brief Description	Offered	Admitted
200	Staff	Revised Staff Assessment.	X	7/15/2010
201	Staff	Energy Commission Staff's Pre-Hearing Conference Statement and Rebuttal Testimony.	X	7/15/2010
202	Staff	Supplemental Staff Assessment.	X	7/15/2010
203	Staff	Part 2 of the RSA, which includes the Socioeconomics and Cultural Resources testimony.	X	7/15/2010
204	Carolyn Chainey-Davis	Special Status Plant Management – BLM Handbook 6840-1.	X	7/15/2010
205	Carolyn Chainey-Davis	Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species.	X	7/15/2010
206	Carolyn Chainey-Davis	Nature Serve Conservation Status Assessments; Factors for Assessing Extinction Risk.	X	7/15/2010
207	Staff	Supplemental Staff Assessment Part 2	X	7/15/2010
208	Greenberg	Declaration of Alan Greenberg for the Blythe Airport Risk Assessment.	X	7/15/2010
209	Staff	Final Determination of Compliance. Sponsored by Alan DeSalvio.	X	7/15/2010
210	Staff	Soil and Water Conditions of Certification.	X	7/16/2010
211	Staff	Cultural Resources Conditions of Certification.	X	7/16/2010
212	Staff	Biological Resources Conditions of Certification. Sponsored by Susan Sanders.	X	7/16/2010
213	Staff	Paper on Raven Predator on the tortoise. Sponsored by Susan Sanders.	X	7/16/2010
214	Staff	Revised Worker Safety Condition of Certification **WORKER SAFETY-7**	X	7/16/2010

215	Staff	Revised Traffic and Transportation Conditions of Certification **TRAN-9** and **TRAN-10.**	X	7/16/2010
216	Staff	Declaration of Susan Sanders.	X	7/16/2010

CALIFORNIA UNIONS FOR RELIABLE ENERGY (CURE)

Exhibit	Witness	Brief Description	X	7/16/2010
300	Bleich	Opening Testimony of Vernon C. Bleich	X	7/16/2010
301	Bleich	Bleich C.V.	X	7/16/2010
301-A	Bleich	Rebuttal Testimony of Vernon C. Bleich	X	7/16/2010
302	Cashen	Opening Testimony of Scott Cashen	X	7/16/2010
303	Cashen	Cashen C.V.	X	7/16/2010
304	Cashen	Documented Occurrences of Gila Woodpeckers from California Natural Diversity Database. 2009. Rarefind [computer program]. Version 3.1.0. Mar. 2, 2010, Sacramento CLA): Wildlife Habitat Data Analysis Branch. California Department of Fish and Game	X	7/16/2010
305	Cashen	Current (2009) Range of Gila Woodpecker in California from Cal PIF (California partners in Flight). 2009. Version 1.0. the Desert Bird Conservation Plan: A strategy for Protecting and Managing Desert Habitats and Associated Birds in California. California. Partners in Flight.	X	7/16/2010
306	Cashen	Memo to Craig Hoffman from Heather Blair (2/5/10) Re Abengoa Mojave Solar Project – time sensitive issues and informational needs	X	7/16/2010
306-A	Cashen	Rebuttal Testimony of Scott Cashen	X	7/16/2010
307	Toure	Opening Testimony of T'Shaka Toure	X	7/16/2010
308	Toure	Toure C.V.	X	7/16/2010
308-A	Toure	Rebuttal Testimony of T'Shaka Toure	X	7/16/2010
309		U.S. EPA, Reducing Stormwater Costs Through Low Impact Development (LID) Strategies and Practices	X	7/16/2010

310		Correspondence among Lin Porter, A. Solomon and Solar Millenium (3/10/09, 5/21/09, 2/19/10, 2/22/10)	X	7/16/2010
311		Comments on the Draft Desert Tortoise Relocation/Translocation Plan for the Palen and Blythe Solar Energy Projects (submitted by Carlsbad Fish and Wildlife 4/15/10)	X	7/16/2010
312		Summary of Biological Resource Survey Studies and Methodologies Planned or Currently Being Implemented for 2010 (submitted by Solar Millennium LLC, 4/22/10)	X	7/16/2010
313		Draft Summary: Preliminary Spring 2010 Survey Results for Desert Tortoise, Rare Plants, and Jurisdictional Waters (submitted by Solar Millennium LLC 5/10/10)	X	7/16/2010
314		Solar Millennium, LLC response to questions generated at the April 28, 29, and May 7, 2010 CEC Workshops for the Blythe Solar Power Project (5/14/10)	X	7/16/2010
315		Solar Millennium Blythe Power Plant Project California Energy Commission Docket 09-AFC-5, Docket Log (as of 5/27/10)	X	7/16/2010
316		Notification of Revision Memorandum (submitted by Solar Millennium LLC, 5/28/10)	X	7/16/2010
317		Palo Verde Solar I Biological Resources Spring Survey Protocols (6/11/10)	X	7/16/2010
318	Laurain	Janet Laurain Declaration	X	7/16/2010
319		BLM Response to FOIA Request (4/12/10)	X	7/16/2010
320		John Kalish, US Dept of the Interior, letter to Apple and Doolittle, AECOM (8/5/09), authorizing cultural resources fieldwork under Cultural Resource Use Permit CA-09-22 and Fieldwork Authorization No. 66.24-09-18	X	7/16/2010
321		United Nations Declaration on the Rights of Indigenous Peoples	X	7/16/2010
322		Riverside County Airport Land Use Compatibility Plan, Chapter 1, Introduction, and Chapter 2, Countywide Policies (10/14/04)	X	7/16/2010
323		Federal Aviation Administration, US Department of Transportation, Advisory Circular No. 150/5200-33A, Hazardous Wildlife Attractants on or Near Airports (7/27/04)	X	7/16/2010

324		Steven C. Hvinden, U.S. Dept. of the Interior, memo to Holly Roberts, Bureau of Land Management re Federal Register Notice Dated November 23, 2009, Entitled Notice of Intent to Prepare Two Environmental Impact Statements/Staff Assessments for the Proposed Chevron Energy Solutions/Solar Millennium Palen and Blythe Solar Power Plants, Riverside County, CA and Possible Land Use Plan Amendments, (12/21/09).	X	7/16/2010
325	Laurain	Janet Laurain Declaration	X	7/16/2010
326		Colorado River Board of California response to CURE's PRA request (2/22/10)	X	7/16/2010
327		Agenda, Solar Millennium, LLC/Chevron Energy Solutions Blythe and Palen Projects Meeting with the Colorado River Board of California (11/23/09)	X	7/16/2010
328		Agenda, Solar Millennium LLC/Chevron Energy Solutions Blythe and Palen Solar Power Projects Teleconference Meeting with the Colorado River Board of California Agenda, (1/6/10)	X	7/16/2010
329		Solar Millennium LLC Blythe & Palen Solar Power Projects presentation to Colorado River Board of California (1/6/10)	X	7/16/2010
330		U.S. Geological Survey, Water. Resources Investigations Report, 94-4005 River, river aquifer and accounting surfaces, Blythe – Plate 15	X	7/16/2010
331		Colorado River Accounting Surface Map "Explanation" (map)	X	7/16/2010
332		Gerald R. Zimmerman, Colorado River Board letter to Alan H. Solomon, CEC, (3/22/10) requiring a Section 5 BCPA contractual entitlement	X	7/16/2010
333	Hagemann	Opening Testimony of Matt Hagemann	X	7/16/2010
334	Hagemann	Hagemann C.V.	X	7/16/2010
335	Laurain	Janet Laurain Declaration	X	7/16/2010
336		Email to Janet M. Laurain from Anna Ayala (U.S. Army Corps of Engineers) re FOIA request (5/20/10)	X	7/16/2010
337		Defense Environmental Restoration Program Formerly Used Defense Sites Findings and Determination of Eligibility Site No.	X	7/16/2010

		J09CA024500 (18 pages)		
338	Hagemann	Boundary Sketch Blythe Army Airfield	X	7/16/2010
339	Hagemann	Installation Map Blythe Army Airfield FUDS Project No. J09CA024502	X	7/16/2010
340	Hagemann	Poor Man, Blythe Army Airfield, CA FUDS Project No. J09CA024502 CTT (map)	X	7/16/2010
341	Hagemann	Jeep Range Blythe Army Airfield, CA FUDS Project No. J09CA024502 CTT (map)	X	7/16/2010
342	Hagemann	Defense Environmental Restoration Program for the Formerly Used Defense Sites Findings Ordnance and Explosives Archives Search Report for the former Nellis Small Arms Range, Las Vegas, NV, Project Number J09NV051001	X	7/16/2010
343	Laurain	Janet Laurain Declaration	X	7/16/2010
344		Department of Fish and Game letter to Janet Laurain responding to CURE's Public Records Act request (4/8/10)	X	7/16/2010
345		Email from Shelly Dayman to Tannika Engelhard re Solar Millennium – Desert Tortoise Surveys, Blythe Site (5/26/09)	X	7/16/2010
346	Hagemann	Project Location Map, FUDS and Ranges	X	7/16/2010
347	Hagemann	Reduced Acreage Alternative Map, FUDS and Ranges	X	7/16/2010
348	Hagemann	Reconfigured Alternative Map, FUDS and Ranges	X	7/16/2010
349		Military Munitions and Explosives of Concern: A Handbook for Federal Land Managers, with Emphasis on Unexploded Ordnance (BLM Handbook 2/06)	X	7/16/2010

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION
FOR THE *BLYTHE SOLAR*
POWER PLANT PROJECT

Docket No. 09-AFC-6

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DECLARATION OF SERVICE

I, _____, declare that on _____, 2010, I served and filed copies of the attached _____, dated _____, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[http://www.energy.ca.gov/sitingcases/solar_millennium_blythe]

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

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Attn: Docket No. 09-AFC-6
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

_____