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# BLYTHE SOLAR POWER PROJECT AMENDMENT

## Commission Decision



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

January 2014  
CEC-800-2013-002-CMF

DOCKET NUMBER 09-AFC-06C

# **CALIFORNIA ENERGY COMMISSION**

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[http://www.energy.ca.gov/sitingcases/blythe\\_solar/index.html](http://www.energy.ca.gov/sitingcases/blythe_solar/index.html)

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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
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***BLYTHE SOLAR POWER  
PROJECT AMENDMENT***

**Docket No. 09-AFC-06C**

**Order No. 14-0115-2**

**COMMISSION ADOPTION ORDER**

This Commission Order adopts the Presiding Member's Proposed Decision (PMPD), the Supplemental Environmental Review Documentation, the committee recommendations set forth therein and the revised Errata for the Petition to Amend the Blythe Solar Power Project (BSPP). The Commission Decision consists of the PMPD and Supplemental Environmental Review Documentation docketed December 13, 2013 and the revised Errata docketed January 15, 2014. The Commission Decision is based upon the evidentiary record of these proceedings and takes into consideration the comments received prior to and at the January 15, 2014 Business Meeting. The Commission Decision contains a summary of the proceedings, the evidence presented, and the rationale for the findings reached and conditions imposed.

This Order incorporates by reference the text and evidence referred to in the PMPD, the Supplemental Environmental Review Documentation, the committee recommendations, the Conditions of Certification, the Compliance Verifications, the Appendices contained in the Supplemental Environmental Review Documentation and the revised Errata. The requirements contained in the Commission Decision ensure that the proposed facility will be designed, sited, and operated in a manner to protect environmental quality, to assure public health and safety, and to operate in a safe and reliable manner.

**FINDINGS**

The Commission hereby adopts the following findings in addition to those contained in the Commission Decision:

1. The Amended BSPP, like the approved project, would benefit the local and regional study areas in terms of an increase in local expenditures and payrolls during construction and operation of the facility, as well as a possible benefit to public finance and local economies through taxation. These activities will provide a degree of economic benefits to the local area.

2. The Conditions of Certification contained in the Commission Decision, if implemented by the project owner, ensure that the project will be designed, sited, and operated in conformity with applicable local, regional, state, and federal laws, ordinances, regulations, and standards, including applicable public health and safety standards, and air and water quality standards.
3. Implementation of the Conditions of Certification contained in the Commission Decision will ensure protection of environmental quality and assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative environmental impacts except for those described in the Override Findings section of the Commission Decision.
4. Changes or alterations have been incorporated into the amended project which mitigate or lessen the impacts of the approved project and will be beneficial to the public.
5. There has been a substantial change in circumstances since the 2010 Commission Decision for the BSPP which justifies the changes to the BSPP. Since we issued the original Decision in 2010, the cost and economic viability of PV technology has changed markedly. The cost of PV has continued to fall, and its efficiency has continued to rise. In addition, the parent company of PVS1, the original applicant, Solar Millennium AG, filed insolvency proceedings in Germany in 2010, after issuance of the Decision. Thus, its HeliOTrough solar thermal technology is no longer available. This is information which was not known or could not have been determined through the exercise of reasonable diligence prior to the issuance of that Decision.
6. The amended BSPP is required for public convenience and necessity. There are not more prudent and feasible means of achieving the public convenience and necessity.
7. The amended BSPP's benefits outweigh the significant environmental impacts identified in the Commission Decision.
8. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the facility and may be reasonably expected to ensure public health and safety.
9. No feasible alternatives to the project would reduce or eliminate any significant environmental impacts of the project.
10. The evidence does not establish the existence of any environmentally superior alternative site.

11. An environmental justice screening analysis was conducted and the project, as mitigated, will not have a disproportionate impact on low-income or minority populations.
12. The Commission Decision contains a discussion of the public benefits of the project as required by Public Resources Code section 25523(h).
13. The Commission Decision contains measures to ensure that the planned, temporary, or unexpected closure of the project will occur in conformance with applicable laws, ordinances, regulations, and standards.
14. The proceedings leading to the Commission Decision have been conducted in conformity with the applicable provisions of Commission regulations governing the consideration of an amendment to an approved Application for Certification and thereby meet the requirements of Public Resources Code sections 21000 et seq. and 25500 et seq.

## **ORDER**

Therefore, the Commission **ORDERS** the following:

1. The PMPD, Supplemental Environmental Review Documentation and Committee Recommendations docketed on December 13, 2013, TN 201432, and the revised Errata docketed on January 15, 2014, TN 201558, are hereby adopted as the Commission Decision and incorporated by reference into this Order.
2. The Petition to Amend the Blythe Solar Power Project as described in the Commission Decision is hereby granted and a certificate to construct and operate the project is hereby granted.
3. The approval of the Petition to Amend is subject to the timely performance of the Conditions of Certification and Compliance Verifications. The Conditions and Compliance Verifications are integrated with this Order and are not severable therefrom. While the project owner may delegate the performance of a Condition or Verification, the duty to ensure adequate performance of a Condition or Verification may not be delegated.
4. This Order is adopted, issued, effective, and final on the date this Order is docketed.
5. Reconsideration of this Order is governed by Public Resources Code, section 25530.
6. Judicial review of this Order is governed by Public Resources Code, section 25531.

7. The Commission hereby adopts the Conditions of Certification, Compliance Verifications, and associated dispute resolution procedures set forth in the Commission Decision as its mitigation monitoring program required by Public Resources Code section 25532. All Conditions take effect immediately upon adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, and permanent structure construction.
8. This Order licenses the project owner to commence construction on the project Subject to the provisions of California Code of Regulations, title 20, section 1720.3, this license expires by operation of law when the project's start-of-construction deadline passes with no construction.
9. The Executive Director of the Commission shall transmit a Notice of Decision and appropriate accompanying documents, as provided by Public Resources Code section 25537, and California Code of Regulations, title 20, section 1768.
10. Pursuant to Public Resources Code section 25523(d)(1), the Executive Director of the Commission shall notify the appropriate agencies of the Commission's adoption of findings pursuant to Public Resources Code section 25525.
11. The Hearing Office shall incorporate the Supplemental Environmental Review Documentation and the Errata into a single document. Publication of that compilation shall not affect the adoption, effective, issuance, or final dates of this Order established in paragraph 4, above.

## CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of an Order duly and regularly adopted at a meeting of the California Energy Commission held on January 15, 2014.

AYE: Weisenmiller, Douglas, McAllister, Hochschild, Scott

NAY: 0

ABSENT: 0

ABSTAIN: 0

Dated: January 15, 2014, at Sacramento, California.

***Original Signed By:***

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Harriet Kallemeyn  
Secretariat  
California Energy Commission



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APPENDIX A: EXHIBIT LIST  
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## INTRODUCTION

### A. SUMMARY OF THE COMMISSION DECISION

This Commission Decision contains the Supplemental Environmental Review Documentation required by section 25500.1 of the Warren-Alquist Act regarding the Petition for Amendment (Petition) of the September 15, 2010, Commission Decision (2010 Decision) approving the Application for Certification (AFC) for the Blythe Solar Power Project (BSPP) and includes the findings and conclusions required by law.<sup>1</sup> We **approve** the amendment, for the reasons and subject to the Conditions of Certification set forth in the remainder of this document.

The original Petition was filed on June 28, 2012 by Palo Verde Solar I, LLC (Applicant or Project Owner), a wholly-owned subsidiary of STA Development, LLC. A revised Petition was filed, by NextEra Blythe Solar Energy Center, LLC, a wholly-owned subsidiary of NextEra Energy Resources, LLC after it acquired the project on April 12, 2013. This document is based exclusively on the evidentiary record established at the hearings on the petition. We have independently evaluated this evidence, evaluated the Committee's reasons supporting its recommendations, and provided references to portions of the record, which support the Commission's findings and conclusions.<sup>2</sup> Implementation of the Conditions of Certification, which follow each topic section, will ensure that the BSPP is designed, constructed, and operated in the manner necessary to protect public health and safety, provide needed electrical generation, and preserve environmental quality.

Palo Verde Solar I LLC (PVSI) the original applicant, filed an Application for Certification on August 24, 2009 (09-AFC-06) proposing to build a 1000 megawatt (MW) solar thermal electric generating facility located 8 miles west of Blythe, California, and 2 miles north of Interstate 10. That proposal was approved by the Energy Commission on September 15, 2010. PVSI's successor, the

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<sup>1</sup> The requirements for an amendment of an Energy Commission Decision are set forth in the Commission's regulations, Title 20, California Code of Regulations, section 1769. They are summarized in subsection B, below.

<sup>2</sup> References to the evidentiary record, which appear in parentheses, may include an exhibit number and/or a reference to the page number of the reporter's transcript. All transcript references are to the evidentiary hearing transcript of 11/19/13, unless otherwise noted.

Applicant, now proposes to convert the proposed facility from solar thermal to photovoltaic (PV) generation technology, with an output of 485 MW. That proposal is described in the Revised Petition to Amend, dated April 12, 2013 (Ex. 1002), which is the subject of these proceedings.

The changes to the original project proposed by the amendment are described in detail in the **PROJECT DESCRIPTION** section of this document.

During the original decision process and again in the amendment review process, Energy Commission staff (Staff) and the Applicant carried out extensive coordination with numerous local, state, and federal agencies. These included the United States Bureau of Land Management (BLM), County of Riverside, and other regulatory agencies with an interest in this project. Through these efforts, the Staff, Applicant and agencies have reached mutual agreement on all aspects of the revised proposed project and upon the necessary Conditions of Certification. Intervenor Laborers' International Union of North America (LIUNA) and Colorado River Indian Tribes (CRIT) entered evidence into the record supporting different points of view with respect to certain aspects of the proposed project. We have carefully considered that evidence as part of this supplemental environmental review.

The following sections of this document describe the changes to the originally approved project, the environmental effects of the amended project and conformance of the amended project with applicable laws, ordinances, regulations and standards (LORS).

## **B. AMENDMENT PROCESS**

The Blythe Solar Power Project and its related facilities fall within Energy Commission licensing jurisdiction. Section 25500.1 of the Public Resources Code authorizes the Energy Commission to review amendments to convert proposed solar thermal power plants, approved by the Energy Commission, and sited on federal land, to the use of photovoltaic (PV) technology. Section 25500.1 only applies to projects such as BSPP that meet certain requirements. Section 25500.1(d), requires the Commission to utilize its amendment process under Section 1769 of Title 20 of the California Code of Regulations.

For an amendment for an existing power plant over which it has regulatory oversight, the Energy Commission is the lead state agency under CEQA. The Energy Commission's certified regulatory program provides the environmental

analysis that satisfies CEQA requirements. In fulfilling this responsibility, Energy Commission staff provides an independent assessment of the amendment's engineering design, evaluates its potential effects on the environment and on public health and safety, and determines whether the project, if modified, would remain in conformance with all applicable local, state, and federal laws, ordinances, regulations and standards (LORS). Energy Commission staff also recommends any needed modifications to existing mitigation measures required by the conditions of certification in the Energy Commission Final Decision and proposes additional conditions of certification to mitigate any significant environmental effects of the proposed modifications.

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

Significantly, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally, or on a more formal level as an Intervenor with the same legal rights and duties as the project developers. Public participation is encouraged at every stage of the process.

Depending on the complexity and expected level of public interest, an amendment may be analyzed by Staff and referred directly to the Energy Commission for decision. Alternatively, as is the case in this proceeding, the amendment may be referred to a committee of two commissioners who take evidence and submit a PMPD and recommendations to the Energy Commission. In either event, the Commission must make the following findings before approving an amendment:

- That the amended project will not have significant,<sup>3</sup> unmitigated, environmental effects or that specific economic, social, or other considerations make infeasible the mitigation measures or project

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<sup>3</sup> The Commission's regulations use the term "significant adverse environmental effect." See, e.g., 20 Cal. Code of Regs., §1755. "Adverse" is redundant, however, in that by definition in the CEQA Guidelines (14 Cal. Code of Regs., § 15382.) an effect must be "adverse" in order to be "significant;" positive or beneficial effects cannot be significant. Therefore, when we use the terms "significant effect" or "significant impact" in this document, the reader may assume that those effects and impacts are adverse.

alternatives identified in the proceeding and that the benefits of the project outweigh the unavoidable significant environmental effects of the project;

- That the amended project will remain in compliance with all applicable laws, ordinances, regulations and standards or that the facility is required for the public convenience and necessity and that there are not more prudent and feasible means of achieving the public convenience and necessity;
- That the change in the project will be beneficial to the public, Applicant, or Intervenors; and
- That there has been a substantial change in circumstances since the original approval justifying the change or that the change is based on information which was not known and could not have been known with the exercise of reasonable diligence prior to the original approval.<sup>4</sup>

### **C. PROCEDURAL HISTORY**

On April 12, 2013, the Applicant filed the Revised Petition to Amend (Ex. 1002), the subject of this amendment proceeding. A Committee, consisting of Commissioners Karen Douglas and David Hochschild, was appointed by unanimous vote of the Commission at its May 8, 2013 Business Meeting. On May 15, 2013, the Committee issued a scheduling order which would result in a Final Decision Adoption Hearing before the full Commission in December, 2013.

Staff issued its Staff Assessment (SA), part A, on September 23, 2013 (Ex. 2000) and Part B on October 14, 2013. (Ex 2001.) An evidentiary hearing was conducted on November 19, 2013, at which evidence from the parties and public comment was heard by the committee.

On December 13, 2013, the Committee issued its PMPD. Public and party comments on the document were accepted during a review period ending at the close of the Energy Commission's consideration of the document on January 15, 2014. An Errata was issued on January 15, 2014.

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<sup>4</sup> Title 20, California Code of Regulations, subsections 1769(a)(3), 1755(d).

## **Response to Comments**

Public comments on the amended project were few. One, from a nearby landowner, expressed concern about the proximity of the project. Those concerns are addressed in various sections of the SA. Another comment expressed concern about potential toxicity from CdTe thin film solar panel modules. The County of Riverside submitted comments pertaining to worker safety, fire protection, land use and biological resources. The U.S. Fish and Wildlife Service submitted comments pertaining to mitigation of biological resources impacts. We have taken those comments into account in crafting the conditions of certification we recommend herein.

## **Note Regarding the Format of this Document**

The remainder of this document is organized by topic. The discussions focus on whether the amended project would increase the severity of any already significant environmental impacts or create new ones, appropriate mitigation for any such impacts, and whether the amended project will continue to comply with all applicable LORS. Applicable LORS are set forth in the Staff Assessment, Parts A and B, Exhibits 2000 and 2001, and are incorporated herein by reference. Where there are no significant changes to the findings and conclusions in the 2010 Decision, we will not repeat its analysis beyond a brief explanation of our reasons for making that determination. For the convenience of the parties and public, we will, however, include all of the conditions of certification for the amended project, whether or not they are changed from those adopted in 2010.





## I. PROJECT DESCRIPTION

### A. Location

The Blythe Solar Power Project (BSPP) would be located approximately 8 miles west of the City of Blythe and 2 miles north of the Interstate-10 freeway, on land managed by the Bureau of Land Management (BLM) in Riverside County, California. (Ex. 2000, p. 3-1.)

### B. Blythe Solar Power Project approved by the Energy Commission on September 15, 2010

The approved BSPP was to consist of four adjacent, independent units of 250-megawatt (MW) nominal capacity each for a total nominal capacity of 1,000 MW. The proposed total acreage for the site was approximately 7,043 acres of BLM-managed land, including linear facilities. The project was to utilize solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors would 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) would be brought to high temperature (750°F) as it circulated through the receiver tubes. The HTF would then be piped through a series of heat exchangers where it would release its stored heat to generate high pressure steam. The steam would then be fed to a traditional steam turbine generator where electricity would be produced. Dry-cooling technology would have been used to condense the steam. Individual components of the approved project included:

- Solar Field and Power Block #1 (northeast);
- Solar Field and Power Block #2 (northwest);
- Solar Field and Power Block #3 (southwest);
- Solar Field and Power Block #4 (southeast);
- Access road to on-site office from and upgrades to a portion of Black Rock Road;
- Warehouse/maintenance building, assembly hall, and laydown area;
- Telecommunications lines;
- Natural gas pipeline;
- Concrete batch plant;
- Fuel depot;
- On-site transmission facilities, including central internal switchyard;

- 230 kilovolt (kV), double-circuit gen-tie line interconnecting to the Colorado River Substation;
- Groundwater wells used for water supply; and
- Distribution/construction power line.

During the Energy Commission's certification process, Staff concluded that the BSPP, as originally proposed, would have significant cumulative impacts on cultural resources, and significant direct and cumulative impacts on visual resources, that could not be mitigated to less than significant levels. Additionally, Staff determined that cumulative impacts from conversion of open space could not be mitigated. Finally, Staff determined that it was uncertain whether potential impacts to vehicle and aircraft operations caused by glint and glare could be mitigated below the level of significance and so as to comply with local LORS related to airport operations. The conditions of certification assured that the project's direct, indirect, and cumulative adverse environmental impacts would be mitigated to the extent feasible. Where adequate mitigation was not feasible, overriding considerations warranted acceptance of the immitigable impacts. In the final decision it was determined that the BSPP was required for public convenience and necessity, and there were not more prudent and feasible means of achieving such public convenience and necessity. Also, the benefits of the BSPP outweighed any direct, indirect, or cumulative adverse impacts which might result from its construction or operation. The evidence of record established that no feasible site or generation technology alternatives to the project, as described during the certification proceedings, existed that would reduce or eliminate any significant environmental impacts of the mitigated project.

(Ex. 2000, pp. 3-1 – 3-3.)

### **C. Proposed Project Modifications**

The modified BSPP includes replacing the solar thermal technology completely with photovoltaic (PV) generating technology and reducing the physical size of the project. Linear access to the site would be the same as that of the approved BSPP, and the modified BSPP would continue to interconnect to the regional transmission grid via the same proposed gen-tie line to Southern California Edison's (SCE's) Colorado River Substation (CRS).

Applicant proposes to develop the BSPP in four operational phases designed to generate a total of approximately 485 MW of electricity. The first three units (phases) would generate approximately 125 MW each. The fourth unit would

generate approximately 110 MW of AC. The transmission corridor is located in the center of the site with the exact location to be determined during final design.

Applicant has not selected the specific PV modules nor has it decided on whether a single-axis tracking modular system, a fixed-tilt system, or a combination of the two systems would be installed. While both systems are similar in how they generate and distribute electricity, the orientation and technique for collection of the sun's energy are different. In this amendment, Applicant is requesting the ability to select the specific combination of PV technologies prior to construction without the need for filing another amendment. During operations, all four units would share an operations and maintenance facility, one on-site switchyard, access and maintenance roads (either dirt, gravel, or paved), perimeter fencing and other ancillary security facilities, and a 230-kV gen-tie line.

The modified BSPP would be located entirely on public land within BLM Right-of-Way Grant No. CACA-048811. The total proposed acreage for the solar plant site is approximately 4,070 acres, excluding linear facilities outside of the proposed solar plant site. This is nearly 3,000 acres less than the original approved 7,043 acres.

The primary modifications to the approved BSPP are as follows:

- The previously planned four power blocks (which each included a steam turbine, evaporation pond, auxiliary boiler, air-cooled condenser, and equipment) and structures have been eliminated.
- The Land Treatment Units for HTF have been eliminated.
- The HelioTrough energy collection systems and associated HTF piping systems have been eliminated and replaced with PV panels configured for either horizontal tracking or fixed-tilt operations.
- The substation has been replaced by a switchyard which is located near the center of the disturbance area.
- The large assembly hall has been eliminated.
- The concrete batch plant has been eliminated.
- The natural gas line has been eliminated.
- The water treatment system has been reduced in size to accommodate a reduction in water usage. Consequently, the associated waste quantities have been reduced, and the number of evaporation ponds has been reduced from eight ponds to two.

- The large drainage structures surrounding the site have been eliminated, although smaller drainage features may be required.
- The amount of mass grading has been greatly reduced.
- The footprint has been modified to allow transmission and access road corridors to accommodate the NextEra McCoy and the EDF Renewable Energy<sup>5</sup> projects, proposed for locations to the north of the BSPP.
- Water use during construction has been reduced from approximately 4,100 acre-feet (AF) to 700 to 1,200 AF.
- Water use during operations has been reduced from approximately 600 acre-feet per year (AFY) to between 30 and 40 AFY.

(Ex. 2000, pp. 3-1 – 3-4.)

**Photovoltaic Modules:** Applicant is considering the installation of both polycrystalline silicon solar cells and cadmium telluride (CdTe) solar cells. CdTe solar panels use solar cells constructed in a thin semiconductor layer (also known as a “thin film”) to absorb and convert sunlight into electricity. If thin film CdTe panels are used, NextEra Blythe Solar would ensure that the vendor offers a PV module recycling program through which any module may be returned for recycling.

**Single-Axis Tracking System:** A single-axis tracking system optimizes production by rotating the panels to follow the path of the sun throughout the day. The central axis of the tracking structure is oriented north to south and is constructed to rotate the panels east to west while limiting self-shading between rows. The system utilizes a method called back-tracking that consists of rotating the panels back toward a more horizontal position to avoid shadowing between the adjacent panels in the early morning and late afternoon hours of operation.

**Fixed-Tilt System:** A fixed-tilt racking system utilizes a metal framework structure or support table to which the modules are attached. The PV panels are mounted on the rack in a permanent fixed position tilted towards the south at approximately 30 degrees to optimize production throughout the year without any mechanical movement. A fixed-tilt system can generally follow the slope of the terrain which simplifies grading requirements. The support posts may vary in height above the ground surface to accommodate the variations in terrain. The total height of the structure with panels would be approximately 9 feet depending on the racking system configuration and tilt angle selected.

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<sup>5</sup> EDF Renewable Energy is the U.S. subsidiary of EDF Energies Nouvelles. EDF Energies Nouvelles is the renewable energy arm of the EDF group, a world-wide electricity company.

**System Foundations:** Both single-axis tracking and fixed-tilt mounting systems are supported by steel posts spaced approximately 10 feet apart. The support posts generally project 5 to 6 feet above the ground and are typically vibration driven to an approximate depth of 8 to 10 feet into the ground, depending on site geotechnical characteristics and tracking system design. Typical installations are constructed using steel piles or concrete foundations. Soil disturbance would be restricted to the pile insertion location, with temporary disturbance from the hydraulic ram machinery, which is about the size of a small tractor. Concrete foundations avoid ground penetration by withstanding the design loads from the weight of the concrete itself. Concrete requires time to cure and can be pre-cast and transported to the site or poured in place for installation. Concrete foundations reduce the ground penetration, but increase the permanent disturbance. All driven-post support structures are not considered permanent foundations, enabling complete removal when the BSPP is decommissioned.

**Site Access:** The modified project would utilize the same existing roads to reach the site as described in the Final Decision. Access to the BSPP would be via a new road (Dracker Drive) heading north from the frontage road (Black Rock Road). Dracker Drive would be accessed from a section of Black Rock Road, along I-10, from the plant access road to the Airport/Mesa Drive exit. The road would be paved from the entrance off of Black Rock Road north to the gates opening to Unit 1 and Unit 4.

**Transmission System Interconnection:** The gen-tie route remains largely unchanged from the approved project. It would proceed in a southerly direction, cross over I-10, and turn westward to the Colorado River Substation, which is currently under construction. The metering point would be located in the switchyard on the BSPP site. The gen-tie line would be owned and operated by NextEra Blythe Solar.

**Telecommunications Facilities:** The modified project switchyard would require the same new telecommunication infrastructure as the originally approved project. The telecommunication facilities would be installed to provide a protective relay circuit and a SCADA (supervisory control and data acquisition) circuit together with data and telephone services. Voice and data communications for plant operations would be installed for use during construction and operations.

**Operations and Maintenance Facility:** The modified BSPP would likely include an approximately 3,000-square-foot Operations & Maintenance (O & M) building

located near the center of the site and would be shared for services to all units. The building would provide an administration area, a work area for performing minor repairs, and a storage area for spare parts, transformer oil, and other incidental chemicals.

**Meteorological Station:** NextEra Blythe Solar would not modify its approved meteorological station.

**Anemometers:** Depending on the final design of the equipment, the modified BSPP's solar arrays may be installed with tracker anemometer towers, which measure and communicate wind speed data to the tracker controllers for solar array panel tracker positioning in the event of high winds. Each tower would measure approximately 30 feet in height, and would be installed within the arrays within the facility site.

**Fencing and Site Security:** For public safety and site security, the modified BSPP would have fencing around the site and access would be controlled via gates located at the entrances to the facility (at Units 1 and 4) consistent with the approved project. There would be a guard shack at the main facility gate during construction. A secondary access gate, similar in construction to the main gate, would be used for emergency purposes only. A fire department Knox Box or other access device and emergency contact placard would be provided at the main gate and secondary access gate to provide emergency access.

Fencing would also be installed around the modified BSPP's solar plant site perimeter, substations, and around the evaporation pond in accord with the existing conditions of certification. Some modifications would be needed in areas of storm water inflow and outflow from the solar field to allow for high-flow events. Fencing would be designed to account for all wind or other loads imposed on the fence. Tortoise fencing would be installed 1 foot below the ground surface and 2 feet above the ground surface, using a fencing type recommended by the United States Fish and Wildlife Service (USFWS) and in accord with the existing conditions of certification.

**Temporary Construction Workspace, Yards, and Staging Areas:** Temporary construction facilities for the modified BSPP would be built for materials storage, storage of equipment, for field fabrication facilities, and a construction office complex for employee work areas at the BSPP during construction, consistent with the approved project.

**Distribution/Construction Power:** The proposed SCE distribution line for the modified BSPP would provide construction power and electrical service to the O & M building, in the same manner as the approved project.

**Fire Protection:** Project-related fire-protection activities would be undertaken to limit personnel injury, property loss, and project downtime resulting from a fire. During construction of the modified BSPP, a water truck or other portable, trailer-mounted water tank would be kept on-site and available to workers for use in extinguishing small man-made fires. Fire watches would be required during hot work on-site. An Emergency Action Plan (EAP) designating responsibilities and actions to be taken in the event of a fire or other emergency during construction would be provided to BLM and local fire departments for approval before the receipt of a Notice to Proceed.

During operation of the modified BSPP, fire protection systems for the solar plant site would include a fire protection water system for protection of the O & M building, including portable fire extinguishers and possibly hydrants. The fire protection water system would be supplied from an approximately 20,000-gallon raw and fire water storage tank located on the solar plant site near the O & M area.

**Water Supply and Usage:** The BSPP Final Decision allowed the construction of several wells to produce up to 600 AFY of water for operations and up to 4,100 AF for construction of the approved project. Up to three wells are anticipated for the modified project and would be constructed in the same manner as outlined in the Final Decision.

Construction-related water use would support site preparation and grading activities for the modified project. During earthwork for the grading of access roads, foundations, equipment pads, and other components, the primary uses of water would be for compaction and dust control. Smaller quantities would be required for preparation of the concrete required for building foundations and other minor uses. Subsequent to the earthwork activities, the primary water use would be for dust suppression. Construction-related water usage is reduced from 4100 AFY to 700 – 1200 AFY.

BSPP well water quality is expected to be unsuitable for operations and maintenance use without treatment since it contains between 730 and 3,100 milligrams per liter of total dissolved solids. Consequently, Applicant is considering options for treatment of groundwater or the importation of trucked



potable water to meet the modified project's potable water requirements for operation and maintenance. Operations and maintenance water usage is reduced from 600 AFY to 30 – 40 AFY.

**Construction:** The construction of the modified project would begin once all applicable approvals and permits have been obtained. After the preconstruction surveys, construction mobilization, and site preparation are completed, construction of the BSPP and gen-tie line would begin. Work would be completed in phased stages moving across the site so that completion of one phase is closely followed by the beginning of the next. Construction of all of the phases is anticipated to take approximately 48 months from the commencement of the construction process to completion of the BSPP and gen-tie line.

**Construction Workforce Numbers:** Typical construction work schedules are expected to be between 8 and 12 hours per day, Monday through Friday, from 7:00 a.m. to 10:00 p.m. The work schedule may be modified throughout the year to account for changing weather conditions (e.g., starting the workday earlier in the summer months to avoid work during the hottest part of the day for health and safety reasons). During project construction, the workforce is expected to average approximately 341 employees over the 48-month construction period, with a peak workforce of approximately 499 employees during Months 20 through 22 of the construction period. The project construction workforce would be recruited from within Riverside County and elsewhere in the surrounding region to the extent practicable.

**Construction Equipment/Vehicles:** Most construction equipment and vehicles used on site for the modified project would be brought to the BSPP at the beginning of the construction process during construction mobilization and would remain there for the duration of the construction activities for which they were needed. Generally, the equipment and vehicles would not be used on public roads while in use for the project. In addition to construction worker commuting vehicles, construction traffic would include periodic truck deliveries of materials and supplies, recyclables, trash, and other truck shipments.

**Site Clearing, Grading, and Compaction:** Unlike the approved solar thermal troughs, the PV panels do not require placement on level, flat ground. Thus, site preparation would entail only clearing and mowing of the site with minimal overall mass grading. In select areas, the limited use of “disc and roll” and micro-grading techniques may be utilized, reflecting the results of field testing of various site preparation techniques at an off-site location by one of the PV manufacturers. Large scale grading would only be used in areas where site topography requires

smoothing for external fencelines and roads, or where grading is needed for buildings or other project structures.

**Operation and Maintenance Workforce:** Approximately 15 to 20 permanent, full-time personnel would be employed at the modified BSPP solar plant site during daytime working hours, assuming all units are operational. Temporary personnel would be employed, as needed, during seasonal periods when panel washing is required. Monthly visual inspections and annual (minimum) preventive maintenance would be performed. In accordance with United States Department of Labor, Occupational Safety and Health Administration safety regulations, at least two qualified personnel would be present during all energized electrical maintenance activities at the facility. Site security systems would be monitored regularly by on-site personnel and an off-site 24-hour Remote Operations Center.

**Automated Facility Control and Monitoring System:** The proposed modified BSPP facility control and monitoring system would have two primary components: an on-site SCADA (supervisory control and data acquisition) system and the accompanying sensor network. The on-site SCADA system would offer near real-time readings of the monitored devices, as well as control capabilities for the devices where applicable. Off-site monitoring/data trending systems would collect historical data for remote monitoring and analysis.

**Panel Washing:** PV panel washing at the modified project would be performed by seasonal maintenance crews in the fall and spring, taking approximately 20 to 40 days to complete each unit. Approximately 50,000 gallons per day (gpd) per unit would be required for this purpose. Surfactants would not be used in these procedures. The process water would be allowed to run off the modules and evaporate or percolate into the ground.

**Road Maintenance:** Paved roads at the modified BSPP would be maintained to preserve the asphalt surface from degradation. Maintenance would include seal coating the asphalt surface every 2 to 5 years to prevent decay and oxidization. Potholes or other damage would be repaired as soon as practical.

Unpaved roads at the modified project would be maintained regularly to control the flow of water on and around the road, remove obstacles, and maintain a solid surface. Maintenance would be completed by conducting regular surveys to inspect the conditions of the road surfaces; blading, grading, or compacting the road surfaces to preserve a minimally sloped and smooth planed surface; and

applying dust palliatives or aggregate base as needed to reduce dust and erosion.

**Waste and Hazardous Materials Management:** Two separate wastewater collection systems would be provided as part of the modified project: one for sanitary wastes and the other to address the water treatment system wastewater. The sanitary wastewater system would collect sanitary wastewater at the O & M building. Portable chemical toilets would be provided for workers in the solar fields. On-site water treatment would discharge minimal wastewater (up to 60 gallons per minute) to on-site evaporation ponds. The Final Decision allows for each power block to have two 4-acre evaporation ponds, for a total of eight 4-acre evaporation ponds. The modified project would reduce the number of ponds from eight to two.

Construction, operation, maintenance, and decommissioning of the modified BSPP would generate non-hazardous solid wastes typical of power generation or other industrial facilities. Solar plant-related wastes generated during all phases of the project would include oily rags, worn or broken metal and machine parts, defective or broken electrical materials, other scrap metal and plastic, insulation material, empty containers, paper, glass, and other miscellaneous solid wastes, including the typical refuse generated by workers. These materials would be disposed by means of contracted refuse collection and recycling services. Waste collection and disposal would be in accordance with applicable regulatory requirements to minimize health and safety effects.

The operation and maintenance of the project's linear facilities (e.g., the gen-tie line) would generate minimal quantities of waste.

**Facility Closure:** The principal materials incorporated into the PV arrays include glass, steel, and various semiconductor metals. Some manufacturers employ the compound cadmium telluride (CdTe) as the semiconductor material. Cadmium telluride is a stable compound consisting of cadmium (Cd) and tellurium (Te). Cd, produced primarily as a byproduct of zinc refining, is a human carcinogen as an independent element; however, when combined with Te, a byproduct of copper refining, it forms the stable, non-hazardous compound CdTe. Modules containing CdTe, may be recycled for use in new solar modules or other new products. If the modified BSPP selects panels that incorporate CdTe, it would participate in the manufacturer's recycling program.

For a temporary facility closure of the modified BSPP, where there is no release of hazardous materials, security of the facilities would be maintained on a continuous basis. The Energy Commission would be notified of a temporary closure. Other responsible agencies would also be notified as necessary and appropriate. Depending on the length of shutdown necessary, a contingency plan for the temporary cessation of operations would be implemented. The contingency plan would be conducted to ensure conformance with all applicable laws, ordinances, regulations, and standards (LORS) and the protection of public health, safety, and the environment. The plan, depending on the expected duration of the shutdown, may include the draining of all chemicals from storage tanks and other equipment and the safe shutdown of all equipment. All wastes would be disposed of according to applicable LORS.

Where the temporary closure includes damage to the facility, and there is a release or threatened release of regulated substances or other hazardous materials into the environment, procedures would be followed as set forth in a Risk Management Plan and a Hazardous Materials Business Plan, to be developed as described in the Final Decision conditions of certification. Procedures would include methods to control releases, notification of responsible authorities and the public, emergency response, and training for plant personnel in responding to and controlling releases of hazardous materials. Once the immediate problem is solved, and the regulated substance/hazardous material release is contained and cleaned up, temporary closure would proceed as described above for a closure where there is no release of hazardous materials.

When the modified BSPP is permanently closed, the closure procedure would follow a plan that would be developed. The removal of the facility from service may range from mothballing to the removal of all equipment and appurtenant facilities, depending on conditions at the time. Because the conditions that would affect the closure decision are largely unknown at this time, these conditions would be presented to the Energy Commission when more information is available and the timing for closure is more imminent.

To ensure that public health and safety and the environment are protected during closure, a closure plan would be submitted to the Energy Commission for approval prior to closure. The plan would address the following:

- Proposed closure activities for the facility and all appurtenances constructed as part of the facility;

- Conformance of the proposed closure activities to all applicable LORS and local/regional plans;
- Activities necessary to restore the site if the plan requires removal of all equipment and appurtenances;
- Closure alternatives, other than complete restoration; and
- Associated costs of the proposed closure and the source of funds to pay for the closure.

In general, the closure plan for the facility would attempt to maximize the recycling of all facility components. The facility owner would attempt to sell unused chemicals back to the suppliers or other purchasers or users. All equipment containing chemicals would be drained and shut down to safeguard public health and safety and to protect the environment. All nonhazardous wastes would be collected and disposed of in appropriate landfills or waste collection facilities. All hazardous wastes would be disposed of according to all applicable LORS. The site would be secured 24 hours per day during the closure activities. (Ex. 2000, pp. 3-4 – 3-9.)

#### **D. Findings Specific to an Amendment**

In addition to the findings necessary to approve an initial power plant license, two additional findings are required in order to approve an amendment to a license. They are 1) that the change in the project will be beneficial to the public, Applicant, or intervenors and 2) that there has been a substantial change in circumstances since the original approval justifying the change or that the change is based on information which was not known and could not have been known with the exercise of reasonable diligence prior to the original approval.

##### **1. Benefits**

Throughout this document, we describe various benefits that will accrue from the construction and operation of the BSPP using PV technology as proposed in the amendment. They include renewable generation capacity to serve the residents of California, employment opportunities for construction workers and plant operators, and overall reduction of environmental impacts due to the project's smaller size and elimination of solar thermal (heat transfer) generation technology.

## **2. Changed Information or Circumstances**

Since we issued the original Decision in 2010, the cost and economic viability of PV technology has changed markedly. The cost of PV has continued to fall, and its efficiency has continued to rise.

In addition, the parent company of PVSI, the original applicant, Solar Millennium AG, filed insolvency proceedings in Germany in 2010, after issuance of the Decision. Thus, its HeliOTrough solar thermal technology is no longer available. (Ex. 1002, p. 1-3.)

These facts and circumstances that led to the filing of the amendment changed after the project was certified.

## **FINDINGS AND CONCLUSIONS**

Based upon the evidence, we find and conclude that:

1. The change in the project will be beneficial to the public, Applicant, and intervenor by providing additional renewable generating capacity, construction and operations employment, and reduced environmental impacts compared to the approved project; and
2. There has been a substantial change in circumstances since the original approval justifying the change in that the Applicant no longer has access to Solar Millennium AG solar trough technology and PV technology has become economically viable due to decreased cost and increased efficiency.



## II. PROJECT ALTERNATIVES

Staff's witness, Jeff Juarez, testified that overall, with the exception of impacts to soil erosion, all impacts that would have been caused by the approved project would be the same or reduced if the amended project were constructed and operated. Other alternatives were analyzed in the 2010 Decision and determined not to be superior to the approved project. Thus, only the approved project was analyzed as an alternative to the proposed amended project; it was deemed the no project alternative. (Ex. 2001, pp. 6-1—6-45.)

The testimony shows that, due to the fact that the site would not be graded, storm water flows would continue in their existing, natural state. Grading for the approved project would have included diversion channels which would have protected the site from off-site flows. Thus the likelihood of on-site flooding and erosion is increased under the amended project. However it appears that this flooding and erosion would also occur if no project were built on the site and the land was left vacant. Accordingly, we do not find this to be a project-related impact. (Ex. 2001, p. 6-42.)

The evidence shows that the modified BSPP is environmentally superior to the approved BSPP.

### FINDINGS AND CONCLUSIONS

Based on the evidence, we find and conclude that:

1. The 2010 Decision and the evidentiary record contain an adequate review of alternative technologies, fuels, the no-project alternative and alternative site locations.
2. No significant environmental impacts would be avoided under the no-project alternative because the approved project is environmentally inferior to the proposed amended project.





### III. COMPLIANCE AND CLOSURE

The project's Compliance Conditions of Certification, including a Compliance Monitoring Plan (Compliance Plan), were established as required by Public Resources Code section 25532. The Compliance Plan applicable to the Blythe Solar Power Project (BSPP) provides a means for assuring that the facility is constructed, operated, and closed in compliance with public health and safety, environmental, all other applicable laws, ordinances, regulations, and standards (LORS), and the conditions adopted by the Energy Commission and specified in the Commission Decision on the Amendment, or otherwise required by law.

The evidence shows that the essential features of the Compliance Plan approved in the 2010 Decision need not be changed with respect to the amendment. Changes to the previously-approved Conditions of Certification reflect, for the most part, changes in record-keeping and communications procedures as they have evolved in the intervening years. (Exs. 1012, p. 5; 2000, pp. 7-1—7-30; 2003.)

#### COMPLIANCE CONDITIONS OF CERTIFICATION

**COM-1** Unrestricted Access. The project owner shall take all steps necessary to ensure that the CPM, responsible Energy Commission staff, and delegate agencies or consultants have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on-site to facilitate audits, surveys, inspections, and general or closure-related 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, whether such visits are by the CPM in person or through representatives from Energy Commission staff, delegate agencies, or consultants.

**COM-2** Compliance Record. The project owner shall maintain electronic copies of all project files and submittals on-site, or at an alternative site approved by the CPM, for the operational life and closure of the project. The files shall also contain at least one hard copy of:

1. the facility's Application for Certification;
2. all amendment petitions and Energy Commission orders;
3. all site-related environmental impact and survey documentation;
4. all appraisals, assessments, and studies for the project;

5. all finalized original and amended structural plans and “as-built” drawings for the entire project;
6. all citations, warnings, violations, or corrective actions applicable to the project; and,
7. the most current versions of any plans, manuals, and training documentation required by the conditions of certification or applicable LORS.

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.

**COM-3** Compliance Verification Submittals. Verification lead times associated with the start of construction or closure may require the project owner to file submittals during the AFC process, particularly if construction is planned to commence shortly after certification. The verification procedures, unlike the conditions, may be modified as necessary by the CPM.

A cover letter from the project owner or an 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, cite the appropriate condition of certification number(s), and give a brief description of the subject of the submittal. When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and the condition(s) of certification applicable.

All reports and plans required by the project’s conditions of certification shall be submitted in a searchable electronic format (.pdf, MS Word or Excel, etc.) and include standard formatting elements such as a table of contents, identifying by title and page number, each section, table, graphic, exhibit, or addendum. All report and/or plan graphics and maps shall be adequately scaled and shall include a key with descriptive labels, directional headings, a bar scale, and the most recent revision date.

The project owner is responsible for the content and delivery of all verification submittals to the CPM, whether the actions required by the verification were satisfied by the project owner or an agent of the project owner. All submittals shall be accompanied by an electronic copy on an electronic storage medium, or by e-mail, as agreed upon by the CPM. If hardcopy submittals are required, please address as follows:

Mary Dyas, Compliance Project Manager  
Blythe Solar Power Project (09-AFC-06C)  
California Energy Commission  
1516 Ninth Street (MS-2000)  
Sacramento, CA 95814

**COM-4** Pre-Construction Matrix and Tasks Prior to Start of Construction

Prior to start of construction, the project owner will submit to the CPM a compliance matrix including only those conditions that must be fulfilled before the start of construction. The matrix will be included with the project owner's first compliance submittal or prior to the first pre-construction meeting, whichever comes first, and will be submitted in a format similar to the description below.

Site mobilization and construction activities will not start until all of the following occur: submittal of the pre-construction matrix and compliance verifications pertaining to all pre-construction conditions of certification, and the CPM has issued an authorization to construct letter to the project owner. The deadlines for submitting various compliance verifications to the CPM allow sufficient staff time to review and comment on, and if necessary, allow the project owner to revise the submittal in a timely manner. These procedures help ensure that project construction proceeds according to schedule. Failure to submit required compliance documents by the specified deadlines may result in delayed authorizations to commence various stages of the project.

If the project owner anticipates site mobilization immediately following project certification, it may be necessary for the project owner to file compliance submittals prior to project certification. In these instances, compliance verifications can be submitted in advance of the required deadlines and the anticipated authorizations to start construction. The project owner must understand that submitting compliance verifications prior to these authorizations is at the owner's own risk. Any approval by Energy Commission staff prior to project certification is subject to change based upon the Commission Decision, and early staff compliance approvals do not imply that the Energy Commission will certify the project for actual construction and operation.

Construction may commence subsequent to CPM issuance of a letter authorizing the owner to proceed. The CPM may issue limited notices to proceed to allow one or more portions of construction to commence. A limited notice to proceed, if issued, will specify what activities (such as temporary/permanent tortoise fencing, wells, etc) can occur and what specific conditions must be met to commence the activities identified in the notice.

**COM-5** Compliance Matrix. The project owner shall submit a compliance matrix to the CPM with each MCR and ACR. The compliance matrix provides the CPM with the status of all conditions of certification in a spreadsheet format. The compliance matrix shall 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 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 updated language and the date the amendment was proposed or approved.

The CPM can provide a template for the compliance matrix upon request.

**COM-6** Monthly Compliance Reports and Key Events List. The first MCR is due one (1) month following the docketing of the project’s Decision, unless otherwise agreed to by the CPM. The first MCR shall include the AFC number and an initial list of dates for each of the events identified on the Key Events List. (The Key Events List form is found at the end of this Compliance Plan.)

During project pre-construction, construction, or closure, the project owner or authorized agent shall submit an electronic searchable version of the MCR within ten (10) business days after the end of each reporting month, unless otherwise specified by the CPM. MCRs shall be clearly identified for the month being reported. The searchable electronic copy may be filed on an electronic storage medium or by e-mail, subject to CPM approval. The compliance verification submittal condition provides guidance on report production standards, and the MCR 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 MCR; each of these items shall be identified in the transmittal letter, as well as the conditions they satisfy, and submitted as attachments to the MCR;
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 list of any approved changes to the conditions of certification;
7. a list of any filings submitted to, and 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 list of the month's additions to the on-site compliance file; and
10. a list of complaints, notices of violation, official warnings, and citations received during the month, a description of the actions taken to date to resolve the issues; and the status of any unresolved actions.

**COM-7** Annual Compliance Reports. After construction is complete, the project owner shall submit searchable electronic ACRs instead of MCRs. ACRs shall be completed for each year of commercial operation, may be required for a specified period after decommissioning to monitor closure compliance, as specified by the CPM, and are due each year on a date agreed to by the CPM. The searchable electronic copies may be filed on an electronic storage medium or by e-mail, subject to CPM approval. Each ACR shall include the AFC number, identify the reporting period, and 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 ACR. Each of these items shall be identified in the transmittal letter with the condition it satisfies, and submitted as attachments to the ACR;
4. a cumulative list of all post-certification changes approved by the Energy Commission or 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 list 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 list of the year's additions to the on-site compliance file;
9. an evaluation of the Site Contingency Plan, including amendments and plan updates; and
10. a list of complaints, notices of violation, official warnings, and citations received during the year, a description of how the issues were resolved, and the status of any unresolved matters.

**COM-8** Confidential Information. Any information that the project owner designates as 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 deemed confidential pursuant to the regulations will remain undisclosed, as provided in Title 20, California Code of Regulations, section 2501.

**COM-9** Annual Energy Facility Compliance Fee. Pursuant to the provisions of section 25806 (b) of the Public Resources Code, the project owner is required to pay an annually adjusted compliance fee. Current compliance fee information is available on the Energy Commission's website at [http://www.energy.ca.gov/siting/filing\\_fees.html](http://www.energy.ca.gov/siting/filing_fees.html). The project owner may also contact the CPM for the current fee information. The initial payment is due on the date the Energy Commission docket its final Decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification.

**COM-10** Amendments, Staff-Approved Project Modifications, Ownership Changes, and Verification Changes. The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769, to modify the design, operation, or performance requirements of the project or linear facilities, or to transfer ownership or operational control of the facility. The CPM will determine whether staff approval will be sufficient or whether Commission approval will be necessary. It is the project owner's responsibility to contact the CPM to determine if a proposed project change triggers the requirements of section 1769. Section 1769 details the required contents for a Petition to Amend an Energy Commission Decision. The only change that can be requested by means of a letter to the CPM is a request to change the verification method of a condition of certification.

Implementation of a project modification without first securing Energy Commission, or Energy Commission staff approval, may result in an enforcement action, including civil penalties, in accordance with section 25534 of the Public Resources Code. If the Energy Commission's rules regarding amendments are revised, the rules in effect at the time the change is requested shall apply.

**COM-11** Reporting of Complaints, Notices, and Citations. Prior to the start of construction or decommissioning, the project owner shall send a letter to property owners within one (1) 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 twenty-four (24) hours per day, it shall include automatic answering with a date and time stamp recording.

The project owner shall respond to all recorded complaints within twenty-four (24) hours or the next business day. The project site shall post the telephone number on-site and make it easily visible to passersby during construction, operation, and closure. The project owner shall provide the contact information to the CPM who will post it on the Energy Commission's web page at [http://www.energy.ca.gov/sitingcases/blythe\\_solar/](http://www.energy.ca.gov/sitingcases/blythe_solar/). The project owner shall report any disruption to the contact system or telephone number change to the CPM promptly, to allow the CPM to update the Energy Commission's facility webpage accordingly.

In addition to including all complaints, notices, and citations included with the MCRs and ACRs, within ten (10) days of receipt, the project owner shall report, and provide copies to the CPM, of all complaints, including noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations. Complaints shall be logged



and numbered. Noise complaints shall be recorded on the form provided in the Noise and Vibration Conditions of Certification. All other complaints shall be recorded on the complaint form (Attachment A) at the end of this Compliance Plan.

**COM-12** Emergency Response Site Contingency Plan. No less than sixty (60) days prior to the start of commercial operation, or other date agreed to by the CPM, the project owner shall submit for CPM review and approval, an Emergency Response Site Contingency Plan (Contingency Plan). The Contingency Plan shall evidence a facility's coordinated emergency response and recovery preparedness for a series of reasonably foreseeable emergency events. The CPM may require the updating of the Contingency Plan over the life of the facility. Contingency Plan elements include, but are not limited to:

1. a site-specific list and direct contact information for persons, agencies, and responders to be notified for an unanticipated event;
2. a detailed and labeled facility map, including all fences and gates, the windsock location (if applicable), the on- and off-site assembly areas, and the main roads and highways near the site;
3. a detailed and labeled map of population centers, sensitive receptors, and the nearest emergency response facilities;
4. a description of the on-site, first response and backup emergency alert and communication systems, site-specific emergency response protocols, and procedures for maintaining the facility's contingency response capabilities, including a detailed map of interior and exterior evacuation routes, and the planned location(s) of all permanent safety equipment;
5. an organizational chart including the name, contact information, and first aid/emergency response certification(s) and renewal date(s) for all personnel regularly on-site;
6. a brief description of reasonably foreseeable, site-specific incidents and accident sequences (on- and off-site), including response procedures and protocols and site security measures to maintain twenty-four-hour site security;
7. procedures for maintaining contingency response capabilities; and
8. the procedures and implementation sequence for the safe and secure shutdown of all non-critical equipment and removal of hazardous materials and waste (see also specific conditions of

certification for the technical areas of Public Health, Solid Waste Management, Hazardous Materials Management, and Worker Safety).

**COM-13** Incident-Reporting Requirements. Within one (1) hour, the project owner shall notify the CPM or Compliance Office Manager, by telephone and e-mail, of any incident at the power plant or appurtenant facilities that results or could result in any of the following:

1. reduction in the facility's ability to respond to dispatch (excluding forced outages caused by protective equipment or other typically encountered shutdown events);
2. health and safety impacts on the surrounding population;
3. property damage off-site;
4. response by off-site emergency response agencies;
5. serious on-site injury;
6. serious environmental damage; or
7. emergency reporting to any federal, state, or local agency.

The notice shall describe the circumstances, status, and expected duration of the incident.

If warranted, as soon as it is safe and feasible, the project owner shall implement the safe shutdown of any non-critical equipment and removal of any hazardous materials and waste that pose a threat to public health and safety and to environmental quality (also, see specific conditions of certification for the technical areas of Hazardous Materials Management and Solid Waste Management).

Within one (1) week of the incident, the project owner shall submit to the CPM a detailed incident report, which shall include, as appropriate, the following information:

1. a brief description of the incident, including its date, time, and location;
2. a description of the cause of the incident, or likely causes if it is still under investigation;
3. the location of any off-site impacts;
4. description of any resultant impacts;
5. a description of emergency response actions associated with the incident;
6. identification of responding agencies;

7. identification of emergency notifications made to ~~other~~ federal, state, and/or local agencies;
8. identification of any hazardous materials released and an estimate of the quantity released;
9. a description of any injuries, fatalities, or property damage that occurred as a result of the incident;
10. fines or violations assessed or being processed by other agencies;
11. name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event; and
12. corrective actions to prevent a recurrence of the incident.

The project owner shall maintain all incident report records for the life of the project, including closure. After the submittal of the initial report for any incident, the project owner shall submit to the CPM copies of incident reports within twenty-four (24) hours of a request.

**COM-14** Non-Operation. If the facility ceases operation temporarily, either planned or unplanned, for longer than one (1) week (or other CPM-approved date), but less than three (3) months (or other CPM-approved date), the project owner shall notify the CPM, interested agencies, and nearby property owners. Notice of planned non-operation shall be given at least two (2) weeks prior to the scheduled date. Notice of unplanned non-operation shall be provided no later than one (1) week after non-operation begins.

For any non-operation, a Repair/Restoration Plan for conducting the activities necessary to restore the facility to availability and reliable and/or improved performance shall be submitted to the CPM within one (1) week after notice of non-operation is given. If non-operation is due to an unplanned incident, temporary repairs and/or corrective actions may be undertaken before the Repair/Restoration Plan is submitted. The Repair/Restoration Plan shall include:

1. identification of operational and non-operational components of the plant;
2. a detailed description of the repair or restoration activities;
3. a proposed schedule for completing the repair or restoration activities;
4. an assessment of whether or not the proposed activities would require changing, adding, and/or deleting any conditions of certification and/or would cause noncompliance with any applicable LORS; and

5. planned activities during non-operation, including any measures to ensure continued compliance with all conditions of certification and LORS.

Written updates to the CPM for non-operational periods, until operation resumes, shall include:

1. progress relative to the schedule;
2. developments that delayed or advanced progress or that may delay or advance future progress;
3. any public, agency, or media comments or complaints; and
4. projected date for the resumption of operation.

During non-operation, all applicable conditions of certification and reporting requirements remain in effect. If, after one (1) year from the date of the project owner's last report of productive Repair/Restoration Plan work, the facility does not resume operation or does not provide a plan to resume operation, the Executive Director may assign suspended status to the facility and recommend commencement of permanent closure activities.

1. If the facility has a closure plan, the project owner shall update it and submit it for Energy Commission review and approval.
2. If the facility does not have a closure plan, the project owner shall develop one consistent with the requirements in this Compliance Plan and submit it for Energy Commission review and approval.

**COM-15** Facility Closure Planning. To ensure that a facility's eventual permanent closure and long-term maintenance do not pose a threat to public health and safety and/or to environmental quality, the project owner shall coordinate with the Energy Commission to plan and prepare for eventual permanent closure.

**A. Provisional Closure Plan and Estimate of Permanent Closure Costs**

To assure satisfactory long-term site maintenance and adequate closure for "the whole of a project," the project owner shall submit a Provisional Closure Plan and Cost Estimate for CPM review and approval within sixty (60) days after the start of commercial operation. The Provisional Closure Plan and Cost Estimate shall consider applicable final closure plan requirements, including interim and long-term, post-closure site maintenance costs, and reflect:

1. facility closure costs at a time in the facility's projected life span when the mode and scope of facility operation would make permanent closure the most expensive;
2. the use of an independent third party to carry out the permanent closure; and
3. no use of salvage value to offset closure costs.

The Provisional Closure Plan and Cost Estimate shall provide for a phased closure process and include but not be limited to:

1. comprehensive scope of work and itemized budget;
2. closure plan development costs;
3. dismantling and demolition;
4. recycling and site clean-up;
5. mitigation and monitoring direct, indirect, and cumulative impacts;
6. site remediation and/or restoration;
7. interim operation and post-closure monitoring and maintenance, including long-term equipment replacement costs; and
8. contingencies.

The project owner shall include an updated Provisional Closure Plan and Cost Estimate in every fifth-year ACR for CPM review and approval. Each updated Provisional Closure Plan and Cost Estimate shall reflect the most current regulatory standards, best management practices, and applicable LORS.

## **B. Final Closure Plan and Cost Estimate**

At least three (3) years prior to initiating a permanent facility closure, the project owner shall submit for Energy Commission review and approval, a Final Closure Plan and Cost Estimate, which includes any long-term, post-closure site maintenance and monitoring. Final Closure Plan and Cost Estimate contents include, but are not limited to:

1. a statement of specific Final Closure Plan objectives;
2. a statement of qualifications and resumes of the technical experts proposed to conduct the closure activities, with detailed descriptions of previous power plant closure experience;
3. identification of any facility-related installations not part of the Energy Commission certification, designation of who is responsible for these, and an explanation of what will be done with them after closure;

4. a comprehensive scope of work and itemized budget for permanent plant closure and long-term site maintenance activities, with a description and explanation of methods to be used, broken down by phases, including, but not limited to:
  - a. dismantling and demolition;
  - b. recycling and site clean-up;
  - c. impact mitigation and monitoring;
  - d. site remediation and/or restoration;
  - e. post-closure maintenance; and
  - f. contingencies.
5. a revised/updated Final Cost Estimate for all closure activities, by phases, including long-term, post-closure site monitoring and maintenance costs, and replacement of long-term post-closure equipment;
6. a schedule projecting all phases of closure activities for the power plant site and all appurtenances constructed as part of the Energy Commission-certified project;
7. an electronic submittal package of all relevant plans, drawings, risk assessments, and maintenance schedules and/or reports, including an above- and below-ground infrastructure inventory map and registered engineer's or delegate CBO's assessment of demolishing the facility; additionally, for any facility that permanently ceased operation prior to submitting a Final Closure Plan and Cost Estimate and for which only minimal or no maintenance has been done since, a comprehensive condition report focused on identifying potential hazards;
8. all information additionally required by the facility's conditions of certification applicable to plant closure;
9. an equipment disposition plan, including:
  - a. recycling and disposal methods for equipment and materials; and
  - b. identification and justification for any equipment and materials that will remain on-site after closure;
10. a site disposition plan, including but not limited to:
  - a. proposed rehabilitation, restoration, and/or remediation procedures, as required by the conditions of certification and applicable LORS,
  - b. long-term site maintenance activities, and
  - c. anticipated future land-use options after closure;

11. identification and assessment of all potential direct, indirect, and cumulative impacts and proposal of mitigation measures to reduce significant adverse impacts to a less-than-significant level; potential impacts to be considered shall include, but not be limited to:
  - a. traffic
  - b. noise and vibration
  - c. soil erosion
  - d. air quality degradation
  - e. solid waste
  - f. hazardous materials
  - g. waste water discharges
  - h. contaminated soil
12. identification of all current conditions of certification, LORS, federal, state, regional, and local planning efforts applicable to the facility, and proposed strategies for achieving and maintaining compliance during closure;
13. updated mailing list or listserv of all responsible agencies, potentially interested parties, and property owners within one (1) mile of the facility;
14. identification of alternatives to plant closure and assessment of the feasibility and environmental impacts of these; and
15. description of and schedule for security measures and safe shutdown of all non-critical equipment and removal of hazardous materials and waste (see conditions of certification for Public Health, Solid Waste Management, Hazardous Materials Management, and Worker Safety).

If an Energy Commission-approved Final Closure Plan and Cost Estimate is not implemented within one (1) year of its approval date, it shall be updated and re-submitted to the Commission for supplementary review and approval. If a project owner initiates but then suspends closure activities, and the suspension continues for longer than one (1) year, or subsequently abandons the facility, the Energy Commission may access the required financial assurance funds to complete the closure. The project owner remains liable for all costs of contingency planning and closure.

# KEY EVENTS LIST

**PROJECT:** \_\_\_\_\_

**DOCKET #:** \_\_\_\_\_

**COMPLIANCE PROJECT MANAGER:** \_\_\_\_\_

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
On-line Date	
<b>POWER PLANT SITE ACTIVITIES</b>	_____
Start Site Assessment/Pre-construction	
Start Site Mobilization/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	
<b>TRANSMISSION LINE ACTIVITIES</b>	_____
Start T/L Construction	
Synchronization with Grid and Interconnection	
Complete T/L Construction	
<b>FUEL SUPPLY LINE ACTIVITIES</b>	_____
Start Gas Pipeline Construction and Interconnection	
Complete Gas Pipeline Construction	
<b>WATER SUPPLY LINE ACTIVITIES</b>	_____
Start Water Supply Line Construction	
Complete Water Supply Line Construction	



<b>CONDITION NUMBER</b>	<b>SUBJECT</b>	<b>DESCRIPTION</b>
<b>COM-1</b>	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
<b>COM-2</b>	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.
<b>COM-3</b>	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.
<b>COM-4</b>	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: <ul style="list-style-type: none"> <li>• Notify property owners</li> <li>• Submit pre-construction matrix identifying conditions to be fulfilled before the start of construction</li> <li>• Completed all pre-construction conditions</li> <li>• CPM has issued a letter to the project owner authorizing construction</li> </ul>
<b>COM-5</b>	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and Annual Compliance Report, which includes the status of all Compliance Conditions of Certification.
<b>COM-6</b>	Monthly Compliance Report/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.
<b>COM-7</b>	Annual Compliance Report	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.

<b>CONDITION NUMBER</b>	<b>SUBJECT</b>	<b>DESCRIPTION</b>
<b>COM-8</b>	Confidential Information	Any information the project owner deems confidential shall be submitted to the Energy Commission's Executive Director with a request for confidentiality.
<b>COM-9</b>	Annual Energy Facility Compliance Fees	Payment of Annual Energy Facility Compliance Fee
<b>COM-10</b>	Amendments, Ownership Changes, Staff-Approved Project Modifications, and Verification Changes	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 or operational control of the facility.
<b>COM-11</b>	Reporting of Complaints, Notices, and Citations	Prior to the start of construction, the project owner must provide all property owners within a one (1) mile radius a telephone number to contact project representatives with questions, complaints or concerns. Within ten (10) days of receipt, the project owner shall report to the CPM all notices, complaints, violations, and citations.
<b>COM-12</b>	Site Contingency Planning	No less than sixty (60) days prior to the start of commercial operation the project owner must submit an on-site contingency plan to ensure public and environmental health and safety are protected while responding to an unanticipated event or emergency.
<b>COM-13</b>	Incident Reporting Requirements	The project owner shall notify the CPM within one (1) hour of an incident and submit a detailed incident report within thirty (thirty) days, maintain records of incident report, and submit public health and safety documents with employee training provisions.
<b>COM-14</b>	Non-Operation	No later than two (2) weeks prior to a facility's planned non-operation, or no later than two (2) weeks after the start of unplanned non-operation, the project owner must notify the CPM, interested agencies and nearby property owners of this status. During non-operation, the project owner must provide written updates.

<b>CONDITION NUMBER</b>	<b>SUBJECT</b>	<b>DESCRIPTION</b>
<b>COM-15</b>	Facility Closure Plans	One (1) year after initiating commercial operation, the project owner must submit a Provisional Closure Plan and Cost Estimate for permanent closure. Three (3) years prior to closing, the project owner must submit a Final Closure Plan

# ATTACHMENT A COMPLAINT REPORT and RESOLUTION FORM

Complaint Log Number: \_\_\_\_\_ Docket Number: \_\_\_\_\_

Project Name: \_\_\_\_\_

## COMPLAINANT INFORMATION

Name: _____ Phone Number: _____
Address: _____

## COMPLAINT

DATE COMPLAINT RECEIVED: _____ TIME COMPLAINT RECEIVED: _____
COMPLAINT RECEIVED BY: _____ <input type="checkbox"/> TELEPHONE <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> NO
DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS: _____
DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION: _____ _____ _____
DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? <input type="checkbox"/> YES <input type="checkbox"/> NO
IF NOT, EXPLAIN: _____ • _____

## CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED: _____
DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____
DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____
OTHER RELEVANT INFORMATION: _____ _____ _____

*"This information is certified to be correct."*

PLANT MANAGER SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

(ATTACH ADDITIONAL PAGES)



## **IV. ENGINEERING ASSESSMENT**

### **A. FACILITY DESIGN**

The written testimony of Staff's witness, Shahab Khoshmashrab, indicates that the proposed project changes will not change the findings and conclusions in the 2010 Decision. (Exs. 1012, p. 4; 2000, pp. 5.1-1 – 5.1.22.) However, changes in some of the equipment have led to changes in certain Conditions of Certification. Furthermore, since the original Conditions of Certification were adopted, the California Building Code (CBC) has been revised; references to the CBC in the Conditions should now be to the 2010 version. Those revisions have been made to the Conditions of Certification, below.

### **FINDINGS AND CONCLUSIONS**

Based upon the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable engineering LORS.
3. The Facility Design aspects of the amended project do not create significant direct or cumulative environmental effects.

We therefore conclude that with the implementation of the Conditions of Certification listed below, the BPPP is likely to be designed and constructed in conformity with applicable laws pertinent to its civil, structural, mechanical, and electrical engineering aspects.

### **CONDITIONS OF CERTIFICATION**

- GEN-1** The project owner shall design, construct, and inspect the project in accordance with the 2010 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 document.

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2010 CBSC is in effect, the 2010 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 prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.

**GEN-2** Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master 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 2**, below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

**Facility Design Table 2  
Major Structures and Equipment List**

<b>Equipment/System</b>	<b>Quantity (Plant)</b>
PV Module	6,000,000
PV Racking System <sup>6</sup>	71,500
Step-up Transformer Foundation and Connections	4
Power Conversion Station Foundation and Connections	250
Met Station Foundation and Connections	4
Circuit Breaker Foundation and Connections	29
Operation and Maintenance Facility Building Structure, Foundation and Connections	1
Raw/Fire Water Tank Structure, Foundation and Connections	1
Demineralized Water Tank Structure, Foundation and Connections	1
Potable Water Tank Structure, Foundation and Connections	1
Drainage System (including sanitary drain and waste)	1 Lot
HVAC Systems	1 Lot
Temperature Control and Ventilation Systems (including water and septic connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Switchboards, Buses and Towers for Operations	1 Lot
Electrical Cables/Duct Banks	4 Lots

**GEN-3** The project owner shall make payments to the CBO for design review, plan checks, and construction inspections, based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2010 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.

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<sup>6</sup> PV equipment quantities are based on the existing plant layouts.



**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 document.

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided 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 RE (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 approvals of the RE and other delegated engineer(s) within five days of the approval.

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

**GEN-5** Prior to the start of 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 PV plants and equipment support; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California). All transmission facilities (lines, switchyards, switching stations, and substations) are handled in the conditions of certification in the **Transmission System Engineering** section of this document.

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil 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 2010 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 2010 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 2010 CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this document.

A 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 to obtain CBO's approval.

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

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

Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" (Adobe .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 2010 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 approval from the CBO before resuming earthwork and construction in the affected area.

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

**CIVIL-3** The project owner shall perform inspections in accordance with the 2010 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 2** of condition of certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 2**, above):

1. Major project structures;
2. Major foundations, equipment supports, and anchorage; and
3. Large field-fabricated tanks.

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

The project owner shall:

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



concurrently with the structure plans, calculations, and specifications;

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

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

The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and 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 2010 CBC.

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

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

**STRUC-3** The project owner shall submit to the CBO design changes to the final plans required by the 2010 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 2010 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 2**, condition of certification **GEN-2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such

major piping or plumbing system, the project owner shall request the CBO's inspection approval of 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:

- 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 2**, condition of certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with 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 DELETED**

**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 over 240 Volts (V) (see a representative list, below), with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this document.

A. Final plant design plans shall include:

1. one-line diagrams for the 34.5 kV systems and typical one-line diagrams for all systems under 34.5 kV and over 240 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 all AC systems under 34.5 kV and over 240 V;
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**

Staff's witness, Edward Brady, in his written analysis (Ex. 2000, pp. 5.3-1 – 5.3-10), testified that the use of PV technology under the amendment would result in the project's generating approximately 0.12 MW per acre. That is comparable to other solar technologies. Staff therefore concluded that the project, as amended, would present no significant adverse impacts on fossil fuel energy resources, and that the amended project would reduce reliance on fossil fuel because, unlike the approved project, it would not use any fossil fuel for morning startup or nighttime freeze protection.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The Efficiency aspects of the amended project do not create significant direct or cumulative environmental effects.
2. The BSPP, as amended, will not cause any significant effects on energy supplies or energy resources.

No Conditions of Certification were adopted in the 2010 Decision and none are adopted in this document concerning the topic of Power Plant Efficiency.



## **C. POWER PLANT RELIABILITY**

Staff's witness, Edward Brady, in his written analysis (Ex. 2000, pp. 5.4-1 – 5.4-8), testified that the proposed changes to the BSPP would not change any of the findings or conclusions in the 2010 Decision. The fact that the project would consist of many independent panels, modules, and blocks provides inherent reliability. The evidence shows that adequate design and construction practices would provide an adequate level of reliability and the attendant availability to support a satisfactory level of reliability.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The Reliability aspects of the amended project do not create significant direct or cumulative environmental effects.
2. The BSPP would be designed, built and operated in a manner consistent with industry norms for reliable operation.
3. The project will not have a significant effect on system reliability.

No Conditions of Certification were adopted in the 2010 Decision and none are adopted in this document concerning the topic of Power Plant Reliability.





## **D. TRANSMISSION SYSTEM ENGINEERING**

The written testimony of Sudath Eridisuriya and Mark Hesters established that the configuration of the 230-kV switchyard, the single 230-kV overhead generator tie-line, and its termination at the proposed Southern California Edison 230-kV Colorado River Substation would be built in accordance with industry standards and good utility practices, and acceptable to staff as in conformance with applicable LORS. The cumulative marginal impacts to the safe and reliable operation of the transmission system due to the BSPP project, as identified in the Phase II Study, would be mitigated with implementation of the mitigation measures and conditions of certification we adopt in this section. (Exs. 1012, p. 5; 2000, pp. 5.5-1—5.5-17; 2003.)

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable engineering LORS.
3. The Transmission System Engineering aspects of the amended project do not create significant direct or cumulative environmental effects.

## 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.

<b>Table 1: Major Equipment List</b>
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, § 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 of Certification GEN-5, may be responsible for design and review of the Transmission System Engineering 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:

- a. be responsible for the electrical design of the power plant switchyard, outlet, and termination facilities; and
- b. 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 (5) days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five (5) 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 (5) 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, § 108.4, approval required; Chapter 17, § 1701.3, *Duties and Responsibilities of the Special Inspector*; Appendix, Chapter 33, § 3317.7, *Notification of Noncompliance*). The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval, with reference 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 (5) 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 (1) 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, outlet line, and termination, including a copy of the signed and stamped statement from the responsible electrical engineer verifying compliance with all applicable LORS. The project owner shall 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"<sup>7</sup> and a statement signed and sealed by the registered engineer in

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<sup>7</sup> Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

responsible charge, or other acceptable alternative verification, that the 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 ISO prior to synchronizing the facility with the California Transmission System:

- a. At least one (1) week prior to synchronizing the facility with the grid for testing, provide the California ISO a letter stating the proposed date of synchronization; and
- b. 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 (1) 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 (1) 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 nonconformance, the project owner shall inform the CPM and CBO in writing within 10 days of discovering such nonconformance 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:

1. "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 CCR,; Articles 35, 36, and 37 of the High Voltage Electric Safety Orders; applicable interconnection standards; NEC; and related industry standards.
2. 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."
3. 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 testimony of Staff's witness, Obed Odoemelam, Ph.D., indicates that the proposed 230-kV transmission line will comply with all applicable LORS and all potential environmental impacts will be reduced to less than significant levels by the construction of the lines in compliance with regulatory and industry standards. The findings and conclusions in the 2010 Decision remain unchanged by the amendments to the project. (Exs. 1012, p. 5; 2000, pp. 4.11-1 – 4.11-14; 2003.)

Staff has proposed revisions to the previously adopted Conditions of Certification to update references to the applicable standards. We find the revisions appropriate and adopt them below.

### **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable engineering LORS. The transmission line will be designed in accordance with the applicable electric and magnetic field reducing guidelines.
3. The Transmission Line Safety and Nuisance aspects of the amended project do not create significant direct or cumulative environmental effects.

### **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 design guideline for the design and construction of the 230-kV 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 five years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report.

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

**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 ASSESSMENT

### A. AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Staff witness Jacquelyn Leyva Record provided written and oral testimony and was cross-examined by counsel for intervenor LIUNA. Her testimony shows that the modified BSPP project would not have the potential to exceed PSD emission levels during operation. The facility is not considered a major stationary source with potential to cause significant air quality impacts. However, without adequate fugitive dust mitigation, the modified BSPP would have the potential to exceed the PSD emission levels for PM10 during construction, and could cause potential localized exceedances of the PM10 NAAQS during construction. Conditions of Certification **AQ-SC1** through **AQ-SC4** would adequately mitigate these potential impacts to less than significant levels. (Exs. 2000, pp. 4.1-1—4.1-30; 4.1-58—4.1-75; 2003; 2005.)

If left unmitigated, the modified project's construction activities would likely contribute to significant adverse PM10 and ozone impacts. **AQ-SC1** to **AQ-SC5** would mitigate these potential impacts. (Ex. 2000, pp. 4.1-19—4.1-20.)

The proposed project's operation would not cause new violations of any NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>2.5</sub> or CO ambient air quality standards. Therefore, the Modified BSPP project-direct operational NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>2.5</sub> and CO emission impacts are not significant. (Ex. 2000, pp. 4.1-21—4.1-23.)

The modified project's direct and indirect, or secondary emissions contribution to existing violations of the ozone and PM10 ambient air quality standards are likely significant if unmitigated. **AQ-SC6** would mitigate the onsite maintenance vehicle emissions and **AQ-SC7** would mitigate the operating fugitive dust emissions to ensure that the potential ozone and PM10 impacts are mitigated to less than significant over the life of the project. (Ex. 2000, p. 4.1-22.)

The modified project will not be required to submit an application for a Determination of Compliance with the Mohave Desert Air Quality Management District (MDAQMD) because it will not have any permanent emission sources that would require permits under MDAQMD rules. Accordingly, Conditions of Certification **AQ-1** through **AQ-64** from the approved project are deleted for the amended project. (Ex. 2000, pp. 4.1-28, 4.1-38.)

While BSPP would have some Greenhouse Gas (GHG) emissions, the contribution of the modified BSPP to the system build-out of renewable resources to meet the goals of the Renewable Portfolio Standard (RPS) in California would result in a net cumulative reduction of energy generation and GHG emissions from new and existing fossil-fired electricity resources. (Ex. 2000, p. 4.1-58.)

The modified project, as a renewable energy generation facility, is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 (Title 20, Greenhouse Gases Emission Performance Standard, Section 2900 et. seq.). The project is not subject to the requirements of SB 1368 (Greenhouse Gases Emission Performance Standard; Cal. Code Reg., tit. 20, § 2900 et. Seq.) and the Emission Performance Standard; however, it would nevertheless meet the Emission Performance Standard. (Ex. 2000, p. 4.1-59.)

Intervenor LIUNA offered written comment from Petra Pless, D. Env., concerning the modified project's air quality impacts. These comments questioned certain data relied upon by commission staff. LIUNA's counsel, at the evidentiary hearing, questioned staff's air quality witness, Jacquelyn Leyva Record, concerning the staff findings. (R/T 11/19/13 169:19—179:4.) We have considered these comments and the testimony in the record and conclude that staff's findings are supported by the evidence.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The air quality aspects of the amended project do not create significant direct or cumulative environmental effects.

## CONDITIONS OF CERTIFICATION

### AIR QUALITY

**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 (NO<sub>x</sub>) 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 AQCM 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 AQCM 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 panel 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.



## **B. PUBLIC HEALTH**

Staff's witness, Hwei-An Chu, Ph.D., testified that construction-related emissions for the amended project are substantially reduced from the approved project for the following reasons:

- The project footprint is reduced from 6,831 acres to 4,070 acres;
- The length of the time needed for construction is decreased from 69 months to up to 48 months;
- Since PV panels do not require a nearly flat surface, substantially less grading of the project footprint is planned;
- The cut and fill amount is reduced from approximately 8.3 million cubic yards to approximately 0.9 million cubic yards;
- The project will not utilize an on-site concrete batch plant or fuel depot (diesel fuel will be obtained from fueling trucks brought on-site and gasoline will be obtained from a nearby gasoline station in Blythe); and
- A natural gas pipeline will not be constructed.

(Ex. 2000, p. 4.7-13.)

In addition, staff's testimony indicates that changing from the approved solar trough system to PV would likely reduce the possibility of incidence of Valley Fever, usually associated with agricultural and construction dust. While Valley Fever has not been shown to be a health problem in connection with construction of other solar power projects in the area, the PV project would require far less grading than the approved project and thus would reduce disturbance of the topsoil layer and the resultant dust. (Exs. 1012, p. 7; 2000, pp. 4.7-16; 2005.)

Operations-related impacts would also be "dramatically" reduced from the approved project because:

- Heat transfer fluid (HTF) will no longer be used, so the extensive piping throughout the solar field and the ullage systems will not be installed;
- The auxiliary boilers which burn natural gas and are used for freeze protection of the HTF and cold startup of the steam generators will no longer be needed;
- Emergency generators and fire water pump engines which burn diesel fuel are no longer planned in the power block area; and

- PV panels require much less frequent washing (e.g., at most quarterly) rather than the intensive weekly mirror washing program. (Ex. 2000, p. 4.7-17.)

## **FINDINGS AND CONCLUSIONS**

Based upon the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The Public Health aspects of the proposed project do not create significant direct or cumulative environmental effects.

## **CONDITIONS OF CERTIFICATION**

The 2010 Decision included one condition under this topic, pertaining to controlling bacterial growth in the cooling towers. As amended the project no longer has cooling towers; that condition is therefore eliminated.

## C. HAZARDOUS MATERIALS MANAGEMENT

Staff's witness, Dr. Alvin J. Greenberg, testified that the construction and operation of a photovoltaic solar power plant such as the proposed modified BSPP requires smaller quantities of hazardous materials, and uses materials that are less dangerous to the public than a natural-gas fired power plant or a solar thermal plant using heat transfer fluid. (Exs. 1012, p. 11; 2000, pp. 4.4-1—4.4.14.) Accordingly, we find that the proposed modified project's impacts with respect to hazardous materials management are no greater than, and in most cases lower than, the approved project.

## FINDINGS AND CONCLUSIONS

Based upon the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The amended Conditions of Certification set forth below are appropriate and will ensure that the project is designed, constructed and operated both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Hazardous Materials Management aspects of the proposed project do not create significant direct or cumulative environmental effects.

## 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), and a Spill Prevention, Control, and Countermeasure Plan (SPCC) 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 DELETED**

**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 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. If required by law, 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 O & M Building with cameras able to pan, tilt, and zoom, have low-light capability, and are able to view the outside entrance to the O & M Building, and the front gate.

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 operations-related 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**

Material	CAS No.	Application	Hazardous Characteristics	Maximum Quantity On Site	CERCLA SARA RQ <sup>a</sup>
Acetylene	74-86-2	Welding gas	Health: moderate toxicity Physical: combustible, flammable	600 cubic feet total	10,000 pounds
Activated Carbon	7440-44-0	Control of VOCs from HTF expansion tank	Health: non-toxic (when unsaturated), low to moderate toxicity when saturated, depending on the absorbed material Physical: combustible solid	4,000 pounds	N/A
Argon	7440-37-1	Welding gas	Health: low toxicity Physical: non-flammable gas	600 cubic feet	N/A
Sodium Hypochlorite 12.5%	7778-54-3	Water treatment	Health: moderate toxicity Physical: corrosive, irritant	Minimal on-site storage for water treatment, not expected to exceed 50 pounds	
Carbon Dioxide	124-38-9		Health: low toxicity Physical: nonflammable gas	15 tons	N/A
Diesel Fuel	68476-34-6		Health: low toxicity Physical: combustible liquid	3600 gallons	N/A
Herbicides: Roundup® Triclopyr Glyphosate			Health: low toxicity Physical: irritant	No on-site storage, brought on site by licensed contractor, used immediately	N/A
Hydraulic Fluid	64741-89-5		Health: low to moderate toxicity Physical: Class IIIB combustible liquid	500 gallons in equipment, maintenance inventory of 110 gallons in 55-gallon steel drums	N/A
Lube Oil	64742-65-0		Health: low toxicity Physical: N/A	maintenance inventory of up to 550 gallons in 55-gallons steel drums	N/A
Mineral Insulating Oil	8042-47-5		Health: low toxicity Physical: N/A	250,000 gallons	N/A

Material	CAS No.	Application	Hazardous Characteristics	Maximum Quantity On Site	CERCLA SARA RQ <sup>a</sup>
Sulfur Hexafluoride		230 kV breaker insulating medium	Health:	Contained within switchyard equipment; max of 7500 pounds	N/A
Oxygen	7782-44-7	Welding gas	Health: low toxicity Physical: oxidizer	600 cubic feet	NA
Oxygen Scavenger Reagent Sodium Hydroxide (50%)	64-19-7 1310-73-2	Water treatment	Health: moderate toxicity Physical: corrosive, irritant	Minimal on-site storage for max 1000 gallons on-site in 4 x 250 gallon totes	5,000 pounds
Soil Stabilizer Active Ingredient: acrylic or vinyl acetate polymer or equivalent	N/A		Health: non-toxic Physical: N/A	No on-site storage, supplied in 55 gallon drums or 400-gallon totes, used immediately	N/A
Sulfuric Acid (29.5%)	7664-93-9	water treatment	Health: high toxicity Physical: corrosive and water reactive	max 1000 gallons on-site in 4 x 250 gallon totes	1,000 pounds
Anti-scalant		water treatment		max 500 gallons on-site in 2 x 250 gallon totes	
Corrosion inhibitor		water treatment		max 500 gallons on-site in 2 x 250 gallon totes	
Biocide Magnesium Nitrate (1-5%) 5-chloro-2-methyl-4-isothiazolin-3-one (1-5%) 2-methyl-4-isothiazolin-3-one (0.1-1%)	10377-60-3 26172-55-4 2682-20-4	water treatment		max 500 gallons on-site in 2 x 250 gallon totes	100 pounds N/A

Source: Table 2-7 of the Revised Petition to Amend (Ex. 1006), and Table 4 of the Response to Data Request Set 1 (Ex. 1009)  
a. Reportable quantities for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act.





## D. WORKER SAFETY/FIRE PROTECTION

The written testimony of Staff witness Dr. Alvin J. Greenberg (Exs. 2000 pp. 4.14-1 – 4.14-27; 2005) indicates that the changes to the BSPP proposed by the Amendment Petition do not significantly change Staff’s original analysis or conclusions that the project will not create any significant environmental effects and will comply with applicable LORS with respect to worker safety and fire protection.

Intervenor LIUNA voiced concern over the need to protect workers from exposure to fungal spores in the soil that could expose them to Valley Fever. (Ex. 5000, pp. 1, 3, 13.) Dr. Greenberg analyzed the risk of exposure to Valley Fever spores during construction, when dust is most likely to be created. Incidence of Valley Fever in the Blythe region is rare. During construction of the Genesis and Desert Sunlight Projects near Blythe, involving 5000 construction workers, no cases of Valley Fever were reported. (Exs. 2000, pp. 4.14-15—4.14-19; 2005.) Implementation of staff’s recommended conditions of certification **WORKER SAFETY-8**, **WORKER-SAFETY-10**, **AQ-SC4** and **AQ-SC7**, requiring dust control measures, use of masks, and reporting of any incidences of Valley Fever in workers at the site, will reduce the risk of exposure below the level of significance.

## FINDINGS AND CONCLUSIONS

Based upon the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The new and amended Conditions of Certification set forth below are appropriate and will ensure that the project is designed, constructed and operated both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Worker Safety and Fire Protection aspects of the proposed project do not create significant direct or cumulative environmental effects.

## 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;
- A Construction Flood Safety Plan; and
- A Construction Fire Prevention Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, the Injury and Illness Prevention Program, the Construction Flood Safety Plan, 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 that includes safety measures, engineering controls, and BMPs to address potential electrical shock hazards in the event of fire;
- Hazardous Materials Management Program;
- Fire Prevention Plan
- An Operations Flood Safety Plan; 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, an Operations Flood Safety Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The 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. Maintain the main access road and provide a plan for implementation.

Plans for the secondary access gate, the method of gate operation, and to maintain the road 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. 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 fund its share of capital costs in the amount of \$250,000 and provide an annual payment of \$100,000 to the RCFD for the support of construction, operations and maintenance commencing with the start of site mobilization and continuing annually thereafter. All annual payments after the initial payment shall be subject to an annual escalator of 2 percent on the anniversary until the final date of power plant non-operation and facility closure.

**Verification:** Not less than fifteen (15) days after the start of site mobilization, the project owner shall provide to the CPM documentation that the amount of \$250,000 has been paid to the RCFD, documentation that the first annual payment of \$100,000 has been paid to the RCFD, and shall also provide evidence in each January Monthly Compliance Report during construction and the Annual Compliance Report during operation that subsequent annual payments plus the annual escalator 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 enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with **AQ-SC4**) immediately whenever visible dust comes from or onto the site.

**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 submit to the Riverside County Fire Department (RCFD) all plans and schematic diagrams that show the details of all fire detection and suppression systems and shall pay the RCFD its usual and customary fee for the review of those plans and inspection of the site to ensure compliance with those plans. The project owner shall provide proof to the CPM that the plans have been submitted to the RCFD on a timely basis and a copy of the comments received from the RCFD.

**Verification:** In each Monthly Compliance Report during construction, the project owner shall include any and all comments received from the RCFD on fire detection and suppression systems and proof that the required plan review and inspection fees have been paid to the fire department.

During operation, the project owner shall provide proof in the Annual Compliance Report that the required inspection fees have been paid to the fire department.

**WORKER SAFETY-10** The project owner shall report to the CPM within 24 hours of any incidence of heat illness (heat stress, exhaustion, stroke, or prostration)

occurring in any worker on-site and shall report to the CPM the incidence of any confirmed case of Valley Fever in any worker on the site within 24 hours of receipt of medical diagnosis.

**Verification:** The project owner shall provide reports of heat-related and Valley Fever incidences in any worker on the site via telephone call or e-mail to the CPM within 24 hours of a heat-related occurrence or confirmed diagnosis of a case of Valley Fever, and shall include such reports in the Monthly Compliance Report during construction and the Annual Compliance Report during operation.

## VI. ENVIRONMENTAL ASSESSMENT

### A. BIOLOGICAL RESOURCES

Staff witnesses Andrea Martine, Carol Watson and Heather Blair, in their written testimony, indicate that the amended project reduces many terrestrial impacts from the approved project, by reducing onsite grading and other disturbances. The modified project would feature minimal grading, and use infrequent mowing to manage remaining vegetation. The modified BSPP would also eliminate development of the engineered channels and most of the natural onsite drainage features will be maintained. Any grading required will be designed to promote sheet flow where possible with the exception of limited mowing and placement of pylons within some drainages. (Exs. 2001, pp. 4.2-1—4.2-127; 2003; 2006.)

As with the approved project, Staff recommends avoidance, minimization, and compensatory mitigation measures to offset direct, indirect, and cumulative impacts to desert tortoise and other special-status species, and to assure compliance with state and federal laws such as the federal and state endangered species acts and regulations protecting waters of the state. With the exception of avian impacts, the evidence shows that with implementation of recommended conditions of certification all impacts to biological resources would be mitigated to less than significant levels. Impacts to avian species may be significant even after implementation of mitigation.

The evidence indicates that a number of things have changed since the 2010 decision. Among those changes are the following:

- Fall 2012 surveys were conducted when summer/fall annual plant species were in bloom and/or fruit within and in the vicinity of the BSPP. Abram's spurge was the only new species detected during surveys.
- The modified BSPP reduces the footprint by 2,908 acres and shifts the site to the east, away from the McCoy Mountains. This eliminates the approved project's impacts to corridor habitat. Therefore, Nelson's bighorn sheep has been eliminated from further consideration and staff recommends deleting Condition of Certification **BIO-21**.
- There is new information that was not available during the licensing of the original facility. This includes lessons learned during compliance monitoring of other solar projects.

Staff proposed a number of changes to the conditions of certification included in the 2010 Final Decision. At the Evidentiary Hearing, the only area of dispute between Applicant and Staff was the language of **BIO-15**, pertaining to Bird and Bat (Avian) impacts. During the Evidentiary Hearing, Applicant's and Staff's witnesses engaged in an exchange concerning many of the disputed provisions of **BIO-15**, and came to



consensus on most of them. (R/T 11-19-2013, 31:10—76:14.) The Conditions of Certification we adopt herein reflect these discussions and will reduce the amended project's biological resources impacts below the level of significance.

Applicant and Staff disagreed over whether or not impacts to protected species would occur due to collision with the solar panels and, if so, whether the Commission would need to exercise its authority to override the laws protecting such species. We have carefully reviewed the evidence in this area. In the Final Decision for the approved project, the Commission found that the likelihood of such impacts to avian species was low enough that implementation of an avian protection plan pursuant to condition of certification **BIO-15** would reduce any such impacts below the level of significance. (Ex. 2004, pp. 232-233.) The testimony of staff's witnesses with respect to the biological impacts of the amended project indicates that there is cause for increased concern over potential take of avian species due to collision based on experience at other projects, but that there is no way to predict whether such take would actually occur or, if it did occur, what species would be involved. (Ex. 2001, pp. 4.2-87—4.2-90; R/T 11-19-2013, 57:2—59:5.)

Intervenor LIUNA provided the written testimony of K. Shawn Smallwood, Ph.D. regarding biological resources impacts and appropriate mitigation. Dr. Smallwood's recommendations include requiring the establishment of a Technical Advisory Committee (TAC) to assist the biological monitor; opportunities for public involvement in the preparation and implementation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP); rearranging solar arrays to minimize impacts; compensatory mitigation in the form of monetary donations to wildlife rehabilitators; use of data collected during monitoring in planning construction of later phases of the project; and ground monitoring by scientists over a period of years to quantify impacts. (Ex. 5005.) Many of Dr. Smallwood's recommendations stem from experience gained during construction of other solar projects.

The conditions of certification we adopt herein incorporate these suggestions. For example, condition of certification **BIO-15** requires the formation of a TAC, calls for adaptive management, and includes provision for support of avian and bat research, funding efforts to address avian diseases and depredation, and contributions to the Migratory Bird Conservation Fund. However, Dr. Smallwood concedes that "the direct impact of the Blythe Solar Project can be said to be highly uncertain at this point, as also concluded by Staff." (Ex. 5005, p. 6.) Nonetheless, Dr. Smallwood's written testimony added a great deal of information concerning the likelihood of impact and how it could be quantified.

Based on the fact that the revised project is significantly smaller than the approved project, and that the evidence establishes that it is uncertain to what extent take of

protected avian species will occur as a result of the revised project, we find, as we did with respect to the approved project, that implementation of condition of certification **BIO-15**, as modified herein, will serve to reduce direct and indirect impacts to avian species below the level of significance. However, based upon experience gained from other projects in the region, notably Desert Sunlight, Genesis, Ivanpah, and Abengoa, it is reasonable to assume, and the evidence supports our finding, that each increase in the number of projects increases the likelihood of collision or other injury, to the point where there will be a cumulatively significant impact. (Exs. 2001, pp. 4.2-87—4.2-88; 5005, p. 7.) We therefore find that the amended project's impacts to avian species will be cumulatively significant, and thus must consider whether override of the amended project's cumulative impacts to biological resources is required.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Biological Resources impacts of the amended project do not create significant direct or cumulative environmental effects beyond those created by the approved project.
4. Even with implementation of the Conditions of Certification, impacts to avian species may be cumulatively significant when considered along with the impacts of other projects in the region. Accordingly, we must consider making override findings. That discussion is set forth in the Overrides section of this document.

## CONDITIONS OF CERTIFICATION

### DESIGNATED BIOLOGIST SELECTION AND QUALIFICATIONS<sup>8</sup>

**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 CDFW 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](http://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 CDFW and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the Conditions of Certification.

**Verification:** At least 60 days prior to 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 ([www.fws.gov/ventura/speciesinfo/protocols\\_guidelines](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines)) to the USFWS and the CPM for review and final approval.

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<sup>8</sup> USFWS <[www.fws.gov/ventura/speciesinfo/protocols\\_guidelines/docs/dt](http://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 Wildlife (CDFW) 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.

No site mobilization or 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(s) performs the activities described below during any pre- construction site mobilization and construction, commissioning, or other activities that may impact biological resources. 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, or project owner if no Designated Biologist is available, duties, shall include the following:

1. Advise the project owner's Construction and Operation Managers and the CPM 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 within 24 hours of any non-compliance with any biological resources Conditions of Certification, injury or mortality of a special status species, or if more than six injured or dead birds or bats are located onsite at one time, and collect all data necessary to document such events, such as GPS location, photographs, and observations necessary to develop a comprehensive report;

7. Respond directly to inquiries of the CPM or responsible Energy Commission staff regarding biological resource issues, and provide or collect reasonably available data upon CPM request, including information as specified in **BIO-2 #6**;
8. Respond to reports of onsite kit fox mortality or injury, and to the extent possible, reports of dead or injured kit fox offsite and immediately adjacent the project boundaries or on access roads in accordance with Conditions of Certification **BIO-17**, fully document and record the event and collect pertinent data, and undertake restorative and/or disease prevention actions as specified within the American Badger and Kit Fox Management Plan prepared in accordance with Condition of Certification **BIO-17**.
9. 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;
10. 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](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines)>, as well as all terms and conditions of the Biological Opinion; and
11. Maintain the ability to be in regular, direct communication with representatives of CDFW, 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.

**Verification:** The Designated Biologist shall provide copies of all written reports, email communications 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 project owner's approved 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](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines)>.

**Verification:** The project owner shall submit the specified information to the CPM for approval at least 45 days prior to the start of any site mobilization or construction activities. 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(s) in conducting surveys and in monitoring of site mobilization, and construction related ground disturbance, site preparation, or permanent installation activities, including installation of desert tortoise exclusion fencing or reporting responsibilities. The Designated Biologist shall remain the contact for the project owner and the CPM, however, biological monitors will also respond directly to inquiries of the CPM or other responsible Energy Commission staff regarding biological resource issues, and collect and provide reasonably available information as requested by 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, Biological Monitor(s), and CPM to ensure conformance with the Biological Resources Conditions of Certification. The project owner shall provide Energy Commission staff with reasonable access to the project site under the control of the project owner and shall otherwise fully cooperate with the Energy Commission'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 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 the project owner's construction/operation manager shall halt all site mobilization, and construction, including ground disturbance, site preparation, or permanent installation activities, including installation of desert tortoise exclusion fencing and operation activities in areas specified by the Designated Biologist. During operations, or when the Designated Biologist

and/or Biological Monitors are not onsite, the following provisions are the project owner's responsibility 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, the construction/operation manager, and the CPM when to resume activities; and
3. Notify the CPM immediately 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 work stoppage relates to desert tortoise or any other federal or state-listed species, the Palm Springs Office of USFWS and the Ontario Office of CDFW shall also be notified.

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 and BLM 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, via phone and email. If the non-compliance or halt to construction or operation relates to desert tortoise or any other federal or state-listed species, the project owner shall notify the Palm Springs Office of USFWS and Ontario Office of CDFW at the same time. 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 in consultation with BLM, USFWS and CDFW, within 5 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 project owner shall also provide the, USFWS and CDFW a copy of all portions of the WEAP relating to desert tortoise and any other federal or state-listed species for review and comment. 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 mobilization, construction, commissioning, operation, non-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 intentionally harmed (unless posing a reasonable and immediate threat to humans);
3. Place special emphasis on desert tortoise, including pictures and information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
4. Provide pictures of desert tortoise, golden eagles, American badger, desert kit fox, Mojave fringe-toed lizard, and burrowing owl, provide information on sensitivity to human activities, legal protection, reporting requirements, and how to identify construction avoidance zones for these species as marked by flagging, staking, or other means, also describe the protections for bird nests and provide information as described above;
5. Provide overview for staff of potential impacts to reptiles and amphibians from vehicle strikes on all project roads (paved and unpaved) during construction operations, closure phases, reporting requirements, and protection measures;
6. Include a discussion of fire prevention measures to be implemented by workers during project activities; request workers to: a) dispose of cigarettes and cigars appropriately and not leave them on the ground or buried, b) keep vehicles on graveled, cleared or well-maintained ground at all times to prevent vehicle exhaust systems from coming in contact with roadside weeds, c) use and maintain approved spark arresters on all power equipment, and d) keep a fire extinguisher on hand at all times;
7. Describe the temporary and permanent habitat protection measures to be implemented at the project site;
8. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
9. 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 and documented within the Monthly Compliance Report.

**Verification:** At least 45 days prior to site mobilization and construction—the project owner shall provide to the CPM for review and approval and to BLM, USFWS, and CDFW 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 site mobilization and construction the project owner shall submit two copies of the final WEAP and implement the training for all workers.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least 6 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, BLM, USFWS, and CDFW 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 USFWS Biological Opinion, the Raven Management Plan, the Closure, Conceptual Restoration Plan, the American Badger and Desert Kit Fox Management 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 project owner shall provide to BLM, CDFW, and USFWS a copy of all portions of the BRMIMP relating to desert tortoise and any other federal or state-listed species for review and comment.

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, including remedial actions for standing water onsite in accordance with Conditions of Certification **BIO-8** and known or suspected disease outbreaks on the project site in accordance with Condition of Certification **BIO-17**;
6. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after whole acreages and a determination of whether more or less habitat compensation is necessary in the Construction Termination Report prepared in accordance with **BIO-28**;
7. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
8. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
9. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
10. All performance standards and remedial measures to be implemented if performance standards are not met;
11. Biological resources-related facility closure measures including a description of funding mechanism(s);
12. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
13. 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 CNDDDB per CDFW requirements.

**Verification:** The project owner shall submit the draft BRMIMP to the CPM at least 60 days prior to start of any site mobilization and construction-related ground disturbance, grading, boring, and trenching. At the same time, the project owner shall provide to BLM, CDFW, and USFWS a copy of all portions of the draft BRMIMP relating to desert tortoise and any other federal or state-listed species. The project owner shall provide the final BRMIMP to the CPM, BLM, CDFW, and USFWS at least 30 days prior to the start of any site mobilization and construction, grading, boring, or trenching. The BRMIMP shall contain all of the required measures included in all biological conditions of certification. No site mobilization or 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 final BRMIMP is 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(s). The project owner shall submit to the CPM the revised or supplemented BRMIMP within 10 days following the project owner's receipt of any additional permits. Under no circumstances shall ground disturbance proceed without implementation of all permit conditions.

To verify that the extent of construction disturbance does not exceed that described in these conditions, the project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM, BLM, USFWS, and CDFW. 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 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, BLM, USFWS, and CDFW no later than 90 days after completion of construction. The project owner shall also provide a final accounting in whole acres of vegetation communities/cover types present before and after construction. Construction acreages shall be rounded to the nearest acre.

Any changes to the approved BRMIMP must be approved by the CPM in consultation with BLM, CDFW, 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 site mobilization and construction activities, 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 project site and related facilities during site mobilization, operation and maintenance in a manner to avoid or minimize impacts to biological resources:

1. Limit Disturbance Areas. Minimize soil disturbance by locating staging areas, laydown, and temporary parking or storage for linear facilities in existing disturbed areas. Equipment maintenance and refueling shall not be conducted within 100 feet of any sensitive resource (for example, waters of the state, creosote bush-big galleta association, desert dry wash woodland, unvegetated ephemeral dry wash, dune habitats, and rare plant populations). Limit the width of the work area near sensitive resources. Avoid blading temporary access roads where feasible and instead drive over and crush the vegetation to preserve the seed bank and biotic soil crusts. 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 site mobilization and 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 dirt maintenance roads for linear facilities, or on dirt access roads to the project site. Private paved roads shall not exceed 45 mph; speed limits will be lowered during the tortoise's most active period (April through May and September through October [USFWS 2010]) to 35 miles per hour. The speed limit within 3 miles of the Colorado River Substation will be posted at 10 mph. Speed limit signs shall be posted on new access roads to the site.
4. Salvage or Relocate Wildlife during Ground Disturbance Activities. The Designated Biologist or Biological Monitor shall salvage or relocate sensitive wildlife during ground disturbance activities including clearing, grubbing, and grading operations when feasible to off-site habitat or out of harm's way. The species shall be salvaged or relocated when conditions will not jeopardize the health and safety of the monitor.
5. 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. Upon completion of desert tortoise fencing installation and clearing the Designated Biologist or Biological Monitor 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 clear ahead of equipment during brushing and grading activities. If desert tortoise are found during construction monitoring, procedures outlined in **BIO-9** shall be implemented.
6. Minimize Impacts of Transmission/Pipeline Alignments, Roads, and 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) *Suggested 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. Where feasible, avoid impacts to desert washes and special-status plants by adjusting the locations of poles and laydown areas, and the alignment of the roads and pipelines. Construction drawings and grading plans shall depict the locations of sensitive resources and demonstrate where temporary impacts to sensitive resources can be avoided and where they cannot.

7. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. Anticoagulants shall not be used for rodent control. Pre-emergents and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, State, and local laws and according to the guidelines for wildlife-safe use of herbicides in **BIO-14** (Weed Management Plan).
8. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.
9. Minimize Noise Impacts. Loud construction activities (e.g., hydraulic ram, 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 Nesting 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.

10. 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 outside the areas permanently fenced with desert tortoise exclusion fencing, it shall 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 move it out of harm's way as described in the USFWS Desert Tortoise Field Manual (USFWS 2009).
11. Avoid Wildlife Pitfalls. To avoid trapping desert tortoise and other wildlife in trenches, pipes or culverts, the following measures shall be implemented:
  - a. Backfill Trenches. At the end of each work day, the Designated Biologist or Biological Monitor 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 move it out of harm's way as described in the most recent USFWS Desert Tortoise Field Manual (currently USFWS 2009). Any other 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 elevated 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.

12. 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.
13. Dispose of Road-killed Animals. Road killed animals or other carcasses detected by personnel on roads associated with the project area shall be reported immediately to a Designated Biologist, Biological Monitor or Project Environmental Compliance Manager who will promptly remove the roadkill for disposal (i.e. removal to a landfill or disposal at the BSPP facility). For special-status species roadkill, the Biological Monitor shall contact the CPM, CDFW and USFWS within 1 working day of detection (within 8 hours in the case of a desert kit fox) of the carcass for guidance on disposal or storage of the carcass; all other roadkill shall be disposed of promptly, or as directed by the USFWS or CDFW. Handling of desert kit fox carcasses shall follow handling requirements included in the **BIO-17** American Badger and Kit Fox Management Plan. The Biological Monitor shall provide the special-status species record as described in **BIO-11** below.
14. 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.
15. 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.
16. Avoid Spread of Noxious Weeds. The project owner shall implement the following Best Management Practices during construction and operation, and all other measures as required in the final approved Weed Management Plan (**BIO-14**) to prevent the spread and propagation of noxious weeds and other invasive plants:

- a. For work outside the project facility fence line limit the size of any vegetation and/or ground disturbance and limit ingress and egress to defined routes;
  - b. Prevent spread of non-native plants via vehicular sources by implementing Trackclean™ or other methods of vehicle cleaning for vehicles getting into and out of the construction sites. Earth-moving equipment shall be cleaned prior to transport to the construction site; and
  - c. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations.
17. 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) which slope toward drainages shall be stabilized to reduce erosion potential.
  18. 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.
  19. Implement Erosion Control Measures. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. All areas subject to temporary disturbance shall be restored to pre-project grade and stabilized to prevent erosion and promote natural revegetation. Temporarily disturbed areas within the Project area include, but are not limited to: linear facilities, temporary access roads, temporary lay-down and staging areas. If erosion control measures include the use of seed, only locally native plant species from a local seed source shall be used. Local seed includes seeds from plants within the Chuckwalla Valley or Colorado River Hydrologic Units.
  20. Avoid Spreading Weeds. Prior to the start of site mobilization and construction, flag and avoid dense populations of highly invasive noxious weeds. If these areas cannot be avoided, they shall be pre-treated by the methods described in **BIO-14** (Weed Management Plan). Noxious weeds and other invasive non-native plants in the temporarily disturbed areas shall be managed according to the requirements in **BIO-14**.
  21. Salvage Topsoil. Topsoil from native desert areas to be temporarily disturbed (other than existing roads that have already been disturbed from previous construction activities) shall be salvaged, preserved and re-used for restoration of temporarily disturbed areas, except where less



invasive methods are used to maintain soil seed banks, functioning and root crowns (e.g., drive over/crush method). Salvaged topsoil shall be collected, stored and applied in a way that maintains the viability of seed and soil crusts. The project owner shall excavate and collect the upper soil layer (the top 1 to 2 inches that includes the seed bank and biotic soil crust) as well as the lower soil layer in accordance with the Project's Revegetation Plan. The upper and lower soil layers shall be stockpiled separately in areas that will not be impacted by other grading, flooding, erosion, or pollutants. If the soil is to be stored more than 2 weeks it shall be spread out to a depth of no more than approximately 6 inches to maintain the seed and soil crust viability, unless that storage would create increase disturbance to undisturbed surfaces. As needed, the project owner shall install temporary construction fencing around stockpiled topsoil, and signage that indicates whether the pile is the upper layer seed bank, or the lower layer, and clearly indicates that the piles are for use only in erosion control. After construction, the project owner shall replace the topsoil in the temporarily disturbed areas in the reverse order of stockpiling, subsoil, and then the seed-containing upper layer of topsoil.

22. 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, 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.
23. Decommission Temporary Access Roads with Vertical Mulching. Discourage ORV use of temporary construction roads by installing vertical mulching at the head of the road to a distance necessary to obscure the road from view, when the road is no longer in use for construction. Construction roads that are used infrequently will be blocked by barricades that can be easily removed for access by construction personnel, until they are no longer used. Boulder barricades and gates shall not be used for permanent vertical mulch unless the remainder of the site is fenced to prevent driving around the gate or barricade. Designated ORV routes and roads shall not be closed.

**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.

As part of the Annual Compliance Report each year following construction, the Designated Biologist shall provide a report to the CPM that describes compliance with avoidance and minimization measures to be implemented during construction, operation, and maintenance (for example a summary of the incidence of road-killed animals during the year, implementation of measures to avoid toxic spills, erosion and sedimentation, efforts to enforce worker guidelines, etc.).

No less than 30 days prior to site mobilization and construction, the project owner shall submit to the CPM, BLM, and CDFW a final agency-approved Revegetation Plan that has been reviewed and approved by the CPM in consultation with BLM. 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 or project owner 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 and 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 project 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 most recent USFWS Desert Tortoise Field Manual or more current guidance provided by CDFW 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 any subset of the plant site phasing that does not correspond to permanent perimeter fencing. Temporary fencing shall be installed along linear features unless a Biological Monitor is present in the immediate vicinity of construction activities for the linear facility. All permanent or temporary 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) or Biological Monitors (with direct contact to the Designated Biologist) using techniques outlined in the current USFWS *Desert Tortoise Field Manual* and may be conducted in any season with USFWS and CDFW approval. Biological Monitors may assist the Designated Biologist under his or her direct 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, BLM, CDFW 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. Desert tortoise located within the utility ROW alignments shall be moved out of harm's way in accordance with the current USFWS *Desert Tortoise Field Manual*. Any desert tortoise detected during clearance surveys for fencing within the project site and along the perimeter fence alignment shall be translocated and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan (**BIO-10**). Tortoise shall be handled by the Designated Biologist(s) in accordance with the current USFWS *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 current USFWS' *Desert Tortoise Field Manual* or the most recent agency guidance with the approval of the CPM.
  - 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 current USFWS *Desert Tortoise Field Manual* 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. To maximize the opportunity to find all tortoises each separate survey shall be walked in a different direction, in opposite directions, and/or offset to allow opposing angles of observation, or as directed in the Biological Opinion. Clearance surveys of the plant site may only be conducted when tortoises are most active (April through May or September through October) unless the project receives approval from CDFW and USFWS. Clearance surveys of linear features may be conducted during anytime of the year. Surveys outside of the active season require approval by USFWS and CDFW. Any tortoise located during clearance surveys of the power plant site and linear features shall be translocated or 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 current USFWS *Desert Tortoise Field Manual*. To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined in accordance with the Desert Tortoise Relocation/Translocation Plan. 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 in accordance with the Desert Tortoise Relocation/Translocation Plan. All desert tortoise handling, and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the current USFWS *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 activities. A Designated Biologist or Biological Monitor shall be onsite for clearing and grading activities to 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 tortoises handled: a) the locations (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. 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 to BLM, the CPM, USFWS, and CDFW 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 4 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 goals of the Desert Tortoise Relocation/Translocation Plan shall be to relocate or translocate all desert tortoises from the project site to nearby suitable habitat; minimize impacts on resident desert tortoises outside the project site; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the relocation/translocation effort through monitoring. The final Plan shall be based on the draft Desert Tortoise Relocation/Translocation Plan prepared by the project owner and shall include all revisions deemed necessary by BLM, USFWS, CDFW and the Energy Commission staff.

**Verification:** At least 60 days prior to site mobilization and construction 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 CDFW. All modifications to the approved Plan shall be made only after approval by the CPM, in consultation with BLM, USFWS and CDFW.

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, CDFW, and USFWS 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 at least 14 calendar days before initiating site mobilization and construction 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 and verify personally or use Biological Monitors, to check for compliance with all impact avoidance and minimization measures, including checking 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 ground disturbance activities including clearing, grubbing, and grading are completed and submit a monthly

compliance report to the BLM, CPM, USFWS and CDFW during construction.

4. Notification of Injured, Dead, or Relocated Listed Species. If an injured or dead listed or special status species is detected within or near the Project Disturbance area, the CPM, the Ontario Office of CDFW, and Palm Springs Office of USFWS shall be notified immediately by phone and email, or as otherwise directed by the CPM or, in the case of avian species, controlling permits as issued by the USFWS. 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 (within 8 hours in the case of desert kit fox). 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 or approved Biological Monitor shall immediately take it to a CDFW-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, CDFW, 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 to the CPM, BLM, the Ontario Office of CDFW, and the Palm Springs Office of USFWS. 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) or most recent guidelines approved by the CPM. 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.
  - c. Avian or bat injury or fatality. Notifications of injured or dead avian and bat species found onsite must include relevant scientific data such as GPS locations, photographs, observations and other reasonably available information.
5. Final Listed Species Report. The Designated Biologist or project owner shall provide the CPM and BLM 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

6. 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, BLM, CDFW, 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, BLM, CDFW 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.

Beginning with the first month after clearing, grubbing, and grading are completed and continuing every month until construction is complete, the project owner shall submit a report describing their results of the Monthly Compliance Inspections to the CPM, BLM, USFWS, and CDFW.

## **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 3,975 acres, per **BIO-28 – Table 1**, 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 Solar Power Project, including all project 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;
  - 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, such as the Chuckwalla DWMA, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
  - d. not have a history of intensive recreational use, grazing or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;
  - e. 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;
  - f. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
  - g. have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, 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, CDFW, 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 CDFW, 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 CDFW, 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

CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM and CDFW, 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 CDFW. 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 CDFW, 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 CDFW. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary. If a Security is provided, the project owner or an approved third party shall complete the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities.
- 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 CDFW and the CPM. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW 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 or with another CPM-approved entity 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 CDFW, 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 CDFW takes fee title to the compensation lands, CDFW 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 CDFW and with CDFW supervision.

- f. Interest, Principal, and Pooling of Funds. The project owner, the CPM and CDFW 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 CDFW 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 CDFW 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 CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.
  - iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a CPM-and CDFW-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 CDFW 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 CDFW 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 CDFW 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 CDFW'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 CDFW 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 approval, in consultation with CDFW, BLM and the USFWS, of the form of the Security. Security shall be provided in the amounts of \$3,681,687 for Phase 1; \$3,234,921 for Phase 2, \$3,613,250 for Phase 3, and \$3,115,754 for Phase 4. These Security estimates are based on the most current guidance from the REAT agencies (Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010) and may be revised with updated information. This Security estimate reflects the amount that would be required for Security if the project owner acquired the 3975 acres of mitigation lands itself. The actual costs to comply with this condition will vary depending on the final footprint of the project and its four phases, and the actual costs of acquiring, improving and managing the compensation lands.
- i. NFWF REAT Account. 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, which includes a NFWF administrative fee, must be made in the amounts of \$3,802,991 for Phase 1, \$3,304,650 for Phase 2, \$3,691,169 for Phase 3, and \$3,182,894 for Phase 4 as the security required in section 3h., 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 that estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the*

*REAT-NFWF Mitigation Account, July 23, 2010*, or more current guidance from the REAT agencies, 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 nongovernmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission and CDFW. Such delegation shall be subject to approval by the CPM and CDFW, 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 including site mobilization and construction, the project owner shall provide the CPM and CDFW 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, including site mobilization and construction. 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, CDFW, BLM and USFWS of the compensation lands acquisition and transfer within 18 months of the start of project ground-disturbing activities, including site mobilization and construction.

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 amounts in section 3h 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 for each phase.

No fewer than 90 days prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM, CDFW, USFWS, and BLM describing the parcels intended for purchase and shall obtain approval from the CPM and CDFW 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, CDFW, BLM and USFWS with a management plan for the compensation lands 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 CDFW, BLM and the USFWS.

Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM, CDFW, 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, Management, and Control Plan (Raven 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 CDFW. The draft Raven Plan submitted by the project owner (AECOM 2010a, Attachment DR-BIO-49) shall provide the basis for the revised draft and final Raven Plan, subject to review, revisions and approval from BLM, the CPM, CDFW and USFWS. The Raven 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, 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 a per phase 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 (*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 CDFW.

**Verification:** At least 45 days prior to any project-related ground disturbance activities, the project owner shall submit the revised draft Raven Plan to the CPM for review and approval and CDFW and USFWS for review and comment. No less than 10 days prior to the start of any project-related ground disturbance activities, including pre-construction site mobilization, the project owner shall provide the CPM, USFWS, and

CDFW with the final version of a Raven Plan. The CPM would determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Raven Plan shall be made only with approval of CPM in consultation with USFWS and CDFW.

No less than 10 days prior to the start of any project-related ground disturbance, including pre-construction site mobilization activities for each phase of project construction as described in **BIO-28**, the project owner shall provide documentation to the CPM, BLM, CDFW and USFWS that the one-time fee for the USFWS Regional Raven Management Program of has been deposited to the REAT-NFWS subaccount for the project.

Current estimate of the fee for the USFWS Regional Raven Management Program is \$105/acre.

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 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 (Plan) that meets the approval of the CPM. The objective of the Plan shall be to prevent the introduction of any new weeds and the spread of existing weeds as a result of project site mobilization, construction, operation, and closure. The draft Weed Management Plan submitted by the previous owner (AECOM 2010a, Attachment DR-BIO-97) shall provide the basis for the final plan, subject to review and revisions from the CPM and the BLM.

1. Weed Plan Requirements. The project owner shall provide a map to the CPM indicating the location of the Weed Management Area, which shall include all areas within 100 feet of the Project Disturbance Area, access roads, staging and laydown sites, and all other areas subject to temporary disturbance. The project owner shall provide a Plan for the Weed Management Area includes 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; map of existing populations of target weeds within 100 feet of the Project Disturbance Area and access roads; weed risk assessment; measures to prevent the introduction and spread of weeds; measures to minimize the risk of unintended harm to wildlife and other plants from weed control activities; monitoring and surveying methods;

and reporting requirements. Weed control described in the Plan shall focus on prevention, early detection of new infestations, and early eradication for the life of the Project. Weed control along the Project linears shall be limited to the areas where soils were disturbed during construction. Weed monitoring shall occur a minimum of once per year during the early spring months (February-April) to detect seedlings before they set seed. The focus of the Plan shall be on avoiding the introduction of new invasive weeds or the spread of highly invasive species, such as Sahara mustard. Non-native species with low ecological risk, or that are very widespread, such as Mediterranean grass, shall be noted but control shall not be required. When detected, new infestations of high priority species shall be eradicated immediately, if possible.

- a. Avoidance and Treatment of Dense Weed Populations. The Plan shall include a requirement to flag and avoid dense populations of the most invasive non-native weeds during any Project-related construction and operation in or adjacent to infestations. If these areas cannot be avoided, they shall be pre-treated, if practical, by one of the following methods: a) treating the infested areas by removing and properly disposing of seed heads by hand, prior to maturity, or spraying the new crop of plants that emerge in early spring to reduce the viable seed contained in the soil, or b) removing and disposing the upper 2 inches of soil and disposing it offsite at a sanitary landfill or other site approved by the County Agricultural Commissioner , or burying the infested soil, e.g. under the solar facility or in a pit, and covering the infested soil with at least three feet of uncontaminated soil. Where these measures are infeasible, then post-construction monitoring and control, as identified in Section 5, below, will be implemented.
- b. Cleaning Vehicles and Equipment. The Plan shall include specifications and requirements for the cleaning and removal of weed seed and weed plant parts from vehicles and equipment involved in Project-related construction and operation. Vehicles and equipment working in weed-infested areas (including previous job sites) shall be required to clean the equipment tires, tracks, and undercarriage *before* entering the Project area and, if necessary, before moving from infested areas of the Project Disturbance Area to uninfested areas. Cleaning shall be conducted on all track and bucket/blade components to adequately remove dirt and plant debris. Cleaning using hand tools, such as brushes, brooms, rakes, or shovels, is preferred. If water must be used, the water/slurry shall be contained to prevent seeds and plant parts from washing into adjacent habitat.
- c. Safe Use of Herbicides. The final Plan shall include detailed specifications for avoiding herbicide and soil stabilizer drift, and shall include a list of herbicides and soil stabilizers that will be used on the Project with manufacturer's guidance on appropriate use. The Plan shall indicate where the herbicides are expected to be used, and what techniques will be used to avoid chemical drift or residual toxicity to special-status species and their pollinators, and consistent with the



Nature Conservancy guidelines and the criteria under #2, below. Initially, weed control measures for target weeds with a demonstrated record of success shall be used, based on the best available information from sources such as The Nature Conservancy's The Global Invasive Species Team, California Invasive Plant Council: [http://www.cal-ipc.org/ip/management/plant\\_profiles/index.php](http://www.cal-ipc.org/ip/management/plant_profiles/index.php), and the California Department of Food & Agriculture Encycloweediea: [http://www.cdfa.ca.gov/phpps/ipc/encycloweediea/encycloweediea\\_hphtml](http://www.cdfa.ca.gov/phpps/ipc/encycloweediea/encycloweediea_hphtml).

- d. Other methods that may be effective, or have proven to be effective, but are not yet published, may be used upon approval by the CPM and BLM.
- e. The methods for weed control described in the final Plan shall meet the following criteria:
  - i. Manual: Well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Riverside County Agricultural Commissioner.
  - ii. Chemical: Herbicides known to have residual toxicity, such as pre-emergents and pellets, shall not be used in natural areas or within the engineered channels. Only the following application methods may be used: wick (wiping onto leaves); inner bark injection; cut stump; frill or hack and squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, and only on windless days, or with a squeeze bottle for small infestations (see Nature Conservancy guidelines described above);
  - iii. Biological: Biological methods may be used subject to review and approval by CDFW and USFWS and only if approved for such use by CDFA, and are either locally native species or have no demonstrated threat of naturalizing or hybridizing with native species;
  - iv. Mechanical: Disking, tilling, and mechanical mowers or other heavy equipment shall not be employed in natural areas but hand weed trimmers (electric or gas-powered) may be used. Mechanical trimmers shall not be used during periods of high fire risk and shall only be used with implementation of fire prevention measures.

**Verification:** No less than 10 days prior to start of any project-related ground disturbance activities including site mobilization and construction, the project owner shall provide the CPM with the final version of a Weed Management Plan that has been reviewed by BLM, and Energy Commission staff, USFWS, and CDFW and approved by CPM. Modifications to the approved Weed Control Plan shall be made only with approval from the CPM in consultation with BLM, USFWS, and CDFW.

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 AND BAT PROTECTION PLANS**

**BIO-15** The project owner shall prepare a Bird and Bat Conservation Strategy (BBCS) and submit it to the CPM for review and approval, in consultation with BLM, CDFW, and USFWS for review and comment. The BBCS shall provide for the following:

- Surveying and monitoring onsite avian use prior to commencing construction to document species composition. The project owner will submit all data gathered onsite to the CPM as specified herein, or as requested by the CPM, and will also make consulting biologists available to answer CPM inquiries.
- Implementation of a statistically robust avian and bat mortality and injury monitoring program to identify the extent of potential avian or bat mortality or injury from collisions with facility structures, including assessing levels of collision-related mortality and injury with PV panels and perimeter fences.
- Implementation of an adaptive management and decision-making framework for reviewing, characterizing, and responding to mortality monitoring results.
- Identification of specific conservation measures and/or programs to avoid, minimize, reduce or eliminate CEQA significant impacts over time and evaluation of the effectiveness of those measures.

### BBCS Components

The BBCS shall include the following components:

1. Preconstruction Baseline survey results. A description and summary of the baseline survey methods, raw data, and results.
2. Formation of a technical advisory committee (TAC). The TAC will facilitate concurrent project owner, CPM, and state and federal wildlife agency review of seasonal and annual survey results, development of decision-making framework for evaluating the effectiveness of the adaptive management measures implemented by the project owner, modification of the surveys in response to the results, if necessary, and the identification of additional mitigation responses that are commensurate with the extent of impacts that may be identified in the monitoring studies. A meeting schedule for the TAC will be identified, for regular review of avian and bat injury and mortality monitoring

results, and recommend any necessary changes to monitoring, adaptive management, and appropriate adaptive mitigation.

3. Full survey methodology and field documentation, identification of appropriate onsite survey locations, seasonal considerations, and preconstruction data.
4. Avian and bat mortality and injury monitoring, including:
  - (a) Onsite monitoring that will systematically survey representative locations within the facility, at a level that will produce statistically robust data; account for potential spatial bias and allow for the extrapolation of survey results to non-surveyed areas within the solar plant site boundary and the survey interval based on scavenger and searcher efficiency trials and detection rates;
  - (b) Low-visibility and high-wind weather event reporting to document potential weather-related collision risks that may be associated with increased risk of avian or bat collisions with project features, including foggy, highly overcast, or rainy night-time weather typically associated with an advancing frontal system, and high wind events in which 40 miles per hour winds are sustained for a period of greater than 4 hours;
  - (c) Statistically robust scavenger and searcher efficiency trials post-construction to document the extent to which avian or bat fatalities remain visible over time and can be detected within the project area and to adjust the survey timing and survey results to reflect scavenger and searcher efficiency rates;
  - (d) Statistical methods used to generate facility estimates of potential post-construction avian and bat impacts based on the observed number of detections during standardized searches during the monitoring season;
  - (e) Field detection and mortality or injury identification, cause attribution, and handling and reporting protocols consistent with applicable legal requirements.
5. Survey schedule and period. Post-construction monitoring studies included in the BBCS shall be for at least two years following commencement of commercial operation of each individual unit. At the end of the second year, the CPM, in consultation with the TAC, shall determine whether the survey program shall be continued for up to two additional years, based on results of onsite monitoring. The monitoring program may be modified with the approval of the CPM in response to survey results, identified scavenging efficiency rates, or other factors to increase monitoring accuracy and reliability or in accordance with the adaptive management decision-making framework included in the BBCS.
6. Adaptive management. An adaptive management program shall be developed to identify and implement reasonable and feasible measures

needed to reduce levels of avian or bat mortality or injury attributable to project operations and facilities to less than CEQA significant levels. Any such impact reduction measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) with the level of avian or bat mortality or injury. Adaptive actions undertaken will be discussed and evaluated in survey reports. The adaptive management program shall include the following elements:

- (a) Reasonable measures for characterizing the extent and significance of detected mortality and injuries clearly attributable to the project.
  - (b) Potential measures that the project owner could implement to adaptively respond to detected mortality and injuries attributable to the project, including but not limited to passive avian diverter installations along the perimeter or at other locations within the project to avoid site use, the use of sound, light or other means to discourage site use consistent with applicable legal requirements, onsite prey or habitat control measures consistent with applicable legal requirements, and additional perch and nest minimizing of project facilities.
7. Adaptive Mitigation: The CPM may require the project owner to implement adaptive mitigation for CEQA significant onsite injury or mortality of birds and bats, based on recommendations of the TAC. Any such adaptive mitigation measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) with the level of avian or bat mortality or injury that is attributable to the project facilities. Adaptive mitigation measures undertaken will be discussed and evaluated in survey reports. Such measures shall be approved by the CPM in consultation with the TAC and may include, but not be limited to: (i) restoration of degraded habitat with native vegetation; (ii) restoration of agricultural fields to bird habitat; (iii) management of agricultural fields to enhance bird populations; (iv) invasive plant species and artificial food or water source management; (v) control and cleanup of potential avian hazards, such as lead or microtrash; (vi) retrofitting of buildings to minimize collisions; (vii) retrofitting of conductors and above ground cables to minimize collisions; (viii) animal control programs; (ix) support for avian and bat research and/or management efforts conducted by entities approved by the CPM within the project's mitigation lands or other approved locations; (x) funding efforts to address avian diseases or depredation due to the expansion of predators in response to anthropomorphic subsidies that may adversely affect birds that use the mitigation lands or other approved locations; and (xi) contribute to the Migratory Bird Conservation Fund managed by the Migratory Bird Conservation Commission. Adaptive mitigation will be discussed and evaluated in survey reports.

**Verification:** Prior to the start of construction, a draft BBCS shall be submitted to the CPM for review and comment in consultation with CDFW, BLM, and USFWS. A final BBCS shall be submitted to the CPM within 60 days of construction

commencement. The project owner shall provide the CPM with copies of any written or electronic transmittal from the USFWS, BLM, or CDFW related to the BBCS within 30 days of receiving any such transmittal.

Reporting Protocol: Verification of Survey Results (including preconstruction bird and bat use, mortality monitoring, and golden eagle monitoring): All survey results and complete reports, including raw data, shall be submitted to the CPM after each survey season and in an annual summary report throughout the course of the study period, or as otherwise directed by the CPM. The results of onsite injury and mortality monitoring will be reported monthly or more frequently, if requested by the CPM. The reports will include all data required as part of the monitoring program. Post-construction monitoring studies included in the BBCS shall be for at least two years following commencement of commercial operation of each individual unit. The BBCS shall define the circumstances under which additional years of monitoring would be necessary. The Monitoring Study shall continue until the CPM, in consultation with CDFW, BLM, and USFWS, using the criteria included in the BBCS, concludes that the cumulative monitoring data provide sufficient basis for estimating long-term bird mortality for the project. The reports will include all monitoring data required as part of the monitoring program.

The reports shall also assess any adaptive management measure implemented during the prior year as approved by the CPM. After the second year of the monitoring program, the CPM shall meet and confer with the TAC and shall use the criteria contained in the BBCS to determine if subsequent monitoring periods are warranted

If a carcass or injured special status species is found at any time by the monitoring study or project operations staff, the project owner, Designated Biologist, or other qualified biologist that may be identified by the Designated Biologist shall contact the CPM, CDFW and USFWS by email, fax or other electronic means within one working day of any such detection. Verification of other injuries or mortalities shall be within 48 hours, or as otherwise directed by the CPM.

## **PRE-CONSTRUCTION NEST SURVEYS AND AVOIDANCE MEASURES**

**BIO-16** Pre-construction nest surveys shall be conducted if site mobilization and construction, mowing, trimming, or any vegetation maintenance 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. During operations and maintenance prior to mowing and any other vegetation maintenance during the nesting season, (February 1 through July 31) a single survey shall be conducted within 7 days of construction or maintenance activity to determine whether birds are nesting in the vegetation on site;
4. If active nests or suspected active nests are detected during the survey (including mowing and vegetation maintenance surveys during operations), a buffer zone (protected area surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with CDFW) and monitoring plan shall be developed, in coordination with the CPM. Nest locations shall be mapped and submitted, along with a report stating the survey results, to the CPM; and
5. 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 after surveys are completed, 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.

Each year during construction as part of the annual compliance report a follow-up report shall be provided to the CPM, BLM, CDFW, and USFWS describing the success of the buffer zones in preventing disturbance to nesting activity and a brief description of the outcome of the nesting effort (for example, whether young were successfully fledged from the nest or if the nest failed).

## **AMERICAN BADGER AND DESERT KIT FOX IMPACT AVOIDANCE AND MINIMIZATION MEASURES**

**BIO-17** The project owner shall contract a qualified biologist to conduct a baseline pre-construction desert kit fox and American badger survey and develop and implement an American Badger and Desert Kit Fox Mitigation and Monitoring Plan (Plan). The survey data will be used to revise the final Plan, as necessary, with the most recent species data from the project site.

The project owner shall conduct a baseline kit fox survey and submit a summary report that includes the following procedures:

1. A qualified biologist with demonstrated mammal experience shall complete a baseline pre-construction survey of desert kit fox and American badger populations on the project site and the anticipated dispersal areas for passive relocation between 30 and 60 days prior to initiation of any ground disturbing activities, not including installation of perimeter/desert tortoise fencing. Surveys of the solar plant site may be conducted after the perimeter fence is installed and concurrently with desert tortoise clearance surveys. The anticipated dispersal areas shall be defined as all suitable desert kit fox habitat within 500 meters of the project boundaries where desert kit fox would likely be displaced. The survey shall identify and record the locations of all potential dens throughout the project site (or phase) and shall characterize the approximate number and distribution of the badger and kit foxes on the site and anticipated dispersal areas. Depending on the season of the surveys (i.e. breeding or non-breeding) other demographic data will be. Approximately 30 to 60 days prior to installation of perimeter/desert tortoise fencing, a pre-construction survey for kit foxes will be conducted along the fenceline route. Depending on the fox breeding season, the width of the surveyed route and buffers may vary, as described in the approved Plan. The baseline pre-construction survey shall include the following components:
  - a. An inventory and mapped locations of desert kit fox dens and burrows on the project site (including all project disturbance areas) and in the anticipated dispersal areas, and an evaluation whether each burrow is occupied, and reproductive status of kit foxes (single animal, mated pair, or family group with young), if known. If status unknown measures as required under Item 2b, below, will be implemented.
  - b. Reporting: The project owner shall provide a draft Summary Report of the Baseline American Badger and Desert Kit Fox Survey to the CPM and BLM for review in consultation with CDFW. The project owner and the project owner's Designated Biologist shall consult with the CPM and BLM on any changes to the final Plan that would result from the baseline pre-construction survey data provided in the Summary Report. The project owner shall not implement the American Badger and Desert Kit Fox Mitigation and Monitoring Plan (below) until receiving the CPM and BLM's written approval of the final Plan.

The objective of the plan shall be to avoid direct impacts to the American badger and desert kit fox as a result of site mobilization and construction of the power plant and linear facilities, as well as during project operation and non-operation and closure. The final plan is subject to review and comment by BLM and revision and approval by the CPM, in consultation

with CDFW. The final Plan shall include, but is not limited to, the following procedures and impact avoidance measures:

2. Describe pre-construction survey and clearance field protocol, to determine the number and locations of single or paired kit foxes or badgers on the project site that would need to be avoided or passively relocated and the number and locations of desert kit fox or badger burrows or burrow complexes that would need to be collapsed to prevent re-occupancy by the animals.
  - a. Pre-Construction Surveys. A baseline, preconstruction survey shall be conducted as described above under Item 1. Surveys may be concurrent with desert tortoise and burrowing owl surveys to the extent it does not conflict with desert tortoise and burrowing owl agency protocols. Depending on the timing of the project phases and time between phases, surveys may need to be conducted for each phase of construction. Options for timing of surveys shall be detailed in the Plan. If dens are detected during the survey(s), each den shall be classified as inactive, potentially active, definitely active den, or natal den.
  - b. Monitoring and Protection Measures, Passive Hazing, and Den Excavation: The plan will include details on monitoring requirements, types and methods of passive hazing, and methods and timing of den excavation, including, but not limited to the following:
    - i. Inactive dens. Inactive dens [e.g. inactive dens are dens that are mostly or entirely silted in and ones in which the back of the den can be clearly seen (e.g., the den isn't deep and doesn't curve)] that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badger or kit fox. Only outside the whelping/pup rearing season as defined in the kit fox plan, dens that are determined to be inactive based on vegetation, debris or soil conditions, indicating to an experienced field biologist that the den is not being used, can be excavated by hand in the early evening.
    - ii. Potentially and definitely active dens. 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. 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. 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. If the den is proven inactive then den may be collapsed during whelping season. BLM approval may be required prior to release of badgers on public lands.

- iii. Active natal/pupping dens. If an active natal den (a den with pups) is detected on the site, the project owner shall proceed to implement the approved Plan and shall also notify the BLM, CPM, and CDFW within 24 hours. If the situation is unusual and/or not addressed by the approved Plan, then the project owner's biologist shall consult with the CPM, BLM, and CDFW to determine the appropriate course of action to minimize the potential for animal harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g. is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around all active dens. The denning season for American badger is approximately March to August, and for desert kit fox the denning season is approximately Mid-January to pup independence typically by July 1 (or earlier with confirmation of pup independence based on monitoring data). If the den is active during the whelping season, even if pups are not seen, disturbance is not allowed. Active natal/pupping dens will not be excavated or passively relocated.
  - c. Exception for American badger. In the event that passive relocation techniques fail for badgers, outside the denning season, or during the denning season if individual badgers can be verified to not have a litter, then live-trapping by a CDFW and CPM approved trapper is an option that may be employed to safely perform active removal as a last resort. A live-trapping plan including trapping methods as well as the name and resume, including documentation of relevant handling permits of the proposed trapper, would be included in detail as part of the approved Plan. In the event live-trapping would be employed as a last resort, written notification would be submitted to the CPM for review and approval in consultation with BLM and CDFW. The CPM, BLM and CDFW would be notified in writing no less than 1 week prior to live trapping of badger. The notification would at a minimum include what passive relocation methods have been attempted to date and the justification for live-trapping as a last resort. In addition timing, and location of release of the individual badger as well as the name of the proposed trapper and resume, including documentation of relevant handling permits if not previously included and approved in the Plan shall be included in the notification. BLM approval may be required prior to release of badgers on public lands.
3. Address other factors and procedures that may affect the success of kit fox and American badger relocation offsite, such as:

- a. Qualitative discussion of availability of suitable habitat on off-site surrounding lands within 10 miles of the project boundary, and evaluation of kit fox burrows within 500 meters of the project boundary, in areas where onsite foxes may disperse (e.g., by inventorying burrow numbers in selected representative sample areas) as identified in the pre-construction surveys above;
  - b. Estimates of the distances kit foxes would need to travel across the project site and across adjacent lands to safely access suitable habitat (including burrows) off-site;
  - c. Proposed scheduling of the passive relocation effort;
  - d. Methods to minimize likelihood that the animals will return to the project site;
  - e. Descriptions of any proposed or potential ground disturbing activities related to kit fox relocation, and locations of those activities (e.g., artificial burrow construction);
  - f. A monitoring and reporting plan to evaluate success of the relocation efforts and any subsequent re-occupation of the project site; and
  - g. A plan to subsequently relocate any animals that may return to the site (e.g., by digging beneath fences).
4. Address notification procedures for notifying the CPM, BLM and CDFW if injured, sick, or dead badger or kit fox are detected. Notify the CPM, BLM and CDFW if injured, sick, or dead American badger and desert kit fox are found. If an injured, sick, or dead animal is detected on any area associated with the solar project site or associated linear facilities, the CPM, BLM Palm Springs/ South Coast Field Office and the Ontario CDFW Office as well as the CDFW Wildlife Investigation Lab (WIL) shall be notified immediately by phone (8 hours in the case of a fatality). Written follow-up notification via FAX or electronic communication shall be submitted to the CPM, BLM and CDFW within 24 hours of the incident and shall include the following information as appropriate:
- a. Injured animals. If an American badger or desert kit fox is injured because of any project-related activities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM, BLM and CDFW personnel regarding the capture and transport of the animal to CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the injured animal, if it recovers. A written notification of the incident shall be sent to the CPM, BLM and CDFW containing, at a minimum, the date, time, location, and circumstances of the incident.
  - b. Sick animals. If an American badger or desert kit fox is found sick and incapacitated on any area associated with the project site or associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM, BLM and CDFW

personnel for immediate capture and transport of the animal to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the sick animal, if it recovers. If the animal dies, a necropsy shall be performed by a CDFW-approved facility to determine the cause of death, in accordance with measure “c”, below.

- c. Fatalities. If an American badger or desert kit fox is killed because of any project-related activities during construction, operation, and decommissioning or is found dead on the project site or along associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately refrigerate the carcass and notify the CPM, BLM and CDFW personnel within 24 hours (8 hours in the case of desert kit fox) of the discovery to receive further instructions on the handling of the animal. Handling of a dead kit fox shall follow the Guidelines for Handling a Desert Kit Fox Carcass (CDFW WIL) or most recent guidance. A necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed.
5. Additional protection measures to be included in the Plan and implemented:
    - a. All pipes within the project disturbance area outside the solar plant site, or inside the solar plant site if foxes are still on the site, must be fenced, capped and/or covered every evening or when not in use to prevent desert kit foxes or other animals from accessing the pipes and/or monitored.
    - b. All project-related water sources shall be covered and secured when not in use to prevent drowning.
    - c. The project owner shall coordinate with CDFW to identify any additional fence design features to maximize the effectiveness of the fence to exclude kit foxes from the project.
    - d. Incorporate and implement the CDFW Veterinarian’s guidance regarding impact avoidance measures including measures to prevent disease spread among desert kit foxes.
    - e. Include measures to reduce traffic impacts to wildlife if the project owner anticipates night-time construction. The plan must also include a discussion of what information will be provided to all night-time workers, including truck drivers, to educate them about the threats to kit fox, what they need to do to avoid impacts to kit fox, and what to report if they see a live, injured, or dead kit fox.
    - f. In order to reduce the likelihood of distemper transmission:
      - i. No pets shall be allowed on the site prior to or during site mobilization and construction, operation, and non-operation and closure, with the possible exception of vaccinated kit fox scat

- detection dogs during preconstruction surveys, and then only with prior CPM and CDFW approval;
- ii. Any hazing activities that include the use of chemical or other repellents (e.g. ultrasonic noise makers, or non-animal-based chemical repellents) must be cleared through the CPM and CDFW prior to use. The use of animal tissue or excretion based repellents (e.g. coyote urine, anal gland products) is not permitted.
  - iii. Any sick or diseased kit fox, or documented kit fox mortality shall be reported to the CPM, CDFW, and the BLM immediately upon identification (within 8 hours for mortality). If a dead kit fox is observed, it shall be collected and stored according to established protocols distributed by CDFW WIL, and the WIL shall be contacted to determine carcass suitability for necropsy.
6. The project owner may opt to participate in the CDFW led fee based Monitoring and Mitigation Program if in place prior to start of site mobilization and construction in lieu of implementation of certain items in 3i, 3j, 5a, 5b, 5d, 5f above. This includes financial responsibility for transportation and necropsy of desert kit fox mortalities due to project-related activities or sick animals found on or near the project site or associated linears as well as measures to address other factors and procedures that may affect the success of kit fox and American badger relocation offsite. If in place, the CDFW Monitoring and Mitigation Program activities associated with the Project and associated fees will be fully described in the final Plan. The project owner may also opt to participate in the program if established at a later date during site mobilization and construction or operation and will submit a revised Plan that includes the program information when established and confirmation that fees are paid.

**Verification:** No fewer than 90 days prior to the start of any, site mobilization and construction the project owner shall provide the CPM, BLM, and CDFW with a draft American Badger and Desert Kit Fox Mitigation and Monitoring Plan for review and comment.

Approximately 30 to 60 days prior to initiation of site mobilization and construction activities, not including perimeter/desert tortoise fencing, a qualified biologist with demonstrated mammal experience shall complete a baseline study of American badger and desert kit fox populations on the project site and the anticipated dispersal areas for passive relocation. Approximately 30 to 60 days prior to installation of perimeter/desert tortoise fencing, a pre-construction survey for kit foxes shall be conducted along the fenceline route.

The project owner shall submit a summary report to the CPM, BLM and CDFW within 7 days of completion of any badger and kit fox surveys. The report shall describe survey methods and results of the surveys. The project owner and the Designated Biologist shall consult with the CPM and BLM upon submitting the summary report regarding any changes to the final Plan.

No fewer than 15 days prior to start of any site mobilization and construction, the project owner shall provide an electronic copy of the CPM-approved final Plan to the CPM, BLM and CDFW and implement the Plan.

No later than 24 hours following a phone notification of an injured, sick, or dead American badger or desert kit fox, the project owner shall provide to the CPM, BLM and CDFW, via FAX or electronic communication, a written report from the Designated Biologist describing the incident of sickness, injury, or death of an American badger or desert kit fox, when the incident occurred, and who else was notified.

Beginning with the first month after start of construction and continuing every month until construction is completed, the Designated Biologist shall include a summary of events regarding the American badger and desert kit fox in each Monthly Compliance Reports (MCR). The impact avoidance and minimization measure(s) implemented and the results of implementation of those measures shall be reported in each MCR.

No later than 45 days after initiation of project operation, the Designated Biologist shall provide the CPM and BLM a final American Badger and Desert Kit Fox Mitigation and Monitoring Plan Report that includes: 1) a discussion of all mitigation measures that were and currently are being implemented; 2) all information about project-related kit fox and badger injuries and/or deaths; 3) all information regarding sick kit fox and badger found within the project site and along related linear facilities; and 4) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the American badger and desert kit fox.

Within 30 days of participation in the CDFW led fee based Monitoring and Mitigation Program during site mobilization and construction or operation the project owner will submit a revised Plan that includes the program information related to the project and confirmation that all fees are paid.

## **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 site mobilization and construction activities in accordance with CDFW guidelines (CDFW 2012). Surveys shall be focused exclusively on detecting burrowing owls, and shall be conducted from two hours before sunset to 1 hour after or from 1 hour before to 2 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 CDFW, 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; design of the artificial burrows shall be consistent with CDFW guidelines (CDFW 2012);
  - 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 1<sup>st</sup> through January 31<sup>st</sup>). 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 31<sup>st</sup>) 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 CDFW 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, CDFW 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 within dispersal distance from areas occupied by burrowing owl (generally approximately five miles). 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 CDFW, 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, CDFW 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 the Project Disturbance Area and relocation of the owls is required, within 30 days of completion of the burrowing owl pre-construction surveys the project owner shall submit to the CPM, BLM, CDFW, and USFWS a Burrowing Owl Mitigation Plan. The Burrowing Owl Mitigation Plan shall identify suitable areas for construction of burrows and the other passive relocation as described above. 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 CDFW that describes the results of monitoring and management of the burrowing owl burrow creation or enhancement area(s).

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, BLM, CDFW, and USFWS documentation indicating that non-disturbance buffer fencing has been installed as described above. The project owner shall report monthly to BLM, the CPM, CDFW and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures.

The project owner shall report monthly to BLM, the CPM, CDFW 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 CDFW and CPM a written report identifying how mitigation measures described in the plan have been completed.

No less than 30 days prior to the start of site mobilization and construction activities the project owner shall provide the CPM with an approved form of Security in accordance with this condition of certification. Actual Security for acquisition of 39 acres of burrowing owl habitat shall be provided no later than 7 days prior to the beginning of site mobilization and construction activities.

No fewer than 90 days prior to 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 CDFW, BLM, and USFWS, for the compensation lands and associated funds.

No later than 18 months from initiation of construction, the project owner shall provide written verification to the CPM that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

## **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:

**1. Section A: Special-Status Plant Impact Avoidance and Minimization Measures**

To protect all special-status plants<sup>10</sup> 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

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<sup>10</sup>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).

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 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. Special-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*<sup>11</sup>, the U.S. Environmental Protection Agency, and the Pesticide Action Network Database<sup>12</sup>.
- 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

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<sup>11</sup> 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>>

<sup>12</sup> 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>>

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.
- 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.

## **2. 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 one mile of the project site). Surveys shall occur at the appropriate time to capture the characteristics necessary to identify the taxon.
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 CDFW protocols (CDFW 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)<sup>13</sup>, 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 CNDDDB, 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 CNDDDB forms for each 'occurrence' (as defined by CNDDDB).
5. Reporting. Raw GPS data, metadata, and CNDDDB 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 CDFW guidelines (CDFW 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;

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<sup>13</sup> 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 CNDDDB 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 CNDDDB 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 CNDDDB protocol for occurrence mapping.

**3. 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 CNDDDB Rank 1 Plants (Critically Imperiled) - Avoidance Required: If late blooming species with a CNDDDB 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 percent 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 25percent 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 CNDDDB 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 percent 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 percent avoidance requirement because such isolated populations are not sustainable.
2. Mitigation for CNDDDB Rank 2 Plants (Imperiled) –Avoidance on Linears Required: If species with a CNDDDB 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 CNDDDB Rank 3 Plants – No On-Site Avoidance Required Unless Local or Regional Significance: If species with a CNDDDB 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 CNDDDB 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 CDFW, USFWS, BLM, and the CPM.
  5. 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.

#### **4. 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 one-fourth acre than the compensatory mitigation will be three-fourths 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 CDFW, 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 CDFW or another entity approved by the CPM. If an entity other than CDFW holds a conservation easement over the compensation lands, the CPM may require that CDFW or another entity approved by the CPM, in consultation with CDFW, 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 shall be estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010*, or more current guidance from the REAT 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, CDFW 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 CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW 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 CDFW, 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 CDFW takes fee title to the compensation lands, CDFW 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 CDFW and with CDFW 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 CDFW 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 estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010*, or more current guidance from the REAT agencies, 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 CDFW, 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 one-fourth acre than the improvements would be applied to an area equal to three-fourths 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<sup>14</sup> with one of the following threat ranks: a) long-term decline >30 percent; b) an immediate threat that affects >30 percent 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 estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010*, or more current guidance from the REAT agencies, 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:

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

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<sup>14</sup> 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](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>

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 CNDDDB 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 CNDDDB 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 identified 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 CNDDDB 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, CDFW, 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 fewer 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 seven 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 CDFW, 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 CNDDDB 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 3:1 ratio, 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 (25.3 acres or the acreage of sand dune/partially stabilized sand dune habitat impacted by the final project footprint from the project interconnection to the Colorado River Substation). 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, CDFW 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.

**Verification:** No later than 30 days prior to beginning site mobilization and construction activities, the project owner shall provide written verification of approved form of Security in accordance with this Condition of Certification. Actual Security shall be provided no later than seven days prior to the beginning of project ground-disturbing activities. 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, CDFW and USFWS describing the parcels intended for purchase.

The project owner, or an approved third party, shall provide BLM, the CPM, **CDFW** 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 BLM, CDFW 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 CDFW 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.

**BIO-21 DELETED**

**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 412 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 412 acres of ephemeral washes shall include at least 66 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 CDFW 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 CDFW 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 BLM, CDFW and the USFWS, to ensure funding. The final amount due will be determined by and updated appraisal and a PAR analysis conducted pursuant to **BIO-12**.
3. Preparation of Management Plan: The project owner shall submit to the CPM and CDFW 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 project owner'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 CDFW personnel upon demand. The CPM reserves the right to issue a stop work order or allow CDFW to issue a stop work order after giving notice to the project owner, the CPM, if the CPM in consultation with CDFW, 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 project owner 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 site mobilization and construction activities, the project owner shall provide the form of Security in accordance with this Condition of Certification. No later than seven days prior to beginning project site mobilization and construction 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, CDFW 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 CDFW.

Within 90 days after completion of project construction, the project owner shall provide to the CPM and CDFW 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 CDFW 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 CDFW, 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 CDFW 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 CDFW 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 CDFW.

## **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 site mobilization and construction 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. For each calendar year during which construction will occur and for up to two years after commercial operation begins 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 USFWS Land Based Wind Energy Guidelines (2011b) or more current guidance from the USFWS or CPM.
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. Monitoring and Adaptive Management Plan: If an occupied nest<sup>15</sup> is detected within one mile of the project boundaries, the project owner shall prepare and implement a Golden Eagle 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 USFWS Land Based Wind Energy Guidelines (2011b) or more current guidance from the USFWS or CPM. 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

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<sup>15</sup> 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.

to, cessation of construction activities that are deemed by the CPM 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, CDFW, 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 Palm Springs Office and CDFW within one working day of detection of the nest for interim guidance on monitoring and nest protection. The project owner shall provide the CPM, CDFW, 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 CDFW.

## **EVAPORATION POND NETTING AND MONITORING**

**BIO-25** The project owner shall cover the evaporation ponds prior to any discharge with mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. Netting mesh sizes approval shall be determined by the CPM in consultation with CDFW 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, CDFW, 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, CDFW, 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 CDFW, 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 CDFW, 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, CDFW 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 CDFW.

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, CDFW, 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 CDFW, 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:

- a. 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.
  - b. 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).
  - c. 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.
5. Criteria for Mitigation Lands: If the project owner chooses to mitigate in whole or in part by purchasing habitat:
- a. The project owner 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 spadefoot toad;
    - 2. depressions should have potential to pond water for nine days;
    - 3. adjacent uplands should have potential to provide refugia and foraging habitat; and
    - 4. other characteristics that a trained biologist would employ in designating potential habitat for the species.
  - b. If the above criteria are met, these habitats may overlap on other lands preserved by the project owner 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.

6. 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 CDFW, 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 CDFW.

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 31<sup>st</sup> 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 nine 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 CDFW 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 seven 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, CDFW and USFWS describing the parcels intended for purchase.

The project owner, or an approved third party, shall provide the CPM, CDFW 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 CDFW.

The project owner shall provide written verification to the CPM, and CDFW 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. Alternately, the CPM, in conjunction with the BLM, CDFW, and USFWS, may approve the project owner's use of another mitigation program or any other applicable in-lieu fee provision, provided that the Project's in-lieu fee proposal or mitigation program is found by the CPM to mitigate the impacts identified herein. If the in-lieu fee proposal or mitigation program is found by the CPM, in coordination with the BLM, CDFW, and USFWS to be in compliance, and the Project Owner chooses to satisfy its mitigation obligations through the in-lieu fee or mitigation program, the Project Owner shall provide proof of the in-lieu fee payment to the CPM prior to construction related ground disturbance.

**Verification:** If electing to use this provision, the project owner shall notify the CPM that it would like a determination that the project's in-lieu fee proposal or other mitigation program would mitigate for the impacts identified herein. Prior to site mobilization and construction related ground disturbance the Project Owner shall provide proof of the in lieu fee payment or other mitigation program to the CPM.

### **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 four phases as depicted in Figure 2-3 (Project Phasing) in Revised Petition for Amendment dated April 2013, "Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the project including all linear and ancillary facilities, as well as undeveloped areas inside the Project's boundaries that would no longer provide viable long-term habitat.

Project construction will occur in phases that generally follow development of the solar units,

- Phase 1: Includes Unit 1 and the linear corridor from where the gen-tie leaves Unit 1 south to the Colorado River Substation, and the distribution line
- Phase 2: Includes Unit 2
- Phase 3: Includes Unit 3
- Phase 4: Includes Unit 4 and the linear corridor from where the gen-tie leaves Unit 1 to the northern boundary of solar plant site. This portion of the linear corridor would not need to be constructed/disturbed until Unit 4 is constructed.

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 estimated disturbance area for each project Phase and resource type is provided in **BIO-28 Table 1** 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.

**BIO-28 Table 1. Impacts and Mitigation Required For Each Phase of The Project**

Phase	Desert Tortoise		MFTL		WBO	
	Impact (acres)	Mitigation (acres)	Impact (acres)	Mitigation (acres)	Impact (individual s/pairs)	Mitigation (acres)
Phase 1	1,074	1,074	25	76	2	39
Phase 2	942	942	0	0	0	0
Phase 3	1,051	1,051	0	0	0	0
Phase 4	908	908	0	0	0	0
Total	3,975	3,975	25	76	2	39

Phase	Desert Dry Wash Woodland		Vegetated Ephemeral Swales and Unvegetated Ephemeral Dry Wash	
	Impact	Mitigation	Impact	Mitigation

	(acres)	(acres)	(acres)	(acres)
Phase 1	2	6	91	137
Phase 2	5	15	59	86
Phase 3	0	0	5	8
Phase 4	15	45	77	115
Total	22	66	232	346

**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 CDFW, 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.

No less than 30 days prior to beginning Project ground-disturbing activities for each phase, the project owner shall provide the form of Security in accordance with this Condition of Certification in the amounts described in **BIO-28 Table 1**. No later than 7 days prior to beginning Project ground-disturbing activities for each phase, 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 for each phase.

## **B. SOIL AND WATER RESOURCES**

The testimony of staff witness Abdel-Karim Abulaban, P.E. concludes that the proposed amended BSPP could potentially impact soil and water resources. (Ex. 2000, pp. 4.9-1 – 4.9-90.) The Applicant has presented a draft Drainage, Erosion, and Sedimentation Control Plan (DESCP) to address storm water and soil erosion impacts. The evidence shows that the DESCP will mitigate the project's storm water and soil erosion impacts below the level of significance.

The project as amended will use significantly less water than the approved project. The Commission deemed the approved project's impact on Palo Verde Mesa Groundwater Basin (PVMGB) water supplies "insignificant;" (Ex. 2004, p. 323) the amended project's much smaller water use is even more insignificant when compared with the estimated 5,000,000 acre-feet storage capacity of the PVMGB. The testimony indicates that, with implementation of staff's recommended conditions of certification, project impacts to soil and water resources, both during construction and during operation, would be reduced below the level of significance. (Exs. 1012, pp. 12-13; 2003.)

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Soil and Water Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

## **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 DESCPC 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 one- 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 DESCPC 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. Furthermore, earthwork and temporary construction related activities shall be conducted such that off-site resources are protected from impacts due to redirection of flood flows around and through the site. Construction activities shall proceed in a manner so as to minimize exposure of facilities to construction period flooding. Any temporary diversion channels shall be adequately designed for flood conveyance capable of protecting the construction site while not contributing to on-site or off-site erosion.
- D. **Drainage Map** – The DESCPC 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 DESCPC 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 DESCPC 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 DESCPC 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 DESCPC 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 DESCPC 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 DESCPC 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 DESCPC 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.

**Verification:** No later than 30 days prior to start of site mobilization, the project owner shall submit a copy of the final DESCOP 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 CRBWQCB before approval of the DESCOP.

The DESCOP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and relevant portions of the DESCOP shall clearly show approval by the chief building official. The project owner shall provide in the monthly compliance report 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 DESCOP 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 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 three (3) 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 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 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 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 10 days of receipt of the County of Riverside's concurrence with the proposed well construction activities.

- c. No later than 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 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 1,200 af during the 48 months of construction and an annual average of 40 afy during operation.

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 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 one 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 five feet or more below the baseline trend.
3. If water levels have been lowered more than five 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 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 shall 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 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 10 days of being received by the project owner.

**Verification:** The project owner shall do all of the following:

At least 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.

At least 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.

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 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.

No later than March 31 of each year of construction or 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.

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 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.

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.

After the first five year operational and monitoring period, the project owner shall submit a five-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 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 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 **Appendices 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 60 days prior to any wastewater or storm water discharge, 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 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, 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 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.

**SOIL&WATER-10** The project owner will prepare both a Provisional Closure Plan and a Final Closure Plan that will meet the requirements of the BLM. The project owner shall identify likely closure scenarios and develop facility closure plans in accordance with **COM-15** "Facility Closure Plans" of the General Conditions. Actions to be taken to avoid or mitigate long-term impacts related to water and wind erosion after the facility's closure need to be identified. Actions may include such measures as a facility closure SWPPP, revegetation and restoration of disturbed areas, post-closure maintenance, collection and disposal of project materials and chemicals, and access restrictions.

**Verification:** One (1) year after initiating commercial operation, the project owner must submit a Provisional Closure Plan and cost estimate for permanent closure to the CPM for review and approval. Three (3) years prior to closing, the owner must submit a Final Closure Plan to the CPM for review and approval. The project owner shall amend these documents as necessary, with approval from the CPM, should the facility closure 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.
- 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 specific discussion of how the proposed onsite drainage design will protect the facility from erosion.
  3. Peak flow values at all downstream points of discharge from the Project.
  4. Any other information needed to allow a correlation between the FLO-2D model and the proposed drainage design.

**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 will 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 will 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 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

Digital input and output files associated with the FLO-2D analysis must be included with all submittals. The results of this analysis will 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 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 will address comments provided by the CPM until approval of the analysis is issued.

**SOIL&WATER-13**                **DELETED**

**SOIL&WATER-14**                **DELETED**

**SOIL&WATER-15**                **DELETED**

## **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 any for the life of the project (30 years) until pre-project (within 95 percent) 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 percent) 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:** At least 90 days prior to initiation of groundwater pumping for grading activities, 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.**

**SOIL&WATER-18 DELETED**

**SOIL&WATER-19** The project owner shall reduce impacts caused by large storms by ensuring solar panels, drainage washes that will have solar panels, and perimeter fencing are designed to accommodate the 100-year storm event, establishing ongoing maintenance and inspection of storm water controls, and implementing a response plan to clean up damage and address ongoing issues.

The project owner shall ensure that the solar panels, drainage washes that will have solar panels are designed and installed to accommodate storm water scour that may occur as a result of a 100-year, 24-hour storm event. The analysis of the storm event and resulting pylon stability shall be provided within a Pylon



Insertion Depth and Solar Panel Stability Report to be completed by the project owner. This analysis shall incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic storm water modeling performed by the project owner. The modeling shall be completed using methodology and assumptions approved by the CPM.

The project owner shall also develop a Storm Water Damage Monitoring and Response Plan to evaluate potential impacts from storm water, including damage to drainage washes, perimeter fencing, and solar panel supports that fail due to storm water flow or otherwise break and scatter panel debris or other potential pollutants on to the ground surface.

The basis for determination of pylon embedment depths shall employ a step-by-step process as identified below and approved by the CPM:

- A. Determination of peak storm water flow within each sub-watershed from a 100-year event:
  - Use of *Riverside County Flood Control and Water Conservation District Hydrology Manual (Riverside County Manual)* or other methodologies approved by the CPM to specify hydrologic parameters to use in calculations; and
  - Flo-2D model (or other approved models) must be developed to calculate storm flows from the mountain watersheds upstream of the project site, and flood flows at the project site, based upon hydrologic parameters from Riverside County.
- B. Determination of potential total pylon scour depth:
  - Potential channel erosion depths must be determined using the calculated design flows, as determined in A above, combined with Flo-2D to model onsite sediment transport.
  - Potential local scour must be determined using the calculated design flows, as determined in A above, combined with the Federal Highway Administration (FHWA) equation for local bridge pier scour from the FHWA 2001 report, "Evaluating Scour at Bridges" or other similar methodologies approved by the CPM.
- C. The results of the scour depth calculations and pylon stability testing must be used to determine the minimum necessary pylon embedment depth within the active channels. In the inactive portions of the alluvial fans that are not subject to channel erosion and local scour, the minimum pylon embedment depths must be based on the results of the pylon stability testing.
- D. The results of the calculated peak storm water flows and channel erosion and pylon scour analysis together with the recommended pylon installation depths shall be submitted to the CPM for review and approval sixty (60) days prior to the start of solar panel installation.

The Storm Water Damage Monitoring and Response Plan shall be submitted to the CPM for review and approval and shall include the following:

- Detailed maps showing the installed location of all solar panels within each project phase;
- Description of the method of removing all soil spoils should any be generated;
- Each solar panel should be identified by a unique ID number marked to show initial ground surface at its base, and the depth of the pylon below ground;
- Minimum Depth Stability Threshold to be maintained at pylons to ensure long-term stability under applicable wind, water (flowing and static), and debris loading effects;
- Above and below ground construction details of a typical installed solar panel;
- BMPs to be employed to minimize the potential impact of broken panels to soil resources;
- Methods and response time of panel cleanup and measures that may be used to mitigate further impact to soil resources from broken fragments; and
- Monitoring, documenting, and restoring the adjacent offsite downstream property when impacted by sedimentation or broken panel shards.

A plan to monitor and inspect periodically, before first seasonal and after every storm event:

- Security and Tortoise Exclusion Fence: Inspect for damage and buildup of sediment or debris
- Solar panels within drainages or subject to drainage overflow or flooding: Inspect for tilting, mirror damage, depth of scour compared to pylon depth below ground and the Minimum Depth Stability Threshold, collapse, and downstream transport.
- Drainage washes: Inspect for substantial migration or changes in depth, and transport of broken panels.
- Adjacent offsite downstream property: Inspect for changes in the surface texture and quality from sediment buildup, erosion, or broken panels.

Short-Term Incident-Based Response:

- Security and Tortoise Exclusion Fence: repair damage, and remove built-up sediment and debris.
- Solar panels: Remove broken panels, damaged structure, and damaged wiring from the ground, and for pylons no longer meeting the Minimum Depth Stability Threshold, either replace/reinforce or remove the panels to avoid exposure to broken glass.

- Drainage washes: no short-term response necessary unless changes indicate risk to facility structures.

Long-Term Design-Based Response:

- Propose operation/BMP modifications to address ongoing issues. Include proposed changes to monitoring and response procedures, frequency, or standards.
- Replace/reinforce pylons no longer meeting the Minimum Depth Stability Threshold or remove the panels to avoid impacts from broken panels.
- Propose design modifications to address ongoing issues. This may include construction of active storm water management diversion channels and/or detention ponds.

Inspection, short-term incident response, and long-term design based response may include activities both inside and outside of the project boundaries. For activities outside of the project boundaries the owner shall ensure all appropriate environmental review and approval has been completed before field activities begin.

**Verification:** At least sixty (60) days prior to installation of the first pylon, the project owner shall submit to the CPM a copy of the Pylon Insertion Depth and Solar Panel Stability Report for review and approval prior to construction.

At least sixty (60) days prior to commercial operation, the project owner shall submit to the CPM a copy of the Storm Water Damage Monitoring and Response Plan for review and approval prior to commercial operation. The project owner shall retain a copy of this plan onsite at all times. The project owner shall prepare an annual summary of the number of solar panels that fail due to damage, cause and extent of the damage, and cleanup and mitigation performed for each damaged solar panels. The annual summary shall also report on the effectiveness of the modified drainage washes against storms, including information on the damage and repair work or associated erosion control elements. The project owner shall submit proposed changes or revisions to the Storm Water Damage Monitoring and Response Plan to the CPM for review and approval.

## SOIL AND WATER RESOURCES – APPENDIX B

### FACTS FOR WASTE DISCHARGE—NextEra Blythe Solar Energy Center, LLC, Owner/Operator, Blythe Solar Power Project, Riverside County

1. **NextEra Blythe Solar Energy Center**, LLC, (the Discharger) is proposing to construct, own and operate a photovoltaic (PV) electric generating facility with evaporation ponds on land owned by the Bureau of Land Management (BLM). The project is located on the Palo Verde Mesa along the Interstate 10 (I-10) corridor, northwest of the City of Blythe. The facility is referred to as the Blythe Solar Power Project (BSPP). A site map (**Figure 1**), is incorporated herein and made a part of these requirements for waste discharge (Waste Discharge Requirements, or WDRs). The address for the Discharger is, **NextEra Blythe Solar Energy Center**, LLC, 700 Universe Blvd., JES/JB, Juno Beach, Florida 33408.
2. These WDRs regulate the Facility's two evaporation ponds.. The evaporation ponds are designated as Class II Surface Impoundments Waste Management Units (WMU) and must meet the requirements of the California Code of Regulations (CCRs), Title 27, CCR §20200 et seq. The boundaries of the Blythe Solar Power Project are shown on (**Figure 2**), as incorporated herein and made a part of these WDRs.
3. A Report of Waste Discharge (ROWD), was submitted by the previous owner on May 14, 2010 for the previously proposed evaporation ponds for the Blythe Solar Power Project.
4. Definition of terms used in these WDRs:
  - a. **Facility** – The entire parcel of property where the proposed Blythe Solar Power Project industrial operation or related solar industrial activities are conducted.
  - b. **Waste Management Units (WMUs)** – The area of land, or the portions of the Facility where wastes are discharged. The evaporation ponds are WMUs.
  - c. **Discharger** – The term Discharger means any person who discharges waste that could affect the quality of the waters of the State, and includes any person who owns the land, WMU or who is responsible for the operation of a WMU. Specifically, the terms

“discharger” or “dischargers” in these WDRs means **Next Era Blythe Solar Energy Center, LLC**.

- d. **Approved Project** – the prior solar thermal project proposed for this property that was approved by the BLM, CEC, and other agencies.

### **Facility Location**

5. The Project site is located approximately two miles north of I-10 and northwest of the City of Blythe, in an unincorporated area of eastern Riverside County, California. The area inside the Project’s security fence, the footprint within which all Project facilities will be located, will occupy approximately 4,138 acres of Federal land managed by the BLM.

### **Surrounding Land Use**

6. The Facility site is vacant undeveloped desert located approximately one mile north of the Blythe Airport, two miles north of I-10, and eight miles west of the City of Blythe. The small rural community of Mesaville lies to the east of the Project site on the Palo Verde Mesa. North and west of the Project site are vacant desert lands. South of I-10 is undeveloped public and private desert land. Undeveloped and irrigated desert is located east of the site where several large and small parcels are actively farmed. The nearest residence is located in the southeast one-quarter of section 14, outside of the BLM- administered property and outside the 4,350 acre disturbance area within the overall ROW that will be disturbed by Project construction and operation. Another residential structure is located off-site between the southern boundary of the Project site, north of the Blythe Airport. No other residences are known to exist within the one-mile radius of the Project site.
7. The Project site is not located in a designated wilderness area; however, it is located near lands that are designated as wilderness lands or ACEC (NECO Maps 2-38 and 2-4). The nearest Federal wilderness areas are located on mountainous land to the northwest and south of the Project site and are referred to as the Palen/McCoy Wilderness Area, and the Chuckwalla Mountains Wilderness Area, respectively. Riverside County land uses in the study area include Open Space-Rural, Agricultural and Public Facility.
8. The Project site is vegetated with desert scrub throughout. Based on information in the NECO Plan, the Project site has not been leased for grazing by BLM.

## Facility Description

9. The Project will have a nominal electrical output of approximately 485 megawatts (MW), from four photovoltaic (PV) units. The first three units would each generate 125 MW nominal alternating current (AC), and the fourth unit would generate approximately 110 MW AC (Figure 2). Construction of the first unit is tentatively scheduled for mid-2014, with the other units following in a phased approach. The entire project is projected to be completed within 48 months of the start of construction of the first unit.
10. Water for industrial uses such as PV panel washing will be supplied by up to three onsite wells. This source will also be used to supply water for employee use (e.g., drinking, showers, sinks, and toilets). Water received from the on-site wells will be pumped directly to a reverse osmosis (RO) treatment unit to meet the requirements of the California Department of Health Services for potable water supplies. PV panel washing water, will require on-site treatment for reduction of dissolved solids, and this treatment varies according to the quality required for this use.
11. The main waste stream at the site consists of industrial wastewater generated in the RO process. The concentrate from the RO system is discharged to lined evaporation ponds (two located near the water treatment plant). The BSPP Facility therefore includes two proposed evaporation ponds for waste water storage and disposal. Sanitary wastewater generated at the facility is disposed of via septic systems.
12. The project will include evaporation ponds for the evaporation of brine waste from the RO plant. There will be two ponds, a total of up to 12 acres in size at the BSPP facility. The evaporation ponds will be designed in accordance with Colorado River Basin Regional Water Quality Control Board (Regional Board) requirements.
13. The estimated project life for the Project is 30 years. In accordance with United States Department of Labor, Occupational Safety and Health Administration safety regulations, at least two qualified personnel would be present during all energized electrical maintenance activities at the facility. Site security systems would be monitored regularly by on-site personnel and an off-site 24-hour Remote Operations Center.
14. A sanitary septic system and on-site leach field will be used to dispose of sanitary wastewater.

## Climate

15. The Project is located in an arid desert climate; therefore, there are extreme daily temperature changes, low annual precipitation, strong seasonal winds and mostly clear skies. Evaporation rates are higher than precipitation rates. Based on 60 years of data from Blythe Airport, the mean maximum temperatures in June to September exceed 100°F. Winter months are more moderate with mean maximum temperatures of high 60's to low 70's °F and minimum temperatures in the low to mid 40's °F. Although there are no average minimal temperatures below freezing point (32°F), the temperature has historically dropped below freezing point between November and March.
16. Average annual evaporation in the Facility area, based on published data at the Indio Fire Station 70 miles west of the Project site, is 105 inches, of which 87 percent of that evaporation occurs between March and October. Average annual precipitation in the Project area, based on the gauging station at Blythe Airport, is 3.55 inches, with August recording the highest monthly average of 0.63 inches and June recording the lowest monthly average of 0.02 inches. Per the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for the Southern California area, 3.51 inches of rainfall shall fall in the 100 year, 24 hour storm event.
17. Winds in the Project area are generally south to southwest with a less frequent component of northerly winds (north through northwest). Calm conditions occur approximately 16.43% of the time, with the annual average wind speed being approximately 7.62 miles per hour (mph) (3.41 m/s).

### **Regional Topography and Drainage**

18. The Project site is located on the alluvial fan sediments derived from the McCoy Mountains, located due west of the Project site. The topography slopes gently to the east-southeast at grades of less than one percent over most of the site. Existing topographic conditions show an average slope of about one foot in 80 feet (1.25 percent) toward the east on the west side of the BSPP, and about one foot in 200 feet (0.50 percent) toward the southeast on the east side of the site. The McCoy Wash occurs about 2,000 feet from the northeastern corner of the Project site trending northwest to southeast and runs between the mound and knob features described above.
19. The vast majority of the time, the Facility site is dry and devoid of any surface flow. When surface flow does occur, it is in response to precipitation. The Facility site is characterized by numerous dry washes originating on the flanks of the McCoy Mountains that lie to the west of the site. These washes enter the site where they disperse as they enter

the sandier alluvial plain (northern end of the site). The conveyance capacity of the washes is limited and runoff during moderate to large events will break out of these features and be conveyed across the terrain as shallow sheet flow. In general, the drainages appear to be stable and not experiencing significant down cutting or lateral migration. Surface water flow tends to drain to the southeast towards the Colorado River.

20. The largest of these features is the McCoy Wash, which occurs about 4,000 feet from the northeastern corner of the Facility. Flow in the McCoy Wash can be as high as 4,000 cubic feet per second, as measured in 1976 during historic flooding in the watershed.
21. There are no permanent bodies of water located on the Facility site. There are no perennial streams in the McCoy Mountain watershed which impact the Facility site. No springs are listed in the area of the Palo Verde Mesa Groundwater Basin where the Facility is located, according to the NWIS database of Water Resources of the United States that is maintained by the USGS.

### **Flood Hazard**

22. According to FEMA, no flood insurance rate maps have been created for the Project site and adjacent areas. Reviews of flood zone maps generated by the Riverside County Flood Control District also did not identify any flood zone maps for this area of Riverside County.

### **Regional Geology**

23. The Facility is located in the northwestern Colorado Desert, in the alluvial-filled basin of the Palo Verde Mesa, which is part of the greater Colorado Desert Geomorphic Province. The basin is bound by the McCoy Mountains to the west, the Little Maria Mountains to the northwest, and the Big Maria Mountains to the northeast. This area has a generally low relief until near the surrounding mountains. In the region, the Palo Verde Valley is roughly equivalent to the recent historic floodplain of the Colorado River. Surficial deposits of late Miocene to Holocene age form most of the land surface in the area. Most of these deposits are composed of Quaternary Alluvium, underlain by the Pliocene Bouse Formation, which is in turn unconformably underlain by the Miocene Fanglomerate. These deposits are all underlain by bedrock consisting of metamorphic and igneous intrusive rocks of pre-Tertiary age, including Proterozoic schist and gneiss, Paleozoic sedimentary rocks, and Mesozoic sedimentary and metavolcanic rock sequences.

### **Site Specific Geology**



24. The Facility is sited on the uppermost of two terraces that comprise the Palo Verde Mesa. Topography at the Facility site slopes gently away from the McCoy Mountains from the west to the southeast. Ground surface elevations at the Facility site range from 580 feet above mean sea level (msl) in the west to 410 feet msl in the east.

## Seismicity

25. The Project site is located in seismically active Southern California, a region that has experienced numerous earthquakes in the past. A review of the Alquist Priolo (AP) Earthquake Fault Maps and the Riverside County AP Earthquake Hazard Zone Map indicate that there are no AP fault zones present within the Project boundaries (California Division of Mines and Geology 2000, California Geological Survey 2003, 2007).
26. According to the submitted geotechnical investigation of the site (Kleinfelder 2009), several inferred faults have been mapped by several authors trending northwest-southeast through the area. These faults are speculative and based on geophysical data (Rostein et al., 1976). The Blythe Graben is mapped approximately six miles northeast of the site (Stone, 2006). The Blythe Graben offsets Quaternary alluvium dated between 6 to 31 thousand years old. The tectonic significance of the Blythe Graben is unknown. The location and elevation of alluvial deposits of the McCoy wash area that have been incised by the McCoy Wash and other drainages suggest that tectonic uplift may have affected this area since the Pliocene epoch (within the last 5 million years). This uplift could be related to faulting, or regional uplift associated with the basin and range extension. Because the speculated faults in the area are not considered active, and there is no direct evidence of active faulting on the site, the risk associated with surface rupture from active faults at the site is considered very low. Regardless of whether there are faults across the site, because the Project is located in a seismically active area, all Project structures must be designed to comply with the California Building Code (CBC) and Universal Building Code (UBC) Zone 3 requirements. The CBC and UBC are considered to be standard safeguards against major structural failures and loss of life. The goals of the codes are to provide structures that will:
  - a. Resist minor earthquakes without damage;
  - b. Resist moderate earthquakes without structural damage but with some non-structural damage; and
  - c. Resist major earthquakes without collapse but with some structural and non-structural damage.

27. The CBC and UBC base seismic design on minimum lateral seismic forces ("ground shaking"). The CBC and UBC requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes.

### **Ground Rupture**

28. The Project site is not located within a State of California Earthquake Fault Zone designated by the Alquist-Priolo Special Studies Zone Act of 1972 (formerly known as a Special Studies Zone), an area where the potential for fault rupture is considered probable (Riverside County, 2008). In addition, no Quaternary, Sufficiently Active, or Well Defined Faults are located under or near the Site. Based on this information and engineering judgment, earthquake-induced ground rupture is not considered to be a significant hazard at the Site.

### **Slope Stability**

29. The Site is not considered to be an area with the potential for permanent ground displacement due to earthquake-induced landslides because surface topography at and near the site is relatively flat (Riverside County, 2008). A review of the Riverside County General Plan, Safety Element, did indicate areas considered susceptible to earthquake induced landslides and rock falls in the McCoy Mountains; however, these areas are several miles from the Site and are not expected to impact the Project. Based on this information and engineering judgment, slope instability is not considered to be a significant hazard at the Site.

### **Erosion**

30. Erosion is the displacement of solids (soil, mud, rock, and other particles) by wind, water, or ice and by downward or down-slope movement in response to gravity. Due to generally flat terrain, the Project site is not prone to significant mass wasting (gravity-driven erosion and non-fluvial sediment transport) at present. The Riverside County General Plan, Safety Element (Riverside County, 2008), indicates the Site is in an area with moderate potential for wind erosion, the off-site linears are in areas with moderate to high potential for wind erosion. Soil characteristics at the Project site allow for the potential for wind and water erosion, and significant sediment transport currently occurs across the valley axial drainage that crosses the majority of the proposed plant site. As indicated above, these valley axial deposits are characterized by subdued bar and swale topography and ongoing deposition from sheet

floods. Limited sand and aeolian erosion also occurs between depositional episodes.

31. To address the management of sediment transport, erosion and sedimentation during operation, the project design may incorporate minor diversion berms and channels. The final design for these features will be developed during detailed design, and will include industry-standard calculations and modeling to reduce the potential for erosion or sedimentation, and to reduce the need for ongoing maintenance. Dirt roads and exposed surfaces will be periodically treated with dust palliatives as needed to reduce wind erosion. Construction and maintenance of the proposed drainage and sediment management system at the Site is expected to reduce water and wind erosion at and downstream of the Site to less than significant levels.

### **Liquefaction**

32. Liquefaction is a soil condition in which seismically induced ground motion causes an increase in soil water pressure in saturated, loose, uniformly-graded sands, resulting in loss of soil shear strength. As a result, the effects of liquefaction can include loss of bearing strength, differential settlement, ground oscillations, lateral spreading, and flow failures or slumping. Liquefaction occurs primarily in areas where the groundwater table is within approximately 50 feet of the surface (Riverside County, 2008). The depth to water beneath the Site is estimated to be approximately 195 feet bgs. In addition, the sandy soils encountered in the upper 100 feet beneath the Project site during geotechnical drilling are generally dense and well graded. Dense, well-graded sands are not generally considered susceptible to liquefaction. Based on this information and engineering judgment, the potential for liquefaction hazard at the Project site is considered to be low. The potential for liquefaction will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to address identified conditions will be incorporated into the detailed project design.

### **Differential Settlement**

33. Seismically induced settlement can occur during moderate and large earthquakes in soft or loose, natural or fill soils that are located above the ground water table, resulting in differential settlement. The settlement can cause damage to surface and near-surface structures. The most susceptible soils are clean loose granular soils. Due to the expected dense to very dense nature of the near surface soils, the potential for damage due to seismically induced settlement is considered to be low at the Project site. The potential for seismically-induced

settlement will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to address identified conditions will be incorporated into the detailed project design.

### **Collapsible Soil Conditions**

34. Alluvial soils in arid and semi-arid environments can have characteristics that make them prone to collapse with increase in moisture content and without increase in external loads. Soils that are especially susceptible to collapse or hydrocompaction in a desert environment are loose dry sands and silts, and soils that contain a significant fraction of water soluble salts. Overall soil gradation observed at the Facility site trended from coarser- to finer-grained alluvial deposits as distance from the McCoy Mountains increased. The ground surface in the western portion of the Project site is dominated by areas of desert pavement with layers of flat-lying gravel overlying finer-grained sandy materials. East toward Black Creek road, the surface becomes less dominated by desert pavement and becomes sandier. Soils observed at the Facility site have a low permeability and high runoff potential. Based on this data and engineering judgment, the site soils do not have a significant potential for hydrocompaction or collapse. The potential for hydrocompaction and soil collapse will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to address identified conditions will be incorporated into the detailed project design.

### **Expansive Soil**

35. Expansive soil is predominantly fine grained and contains clay minerals capable of absorbing water in their crystal structure. It is often found in areas that were historically a flood plain or lake area, but can also be associated with some types of shale, volcanic ash or other deposits, and can occur in hillside areas also. Expansive soil is subject to swelling and shrinkage, varying in proportion to the amount of moisture present in the soil. As water is initially introduced into the soil (by rainfall or watering) expansion takes place. If dried out, the soil will contract, often leaving small fissures or cracks. Excessive drying and wetting of the soil can progressively deteriorate structures that are not designed to resist this effect, and can lead to differential settlement under buildings and other improvements. The surficial soils at the site generally consist of predominantly granular soils that do not contain much clay and are not subject to significant expansion hazards. The potential for expansive soils will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to

address identified conditions will be incorporated into the detailed project design.

36. Based on the above information, the cut and fill slope dimensions and earthwork requirements will be adequate to address the stability of the evaporation ponds for the life of the project and no further analysis is warranted.

## **Regional Hydrogeology**

37. The Project is located in the alluvial-filled basin of the Palo Verde Mesa. Regionally, this valley formed as a structural depression or a pull-apart basin and is composed of two broad geologic units, consolidated rocks and unconsolidated alluvium (Metzger et al 1973). The consolidated rocks consist of pre-Tertiary age igneous and metamorphic rocks, which form the basement complex, and in some locations, Tertiary-age volcanic rocks that overlie the basement complex. The consolidated rocks are nearly impermeable except for areas where fracturing or weathering has occurred. It is uncertain the extent that these rocks yield water to the alluvium. The flux of groundwater into and out of the bedrock is unknown and has not been described in the literature reviewed for this project.

## **Hydrostratigraphy**

38. The geologic units that are important in an evaluation of the water resources in the Palo Verde Mesa area are thought to be the Miocene-age Fanglomerate, the Pliocene-age Bouse Formation, and the fluvial deposits of the Colorado River. According to Metzger et al (1973), the Miocene-age Fanglomerate is made up chiefly of cemented gravel composed of poorly-sorted pebbles and some fine-grained material with a provenance from a nearby source. The Fanglomerate represents composite alluvial fans deposits that built up from local mountains as the fans prograded toward the valley. Because the Fanglomerate was deposited on an irregular surface having considerable local relief, it varies widely in thickness. Locally, the Fanglomerate may be absent, but at some places (e.g., Milpitas Wash area), it is at least 2,100 feet thick. Near Parker, Arizona, wells with specific capacities as much as 15 gallons per minute per foot of drawdown (gpm/ft) have been reported in the Fanglomerate (Metzger et al 1973). The Fanglomerate was not encountered during the drilling of test well TW-1, which was installed to a depth of 405 feet below ground surface (bgs) as part of the assessment of site conditions for the Application for Certification (AFC) that was developed for the prior solar thermal project.

39. The Bouse Formation is of Pliocene age and is composed of tufa and basal limestone overlain by interbedded clay, silt, and sand (Metzger et al 1973). These sediments were deposited in an embayment of the Gulf of California. According to Metzger et al (1973), the Bouse Formation rests unconformably on the Miocene Fanglomerate and the contact between the two formations is sharp. Near Blythe, the Bouse is overlain by younger alluvium and occurs at a depth of about 600 feet beneath unit B of the alluvium. The thickness of the formation is relatively uniform throughout the area. Near the town of Parker, Arizona (about 60 miles northeast of the BSPP site), the Bouse Formation was measured at a thickness of 767 feet in well LCRP-27 that was drilled by the United States Geological Survey (USGS). In the Palo Verde Valley at well LCRP-22, the basal limestone is 5-feet thick whereas south of Cibola, Arizona, the limestone is about 100- feet thick. The interbedded sequence of clays, silt, and sand that overlie the basal limestone is by far the thickest unit in the Bouse Formation, occurring in sequences over 700 feet in the Parker-Blythe-Cibola area, according to Metzger et al (1973). With respect to water-bearing characteristics, the Bouse Formation can be divided into two zones: an upper and a lower zone (Metzger et al 1973). The upper zone is an aquifer whereas the lower zone is an aquitard. The results of pumping tests, as reported by Metzger et al (1973), indicate that specific capacities as high as 15 gpm/ft of drawdown may be obtained from the upper zone. In contrast, the best that may be expected from the lower zone is 1 to 2 gpm/ft. Sediments of the Bouse Formation were not encountered during the drilling of test well TW-1 during the hydrogeologic investigation conducted as part of the AFC.
40. The contact between the Bouse Formation and the overlying deposits of the Colorado River is erosional irregular surface. The alluviums of the Colorado River are the result of several broad periods of sediment deposition (aggradation) and erosion (degradation) by the Colorado River.
41. The fluvial deposits of the Colorado River are divided into older and younger alluvium (Metzger et al 1973). They defined the younger alluvium as the sediment deposit representing only the youngest aggradation by the Colorado River, whereas older alluviums are the deposits of several degradations and aggradations. In well 6S/23E-32E1, located approximately 7.5 miles east of the BSPP site, the bottom of the Colorado River fluvial deposits reportedly occurs to a depth of about 506 feet bgs.
42. The older alluvium is comprised of a basal-cemented gravel overlain by inter-layered sequences of sand and pebbly sand, with lenses of cobble gravels and silt and clay. The gravels consist of quartzite, limestone, and

chert clasts derived from local mountain sources. In the Blythe area, this sequence has been measured as much as 600 feet thick. The lenses of cobble-gravel beds yield copious amounts of water according to Metzger et al (1973). The contact between the older and younger alluvium is between the present floodplain of the Colorado River and the bordering terraces, alluvial slopes, or bedrock.

43. The younger alluvium is composed of a basal gravel overlain by sand. The younger alluvium is generally from 90 to 125 feet thick above its basal gravel (Metzger et al 1973). The basal gravel may be absent locally in the Palo Verde Mesa, but the alluvium is continuous throughout the flood plain

### **On-site Drainage**

44. On-site storm water management for the completed facility will be provided through the use of source control techniques, site design and treatment control. The storm flows from the solar collector arrays will be treated through the use of swales, and ditches.

### **Facility Operational Water**

45. The Project's various water uses include water for PV panel washing, dust control, potable water, and fire protection. Water needs for the Project will be met by use of groundwater pumped from wells on the Project site. The estimated water supply need for the Project operation is approximately 30 to 40 acre-feet per year.

### **Evaporation Ponds (Design and Installation Sequence)**

46. The containment strategy for the evaporation ponds is summarized as follows:
  - a. Meet or exceed regulatory requirements for containment of waste fluids;
  - b. Select materials that are compatible with the physical, chemical and thermal characteristics of the water and contaminated soils being contained;
  - c. Protect against physical damage to the containment layers by including protective layers into the designs of each containment facility;

- d. Allow for occasional removal of contained media without otherwise damaging the integrity of the containment systems; and
  - e. Include the ability to monitor the integrity of the containment system, to transfer fluids out of permeable layers on a continuous basis, and to transfer fluids from one evaporation pond to another.
47. The two evaporation ponds will cover up to 12 acres and have a proposed design depth of eight feet which incorporates:
- a. Cleaning out each pond every 8 to 10 years over the 30-year life of the project;
  - b. 2 feet of operational depth;
  - c. Up to 3 feet of sludge build up between each clean out cycle; and
  - d. 2 feet of freeboard.
48. The containment design for the evaporation ponds, from the surface of the evaporation ponds downwards, consists of the following:
- a. A hard surface / protective layer;
  - b. A primary 60 mil high density polyethylene (HDPE) liner;
  - c. An interstitial leak detection system (LDS) comprising a drainage layer and piping;
  - d. A secondary 40 mil HDPE liner; and
  - e. A 2 foot thick compacted silty-sand base.
49. The hard surface / protective layer provides protection against accidental damage to the HDPE liners which could be caused by burrowing animals, falling objects, varying climatic conditions and worker activities. Second, the hard surface / protective layer will allow for occasional removal of the precipitated solids within the evaporation ponds. Various hard surface media such as reinforced concrete, roller compacted concrete, revetments, or combinations of these media will be assessed prior to the selection of the preferred option.
50. High density polyethylene (HDPE) was selected as the preferred fabric for the primary and secondary liners for the following reasons:
- a. It is chemically resistant to potentially high concentrations of dissolved



salts;

- b. It is very durable during installation;
  - c. It is strong and possesses desirable stress-strain characteristics; and
  - d. It is the most common synthetic liner material and as such there is a broad base of practical experience associated with the installation of HDPE amongst construction contractors.
51. A 60 mil upper liner was selected to provide appropriate balance between strength and ductility characteristics, which is very important during liner installation. A non-woven geotextile will be installed on top of the 60 mil liner to act primarily as a protective layer. A 40 mil lower liner was selected for the lower and secondary liner to provide slightly better ductility and handling characteristics during installation, as strength is of lesser importance for the secondary liner. HDPE possesses large thermal expansion and contraction characteristics, and exhibits stress when liner temperature exceeds 122 °F.
52. A 2 foot thick basal layer of compacted silty sand is included in the design profile to protect the underlying groundwater in the unlikely event that both synthetic liner materials are punctured during construction or operation of the evaporation ponds. This base layer also serves to provide a smooth, competent surface to support the overlying synthetic liners and leak detection system layers.

### **Leak Detection System**

53. A drainage layer is included in the design profile for the evaporation ponds which consists of a granular drainage layer with perforated piping to collect and convey fluids to an extraction riser in a leak detection sump (LDS). Geocomposite drainage materials, consisting of HDPE geonet and nonwoven geotextiles heat bonded to one or both sides, may be used in conjunction with or as a substitute for the granular drainage layer on slopes.
54. The water collected in the LDS will drain by gravity to a unique monitoring well that is constructed for each of the leak collection layer. Automated pneumatic, solar-powered pumping systems are included in the design of each of these monitoring wells to automatically return water to that pond, which in turn minimizes the hydraulic pressures across the secondary liners and therefore the risk of impact to groundwater quality.
55. The base of the evaporation pond leak detection and collection layer will slope at a minimum inclination of 1 percent to a leak collection trench. The trench will contain screened sand (with no fines) and a perforated

pipe that will slope at a minimum inclination of 3/4 percent towards a leak detection and collection sump, located at the lowest point in the pond. The water in the collection sump will drain by gravity to a monitoring well that is constructed for each evaporation pond (one well per pond). Automated pneumatic pumping systems in the monitoring wells will automatically return water collected in the sump to that evaporation pond, which in turn minimizes the hydraulic pressures across the secondary liners and, therefore, minimizes the risk of leakage through the secondary liner. Leakage rates will be measured using a flow totalizer.

56. The collection sump, pipe, and monitoring well, will include prefabricated and field-fabricated HDPE components with water tight, extrusion welded and wedge-welded seams and penetrations. The liner system will be installed in accordance with current practices. Destructive and non-destructive testing procedures will be used to verify sump and penetration tightness and continuity.
57. This design is consistent with CCR Title 27, Section 20340, which requires a Leak Detection and Removal System (LDRS) between the liners for the evaporation ponds.
58. The side slopes around the evaporation ponds will contain the same liner system as the base of the ponds, except that leak collection pipes will not be located on the pond side slopes.
59. The berms shall be covered with a minimum 6-inch thick road base or approved equivalent. The top of the berms will be a minimum of 2 feet above the surrounding grade to prevent potential inflow of stormwater.
60. The wastewater will come into contact with the hard surface/protective layer. The media for this layer will either be roller-compacted concrete or an approved equivalent alternate. All final media selection will be compatible with the wastewater by using quality concrete with maximum chemical resistance (specifications will be provided to the concrete manufacturer to ensure proper mix selection).
61. If there is leakage in the evaporation pond, the wastewater will come into contact with the primary/secondary liner. HDPE is chemically resistant to saline solutions and long-term contact between the wastewater in the evaporation ponds and the HDPE liner system will not compromise liner integrity.
62. The hard surface/protective layers, liner system, and base layer will have the ability to withstand the dissolved solids content of the water without degradation. These systems will not fail due to pressure gradients from

physical contact with the wastewater and residue or undergo chemical reactions or degradation.

63. The containment construction process will follow these general steps:
- a. Prior to construction, the topsoil and subsoil covering the area will be stripped and stockpiled.
  - b. Placement and compaction of the silty sand base material;
  - c. Installation of the carrier pipe for the moisture detection (neutron probe) system beneath the base of the ponds;
  - d. Construction of finish grading to sub grade, as needed, and excavation of the leak collection trench and detection/collection sumps.
  - e. Scarification, moisture conditioning, compaction, proof rolling and testing of subgrade materials;
  - f. Installation of secondary HDPE liner;
  - g. Installation of leak detection layer, sump, and leak extraction risers;
  - h. Installation of primary HDPE liner;
  - i. Installation of the non-woven geomembrane liner;
  - j. Installation of granular fill;
  - k. Installation of liner protection layers; and
  - l. Hard surface placement.

### **Waste Classification**

64. Wastewater from the water treatment units (e.g. reverse osmosis) within the Facility will be piped to the two evaporation ponds (total combined area of 12 acres) for disposal. The pond area provides sufficient evaporative capacity to dispose of the anticipated wastewater stream, and allows for one pond to be taken out of service for up to approximately ten years for cleaning, potential future maintenance, and repair without impacting the operation of the plant. Raw water for the Facility is supplied from groundwater wells.

## Wastewater Discharge

65. The estimated concentrations of chemical constituents in the wastewater discharge to the evaporation ponds based on the approved solar thermal project are provided in **Table 1**, Raw Water Quality and Estimated Chemistry of Wastewater Flows. The total concentrations of chemical constituents estimated in the evaporation pond residue that will accumulate in the ponds during operation of the previously proposed project are provided in **Table 2**. These values apply to the approved project but will not vary significantly for the modified project. These concentrations will be revised in accordance with a revised WDR to be submitted by the project owner prior to any wastewater discharge.
66. Classification of wastewater and evaporation pond residue is summarized in the Classification of Wastewater and Evaporation Pond Residue **Table 3** below.
67. Testing of this material will be conducted as part of the facility monitoring program to verify this characterization. The evaporation pond residue accumulated in the ponds is non hazardous; however, it does contain pollutants which could exceed water quality objectives if released, or that could be expected to affect the beneficial uses of waters of the state. Therefore, the evaporation pond residue is classified as a “designated waste.”

## Evaporation Residue

68. During the 30-year operating life of the Project, it is estimated that up to 3 feet of residue may accumulate in the bottoms of the evaporation ponds that consists of precipitated solids from the evaporated wastewater. The total amount of accumulated residue was estimated to be approximately 23,000 tons for the Approved Project and will be less for the Modified Project. The predicted chemical makeup of the residue, based on information about the raw water chemistry and knowledge of the water use and treatment processes at the Project, is summarized in **Table 3**, Estimated Chemistry of Evaporation Pond Residue.

## Hazardous Waste

69. There will be a variety of chemicals stored and used during construction and operation of the project. The storage, handling, and use of all chemicals will be conducted in accordance with applicable laws, ordinances, regulations, and standards.

70. Hazardous materials will be stored in proper containers in material yards and designated construction areas. Cleanup materials (spill kits) will also be stored in these areas. Fuel, oil, and hydraulic fluids used in on-site vehicles will be transferred directly from a service truck to construction equipment and will not otherwise be stored on site.
71. Designated, trained service personnel will perform fueling either prior to the start of the workday or at completion of the workday. Service personnel and construction contractors will follow SOPs for filling and servicing construction equipment and vehicles.

### **Basin Plan**

72. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) was adopted on November 17, 1993, and designates the beneficial uses of ground and surface water in this Region.
73. The Basin Plan designates beneficial uses for surface waters in each watershed of the Colorado River Basin region. Beneficial uses of surface waters within the Facility area and vicinity that could be impacted by the Facility include:
  - a. Agricultural use
  - b. Municipal use
  - c. Industrial use
  - d. Recreational use
  - e. Groundwater recharge
  - f. Wildlife habitat
  - g. Preservation of Rare, Threatened, or Endangered Species
74. The beneficial uses of ground water in the Imperial Hydrological Unit are:
  - a. Municipal Supply (MUN)
  - b. Industrial Supply (IND)
  - c. Agricultural supply

## Monitoring Parameters

75. Based on the chemical characteristics of the projected discharges to the evaporation ponds from wastewater, the following list of monitoring parameters are required. These specific parameters are selected because they provide the best distinction between the wastewater and the groundwater in the Project area that can be used to differentiate a potential release that could change the chemical composition of the groundwater.
- a. Cations: Antimony, Arsenic, Barium, Cadmium, Calcium, Total Chromium, Cobalt, Copper, Lead, Mercury, Nickel, Selenium, Zinc;
  - b. Anions: Chloride and Sulfate; and
  - c. Other: Total Dissolved Solids, Specific Conductivity, and pH.

## California Environmental Quality Act (CEQA)

76. The California Energy Commission (CEC) is the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) for all thermal power plants with power ratings of 50 MW or more and under Public Resources Code section 25500.1, jurisdiction for this photo voltaic facility. The CEC's power plant licensing process is a CEQA-equivalent process. The CEC will coordinate reviews and approvals with the regulatory agencies to ensure that the proposed project meets CEQA requirements. This includes obtaining these WDRs from the staff of the Regional Board. The CEC will certify this project and will include these WDRs as conditions of certification in accordance with the Warren-Alquist Act.<sup>16</sup>

## Monitoring and Reporting Program

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<sup>16</sup> The Warren-Alquist State Energy Resources Conservation and Development Act is the authorizing legislation for the California Energy Commission. The Act is codified at Public Resources Code (PRC) Section 25000 et seq.. PRC Section 25500 establishes the Commission's authority to certify all sites and related facilities for thermal power plants with power ratings of 50 megawatts or more. The section further declares that "the issuance of a certificate by the commission shall be in lieu of any permit, certificate, or similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for such use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law."

77. The monitoring and reporting requirements in the Monitoring and Reporting Program (Appendix D), and the requirement to install groundwater monitoring wells, are necessary to determine compliance with these WDRs, and to determine the Facility's impacts, if any, on receiving water.

**Table 1: Raw Water Quality and Predicted Chemistry of Wastewater Streams**

	Supply Water <sup>1</sup>	Wastewater To Evaporation Pond <sup>2</sup>	STC L <sup>3</sup>	TCL P <sup>4</sup>
24-Average Flow Rate (GPM)		8.748	---	---
Peak Operation Flow Rate		14.636	---	---
<b>Constituent</b>	(mg/L)	(mg/L)	(mg/	(mg/
<b>CATIONS</b>				
Calcium	287	369	---	---
Magnesium	60	185	---	---
Sodium	457	14818	---	---
Potassium	11	198	---	---
<b>ANIONS</b>				
M-Alkinity			---	---
Sulfate	970	17918	---	---
Chloride	559	10325	---	---
Nitrate	1	12	---	---
Silicon Dioxide	15	277	---	---
<b>GENERAL WATER QUALITY</b>				
Bicarbonate			---	---
Carbonate			---	---
OH		2	---	---
P-Alkalinity				
pH	7.2		---	---
Spec Cond	3338	61676	---	---
TDS	2,170	40089	---	---
Total Hardness (CaCO <sub>3</sub> )				
Turbidity	1.6	136		
Total Phosphate	0.3		---	---
Fluoride	1.3	24	180	---
Barium	0.017	0	---	---
Iron	0.123	2	---	---
Total Suspended Solids	1	0	---	---
Biological Oxygen Demand	1	0	---	---
<b>TRACE METALS</b>				
Boron	1.41	26.042	--	--
Copper	0.01	0.175	25	--
Molybdenum	0.031	0.569	350	--
Vanadium	0.005	0	24	--
Zinc	0.235	0.092	250	--
NOTES:				
1 - Water quality data from AFC Table Water 4, AECOM, 2009 apply to the Approved Project.				
2 - Water Quality data from Kiewit Evaporation Pond Preliminary Design, Operations and Maintenance Plan, April 2010				
3 - STLC = Soluble Threshold Limit Concentration, Regulated by CCR Title 22, Division 4.5, Article 3, Section 66261.24				
4 - TCLP = Toxicity Characteristics Leaching Procedure; Regulate under 40 CFR Section 261.24				

Source: AECOM ROWD May 14, 2010



**Table 2: Estimated Chemistry of Evaporation Pond Residue**

	Concentration in Evaporation Pond	Total Residue Mass After 30 Years	Concentration in Residue		STLC	TCLC	TCLP
	ppm	lbs	%	ppm	mg/L	mg/kg	mg/L
Aluminum	0.00	0	0	ppm	-	-	-
Arsenic	0.00	0	0	ppm	5.0	500	5.0
Barium	0.305	1,401	6.81	ppm	-	-	-
Boron	26.04	119,740	582.01	ppm	-	-	-
Calcium	369	1,698,481	0.83	%	-	-	-
Chloride	10325	47,474,130	23.1	%	-	-	-
Copper	0.18	809	3.93	ppm	-	-	-
Fluoride	24	110,397	536.60	ppm	180	18000	-
Iron	2.3	10,445	50.77	ppm	-	-	-
Magnesium	185	849,267	0.41	%	-	-	-
Manganese	573	2,634,625	1.28	%	-	-	-
Molybdenum	0.57	2,616	12.72	ppm	-	-	-
Nitrate	12	54,204	263.47	ppm	-	-	-
Phosphate	6	27,588	134.09	ppm	-	-	-
Potassium	198	911,395	0.44	%	-	-	-
Selenium	0	0	0.00	ppm	1.0	100	1.0
Silica	277	1,274,858	0.62	%	-	-	-
Sodium	14818	68,131,223	33.1	%	-	-	-
Sulfate	17918	82,386,733	40.0	%	-	-	-
Total	6	26,428	128.46	ppm	-	-	-
Vanadium	0.09	423	2.06	ppm	-	-	-
Zinc	4.34	19,955	96.99	ppm	250	5000	-
TDS	44,745	205,734,718	100	%	-	-	-

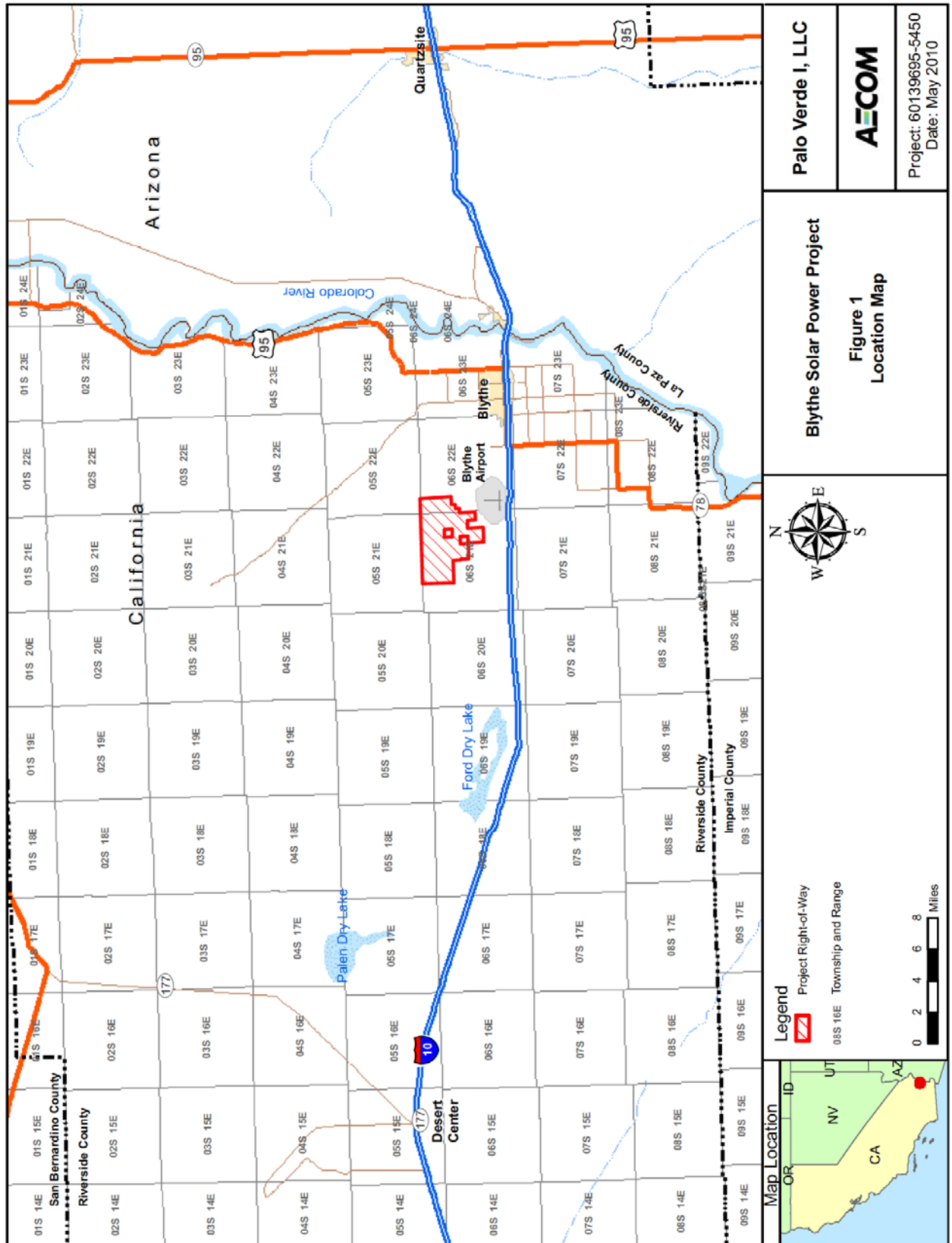
**Notes:** Where a constituent was reported as "ND" the amount in the supply water was assumed to be zero (0) ppm. Reporting those constituents at their lower detection limit would change the results above.

Source: AECOM ROWD May 14, 2010

**Table 3 Classification of Wastewater and Evaporation Pond Residue**

Waste Stream	Waste Stream Compared To	Regulation	Waste Stream Characteristic	State & Federal Classification	CWC Section 13173 Classification <sup>1</sup>
Wastewater	STLC	CCR Title 22, Chapter 11, Division 4.5, Article 3, Section 66261.24 "Characteristics of Toxicity"	<STLC	Non-hazardous	Designated waste
	TCLP	Code of Federal Regulations (CFR) Part 261, Section 261.24	<TCLP	Non-hazardous	Designated waste
Evaporation Pond Residue	STLC	CCR, Title 22, Chapter 11, Division 4.5, Article 3, Section 66261.24 "Characteristics of Toxicity"	<STLC	Non-hazardous	Designated waste
	TTLC	CCR, Title 22, Chapter 11, Division 4.5, Article 3, Section 66261.24 "Characteristics of Toxicity"	<TTLC	Non-hazardous	Designated waste
	TCLP	Code of Federal Regulations (CFR) Part 261, Section 261.24	<TCLP	Non-hazardous	Designated waste

Source: AECOM ROWD May 14, 2010



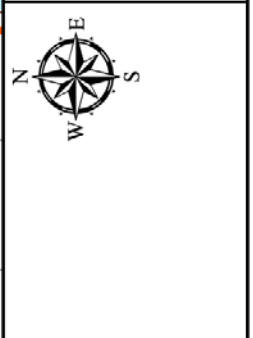
**Palo Verde I, LLC**

**AECOM**

Project: 60139695-5450  
Date: May 2010

**Blythe Solar Power Project**

**Figure 1**  
**Location Map**



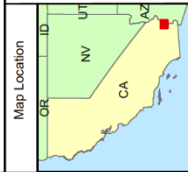
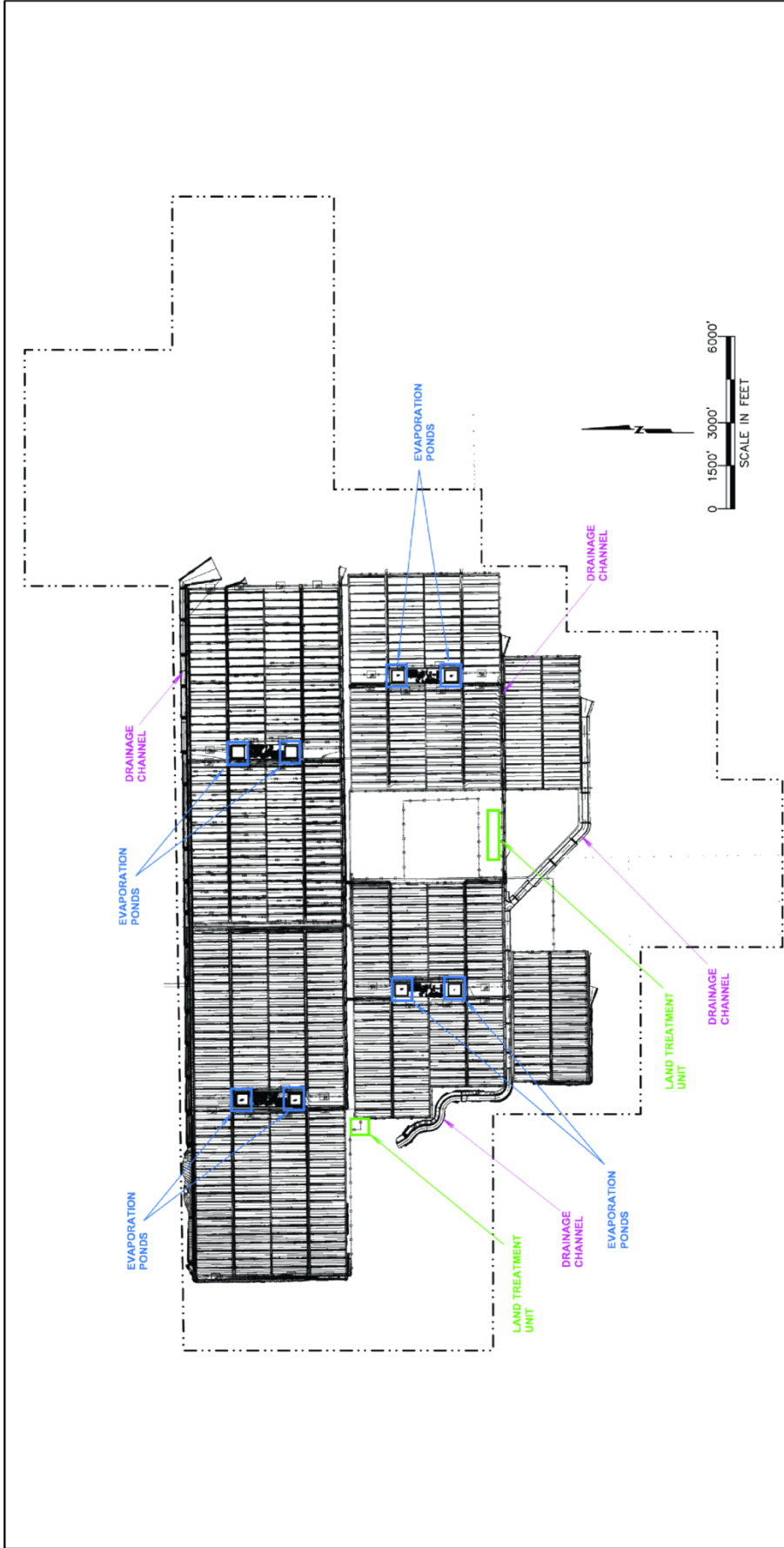
**Legend**

Project Right-of-Way

Township and Range

0 2 4 6 8 Miles





**Blythe Solar Power Project**  
**Figure 2**  
**General Arrangement Site Plan**

**Palo Verde I, LLC**  
**Kiewit AECOM**  
 Project: 60139695-5450  
 Date: May 2010

## **SOIL AND WATER RESOURCES – APPENDIX C**

### **REQUIREMENTS FOR WASTE DISCHARGE— NextEra Blythe Solar Energy Center LLC, Owner/Operator, Blythe Solar Power Project, Riverside County**

#### **A. Discharge Specifications**

1. The treatment or disposal of wastes at this Facility shall not cause pollution or nuisance as defined in Sections 13050 of Division 7 of the California Water Code (CWC).
2. The Discharger will maintain the monitoring wells in good working order at all times. Well maintenance may include periodic well re-development to remove sediments.
3. Thirty days prior to introduction of a new waste stream into the evaporation ponds, the Discharger must receive approval from the Regional Board's Executive Officer.
4. Waste material shall be confined or discharged to the evaporation ponds.
5. Prior to drilling a new well or abandoning a well at the Facility, the Discharger shall notify, in writing, the Regional Board's Executive Officer of the proposed change.
6. Containment of waste shall be limited to the areas designated for such activities. Any revision or modification of the designated waste containment area, or any proposed change in operation at the Facility that changes the nature and constituents of the waste produced must be submitted in writing to the Regional Board's Executive Officer for review and approval before the proposed change in operations or modification of the designated area is implemented.
7. Any substantial increase or change in the annual average volume of material to be discharged under this order at the Facility must be submitted in writing to the Regional Board's Executive Officer for review and approval.
8. If any portions of the evaporation ponds are to be closed, the Discharger shall notify the Regional Board's Executive Officer at least 180 days prior to beginning any partial or final closure activities.
9. Fluids and/or materials discharged to and/or contained in the evaporation ponds shall not overflow the ponds.
10. Prior to the use of new chemicals for the purposes of adjustment or control of microbes, pH, scale, and corrosion of the cooling tower water and wastewater, the Discharger shall notify the Regional Board's Executive Officer in writing.
11. For the liquids in the evaporation ponds, a minimum freeboard of two (2) feet shall be maintained at all times.

12. Final disposal of residual waste from cleanup of the evaporation ponds shall be accomplished to the satisfaction of the Regional Board's Executive Officer upon abandonment or closure of operations.
13. The evaporation ponds shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods having a predicted frequency of once in 100 years.
14. Prior to removal of solid material that has accumulated in the concrete evaporation ponds, an analysis of the material must be conducted and the material must be disposed of in a manner consistent with that analysis and applicable laws and regulations.
15. Conveyance systems throughout the Facility area shall be cleaned out at least every 90 days to prevent the buildup of solids.
16. Pipe maintenance and de-scaling activities that include hydroblasting and/or sandblasting shall be performed within a designated area that minimizes the potential for release to the environment. Waste generated as a result of these activities shall be disposed of in accordance with applicable laws and regulations. Water from the hydroblasting process shall be conveyed to the evaporation ponds.
17. Public contact with wastewater shall be precluded through such means as fences, signs, or other acceptable alternatives.
18. The evaporation ponds shall be managed and maintained to ensure their effectiveness.
19. Implementation of erosion control measures shall assure that small coves and irregularities are not created.
20. The liner beneath the evaporation ponds shall be appropriately maintained to ensure its proper functioning.
21. Solid material shall be removed from the evaporation ponds in a manner that minimizes the likelihood of damage to the liner.
22. Ninety days prior to the cessation of discharge operations at the Facility, the Discharger shall submit a workplan, subject to approval of the Regional Board's Executive Officer, for assessing the extent, if any, of contamination of natural geological materials and waters of the Palo Verde Mesa Groundwater Basin by the waste. One hundred twenty days following workplan approval, the Discharger shall submit a technical report presenting results of the contamination assessment. A California Registered Civil Engineer or Certified Engineering Geologist must prepare the workplan, contamination assessment, and engineering report.
23. Upon ceasing operation at the Facility, all waste, all natural geologic material contaminated by waste, and all surplus or unprocessed material shall be removed from the site and disposed of in accordance with applicable laws and regulations.

24. The Discharger shall establish an irrevocable bond for closure in an amount acceptable to the Regional Board's Executive Officer or provide other means to ensure financial security for closure if closure is needed at the discharging site. The closure fund shall be established (or evidence of an existing closure fund shall be provided) within six (6) months of the adoption of this Order.
25. Surface drainage from tributary areas or subsurface sources, shall not contact or percolate through the waste discharged at this site.
26. The Discharger shall implement the attached Monitoring and Reporting Program, Appendix D, and revisions thereto, in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the Facility, or any impairment of beneficial uses associated with (caused by) discharges of waste to the evaporation pond.
27. The Discharger shall use the constituents listed in the attached Monitoring and Reporting Program, Appendix D, and revisions thereto, as "Monitoring Parameters".
28. The Discharger shall follow the Water Quality Protection Standard (WQPS) for detection monitoring established by the Regional Board. The following are parts of WQPS as established by the Regional Board's Executive Officer:
  - a. The Discharger shall test for the monitoring parameters and the Constituents of Concern listed in the Monitoring and Reporting R7-2010-0xxx and revisions thereto.
  - b. Concentration Limits – The concentration limit for each monitoring parameter and constituents of concern for each monitoring point (as stated in the Detection Monitoring Program), shall be its background valued as obtained during that reporting period.
29. All current, revised, and/or proposed monitoring points must be approved by the Region Board's Executive Officer.
30. Water used for the process and site maintenance shall be limited to the amount necessary in the process, for dust control, and for Facility cleanup and maintenance.
31. The Discharger shall not cause or permit the release of pollutants, or waste constituents, in a manner which could cause or contribute to a condition of contamination, nuisance, or pollution to occur.
32. The Discharger must develop and implement a Hazardous Materials Business Plan (HMBP), which will include, at a minimum, procedures for:
  - a. Hazardous materials handling, use, and storage;
  - b. Emergency response;
  - c. Spill control and prevention;

- d. Employee training; and
  - e. Reporting and record keeping.
33. Hazardous materials expected to be used during construction include: unleaded gasoline, diesel fuel, oil, lubricants (i.e., motor oil, transmission fluid, and hydraulic fluid), solvents, adhesives, and paint materials. There are no feasible alternatives to these materials for construction or operation of construction vehicles and equipment, or for painting and caulking buildings and equipment.
  34. The construction contractor will be responsible for assuring that the use, storage and handling of these materials will comply with applicable federal, state, and local laws, ordinances, regulations and standards (LORS), including licensing, personnel training, accumulation limits, reporting requirements, and recordkeeping.
  35. During Facility operations, chemicals will be stored in chemical storage areas appropriately designed for their individual characteristics. Bulk chemicals will be stored outdoors on impervious surfaces in aboveground storage tanks with secondary containment. Secondary containment areas for bulk storage tanks will not have drains. Any chemical spills in these areas will be removed with portable equipment and reused or disposed of properly. Other chemicals will be stored and used in their delivery containers.
  36. A portable storage trailer may be on site for storage of maintenance lube oils, chemicals, paints, and other construction materials, as needed. All drains and vent piping for volatile chemicals will be trapped and isolated from other drains to eliminate noxious vapors. The storage, containment, handling, and use of these chemicals will be managed in accordance with applicable laws, ordinances, regulations, and standards.
  37. Small quantities of hazardous wastes will be generated over the course of construction. These may include paint, spent solvents, and spent welding materials. Some hazardous wastes will be recycled, including used oils from equipment maintenance, and oil-contaminated materials such as spent oil filters, rags, or other cleanup materials. Used oil must be recycled, and oil or heavy metal contaminated materials (e.g., filters) requiring disposal must be disposed of in a Class I waste disposal facility. Scale from pipe and equipment cleaning operations, and solids from the evaporation pond, will be disposed of in a similar manner.
  38. All hazardous wastes generated during facility construction and operation must be handled and disposed of in accordance with applicable laws, ordinances, regulations, and standards. Any hazardous wastes generated during construction must be collected in hazardous waste accumulation containers near the point of generation and moved daily to the contractor's 90-day hazardous waste storage area located on site. The accumulated waste must subsequently be delivered to an



authorized waste management facility. Hazardous wastes must be either recycled or managed and disposed of properly in a licensed Class I waste disposal facility authorized to accept the waste.

39. The Discharger shall monitor the evaporation ponds in conformance with applicable CCR Title 27 requirements for Class II surface impoundment waste management units.
40. The leachate collection and removal system must be used to provide preliminary detection monitoring of leaks through the top liner of the double-lined evaporation ponds. Physical evidence of leachate beneath the upper concrete liner shall be interpreted as a warning that containment of the evaporation pond contents may be compromised.
41. Groundwater monitoring wells must be constructed adjacent to and both up gradient and down gradient of the evaporation ponds to provide background and detection monitoring for any potential release from the evaporation ponds containment. The Point of Compliance to be used for the detection monitoring must be the shallow groundwater beneath the evaporation pond. The groundwater monitoring wells must be constructed in conformance with Title 27 CCR Section 20415 requirements. The monitoring wells must be designed to meet the background and detection monitoring requirements in conformance with Title 27 CCR Section 20415(b)(1)(B) as applicable, including:
  - a. Providing a sufficient number of monitoring points to yield ground water samples from the uppermost aquifer that represent the quality of ground water passing the Point of Compliance and to allow for the detection of a release from the evaporation ponds;
  - b. Providing a sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to yield ground water samples from the uppermost aquifer to provide the best assurance of the earliest possible detection of a release from the evaporation ponds; and
  - c. Selecting monitoring point locations and depths that include the zone(s) of highest hydraulic conductivity in the ground water body monitored.
42. The detection monitoring wells shall be constructed to meet the well performance standards set forth in Title 27 CCR Section 20415(b)(4), as applicable, including:
43. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport.
44. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative ground water samples.

45. For each monitoring well, the annular space (i.e., the space between the bore hole and well casing) above and below the sampling interval shall be appropriately sealed to prevent entry of contaminants from the ground surface, entry of contaminants from the unsaturated zone, cross contamination between portions of the zone of saturation, and contamination of samples.
46. All monitoring wells shall be adequately developed to enable collection of representative ground water samples.
47. The monitoring program must also meet the general requirements set forth in Title 27 CCR Section 20415(e), which require that all monitoring systems be designed and certified by a registered geologist or a registered civil engineer. The applicable general requirements set forth for boring logs, quality assurance/quality control, sampling and analytical methods used, background sampling, data analysis, and other reporting as applicable will be implemented.
48. Baseline samples of the groundwater must be collected from each of the monitoring wells and analyzed prior to discharging wastewater to the evaporation ponds. The groundwater must be initially sampled for each of the proposed monitoring parameters listed in the attached Monitoring and Reporting Program, Appendix D, and any additional Constituents of Concern identified by the Regional Board.

## **B. Prohibitions**

1. The discharge or deposit of solid waste to the evaporation ponds as a final form of disposal is prohibited, unless authorized by the Regional Board's Executive Officer.
2. The Discharger is prohibited from discharging, treating or composting at this site the following wastes:
  - a. Municipal solid waste;
  - b. Sludge (including sewage sludge, water treatment sludge, and industrial sludge);
  - c. Septage;
  - d. Liquid waste, unless specifically allowed by these WDRs or approved by the Regional Board's Executive Officer;
  - e. Oily and greasy liquid waste; unless specifically allowed by these WDRs or approved by the Regional Board's Executive Officer; and
  - f. Hot, burning waste materials or ash.
3. The Discharger shall not cause degradation of any groundwater aquifer or water supply.
4. The discharge of waste to land not owned or controlled by the Discharger is prohibited.

5. Use of wastewater on access roads, well pads, or other developed project locations for dust control is prohibited.
6. The discharge of hazardous or designated wastes to other than a waste management unit authorized to receive such waste is prohibited.
7. Any hazardous waste generated or stored at the facility will be contained and disposed in a manner that complies with federal and state regulations.
8. Wastewater or any fluids in the evaporation ponds shall not enter any canal, drainage, or drains (including subsurface drainage systems) which could provide flow to the Waters of the State.
9. The Discharger shall appropriately dispose of any materials, including fluids and sediments removed from the evaporation ponds.
10. The Discharger shall neither cause nor contribute to the contamination or pollution of ground water via the release of waste constituents in either liquid or gaseous phase.
11. Direct or indirect discharge of any waste to any surface water or surface drainage courses is prohibited.
12. The Discharger shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point assigned for Detection Monitoring pursuant to the attached Monitoring and Reporting, Appendix C, and future revisions thereto.

### **C. Provisions**

1. The Discharger shall comply with the attached Monitoring and Reporting Program, Appendix D, and future revisions thereto, as specified by the Regional Board's Executive Officer.
2. Unless otherwise approved by Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health. All analyses shall be conducted in accordance with the latest edition of "Guideline Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.
3. The laboratory shall use detection limits less than or equal to Environmental Protection Agency (EPA) Action Level/Maximum Contaminate Levels (MCLs) or California Department of Public Health (CDPH) Notification Level/MCL for all samples analyzed. The lowest concentration, whether EPA or CDPH, of the two agencies must be used for the analysis.

4. Prior to any change in ownership of this operation, the Discharger shall transmit a copy of the Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.
5. Prior to any modification in this facility that would result in material change in the quality or quantity of discharge, or any material change in the location of discharge, the Discharger shall report all pertinent information in writing to the Regional Board's Executive Officer and obtain revised waste discharge requirements before any modification is implemented.
6. All permanent containment structures and erosion and drainage control systems shall be certified by a California Registered Civil Engineer or Certified Engineering Geologist as meeting the prescriptive standards and performance goals.
7. The Discharger shall ensure that all site-operating personnel are familiar with the content of these WDRs, and shall maintain a copy of these WDRs at the site.
8. These WDRs do not authorize violation of any federal, state, or local laws or regulations.
9. The Discharger shall allow the Regional Board, or an authorized representative, upon presentation of credential and other documents as may be required by law, to:
  - a. Enter upon the premises regulated by these WDRs, or the place where records must be kept under the conditions of these WDRs;
  - b. Have access to and copy, at reasonable times, any records that shall be kept under the condition of these WDRs;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under these WDRs; and
  - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with these WDRs or as otherwise authorized by the CWC or California Code of Regulations, any substances or parameters at this location.
10. The Discharger shall comply with all of the conditions of these WDRs. Any noncompliance with these WDRs constitutes a violation of the Porter-Cologne Water Quality Act and may be grounds for enforcement action.
11. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with these WDRs. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.

12. These WDRs do not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
13. The Discharger shall comply with the following:
  - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
  - b. The Discharger shall retain records of all monitoring information, copies of all reports required by these WDRs, and records of all data used to complete the application for these WDRs, for a period of at least five (5) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Board's Executive Officer at any time.
  - c. Records of monitoring information shall include:
    - i. The date, exact places, and time of sampling or measurements.
    - ii. The individual(s) who performed the sampling or measurements.
    - iii. The date(s) analyses were performed.
    - iv. The individual(s) responsible for reviewing the analyses.
    - v. The results of such analyses.
  - d. Monitoring must be conducted according to test procedures described in the attached Monitoring and Reporting Program, Appendix D, unless other test procedures have been specified in these WDRs or approved by the Regional Board's Executive Officer.
14. All monitoring systems shall be readily accessible for sampling and inspection.
15. The Discharger is the responsible party for the WDRs, and the monitoring and reporting program for the Facility. The Discharger shall comply with all conditions of these WDRs. Violations may result in enforcement actions, requiring corrective action or imposing civil monetary liability.
16. The Discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Regional Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.
17. The Discharger may be required to submit technical reports as directed by the Regional Board's Executive Officer.
18. The procedure for preparing samples for the analyses shall be consistent with the attached Monitoring and Reporting Program, Appendix D, and any future revisions thereto. The Monitoring Reports shall be certified to

be true and correct, and signed, under penalty of perjury, by an authorized official of the company. All technical reports require the signature of a California Registered Professional Engineer or Professional Geologist.

19. All monitoring shall be done as described in Title 27 of the CCRs.

## SOIL AND WATER RESOURCES – APPENDIX D

### MONITORING AND REPORTING PROGRAM-- NextEra Blythe Solar Energy Center, LLC, Owner/Operator, Blythe Solar Power Project, Riverside County

#### PART I

#### GENERAL REQUIREMENTS

##### A. GENERAL

*A Discharger who owns or operates a Class II Surface Impoundment is required to comply with the provisions of Title 27, Division 2, Chapter 3, Subchapter 3, Article 1 of the California Code of Regulations for the purpose of detecting, characterizing, and responding to releases to the groundwater. Section 13267, California Water Code (CWC) gives the Colorado River Basin Regional Water Quality Control Board (Regional Board) authority to require monitoring program reports for discharges that could affect the quality of waters within its region.*

1. This Monitoring and Reporting Program (MRP) is Appendix C of the WDRs set forth in Appendices A and B, and are incorporated herein by this reference...The principal purpose of this self-monitoring program is:
  - a. To document compliance with Waste Discharge Requirements (WDRs), and prohibitions established by the Regional Board;
  - b. To facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from waste discharge;
  - c. To conduct water quality analyses.
2. The Regional Board Executive Officer may alter the monitoring parameters, monitoring locations, and/or the monitoring frequency during the course of this monitoring program.

##### B. DEFINITION OF TERMS

1. Affected Persons – all persons who either own or occupy land outside the boundaries of the parcel upon which a waste management unit (surface

impoundment or impoundment) is located that has been or may be affected by the release of waste constituents from the unit.

2. Background Monitoring Point – a device (e.g. well) or location (e.g. a specific point along a lakeshore) that is upgradient or side gradient from the impoundment assigned by this MRP, where water quality samples are taken that are not affected by a release from the impoundment and that are used as a basis of comparison against samples taken from downgradient Monitoring Points.
3. Constituents of Concern (COCs) – those constituents likely to be in the waste, or derived from waste constituents in the event of a release from the impoundment.
4. Matrix Effect – refers to any change in the Method Detection Limit (MDL) or Practical Quantitation Limit (PQL) for a given constituent as a result of the presence of other constituents - either of natural origin or introduced through a spill or release - that are present in the sample being analyzed.
5. Method Detection Limit (MDL) – the lowest constituent concentration that can support a non-zero analytical result with 99 percent reliability. The MDL is laboratory specific and should reflect the detection capabilities of specific procedures and equipment used by the laboratory.
6. Monitored Media – water - bearing media monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) groundwater in the uppermost aquifer, in any other portion of the zone of saturation (as defined in Title 27, Section 20164) in which it would be reasonable to anticipate that waste constituents migrating from the surface impoundment could be detected, and in any perched zones underlying the impoundment, (2) any bodies of surface water that could be measurably affected by a release, (3) soil-pore liquid beneath and/or adjacent to the surface impoundment, and (4) soil-pore gas beneath and/or adjacent to the surface impoundment.
7. Monitoring Parameters – the list of constituents and parameters used for the majority of monitoring activity.
8. Monitoring Point – a device (e.g. well) or location (e.g. a specific point along a lakeshore) that is downgradient from the surface impoundment assigned by this MRP, at which samples are collected for the purpose of detecting a release by comparison with samples collected at Background Monitoring Points.



9. Practical Quantification Limit (PQL) – the lowest constituent concentration at which a numerical concentration can be assigned with a 99 percent certainty that its value is within 10 percent of the actual concentration in the sample. The PQL is laboratory specific and should reflect the detection capabilities of specific procedures and equipment used by the laboratory.
10. Reporting Period – the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. Unless otherwise stated, the due date for any given report shall be 30 days after the end of its Reporting Period.
11. Sample Locations -
  - a. For Monitoring Points – the number of data points obtained from a given Monitoring Point during a given Reporting Period – used for carrying out the statistical or non-statistical analysis of a given analyte during a given Reporting Period.
  - b. For Background Monitoring Points – the number of new and existing data points from all applicable Background Monitoring Points in a given Monitored Medium – used to collectively represent the background concentration and variability of a given analyte in carrying out a statistical or non-statistical analysis of that analyte during a given Reporting Period.
12. Uppermost Aquifer – the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility’s property boundary.
13. Volatile Organic Constituents (VOCs) – the suite of organic constituents having a high vapor pressure. The term includes at least the 47 organic constituents listed in Appendix I to 40 CFR Part 258.
14. VOC<sub>Water</sub> – the composite monitoring parameter that includes all VOCs that are detectable in less than 10 percent of the applicable background samples. This parameter is analyzed, using the non-statistical method described in Part III.A.2. of this MRP, to identify releases of VOCs that are detected too infrequently in backgroundwater to allow for statistical analysis.

### **C. SAMPLING AND ANALYTICAL METHODS**

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA methods, and California ELAP rulings. Water

and waste analysis shall be performed by a laboratory approved for these analyses by the California Department of Public Health. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and approval by the Regional Board Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurement. In addition, the Discharger is responsible for verifying that laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meet the following restrictions:

1. Methods, analysis, and detection limits used must be appropriate for expected concentrations. For detection monitoring of any constituent or parameter found in concentrations that produce more than 90% non-numerical determinations (i.e. "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical methods having the lowest "facility-specific method detection limit (MDL)", defined in Part I.B.5., shall be selected from among those methods that provide valid results in light of any "Matrix Effects" (defined in Part I.B.4.) involved.
2. Analytical results falling between the MDL and the PQL shall be reported as "trace", and shall be accompanied both by the estimated MDL and PQL values for that analytical run, and by an estimate of the constituent's concentration.
3. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific equipment used by the lab. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with an estimate of the detection limit and quantitation limit actually achieved.
4. All Quality Assurance/Quality Control (QA/QC) data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than method recovery standards, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.

5. Upon receiving written approval from the Regional Board Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
6. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
7. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

#### **D. RECORDS TO BE MAINTAINED**

*Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five (5) years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:*

1. *Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;*
2. *Date and time of sampling;*
3. *Date and time that analyses were started and completed, and the initials of the personnel performing each analysis;*
4. *Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;*
5. *Calculations of results; and*
6. *Results of analyses, and the MDL and PQL for each analysis.*

#### **E. REPORTS TO BE FILED WITH THE REGIONAL BOARD**

1. Detection Monitoring Reports – For each Monitored Medium, all Monitoring Points and Background Monitoring Points assigned to detection monitoring under Part II.A.7 of this MRP shall be monitored **semiannually** for the Monitoring Parameters (Part II.A.4). A “Detection Monitoring Report” shall be submitted to the Regional Board in accordance with the schedule contained in the Summary of Self-Monitoring and Reporting Requirements, and shall include the following:
  - a. A Letter of Transmittal that summarizes the essential points in each report shall accompany each report submittal. The letter of transmittal shall be signed by a principal executive officer at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter of transmittal shall include:
    - i. A discussion of any violations noted since the previous report submittal and a description of the actions taken or planned for correcting those violations. If no violations have occurred since the last submittal, that should be so stated;

- ii. If the Discharger has previously submitted a detailed time schedule or plan for correcting any violations, a progress report on the time schedule and status of the corrective actions being taken; and
  - iii. A statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.
- b. A Compliance Evaluation Summary shall be included in each Detection Monitoring Report. The compliance evaluation summary shall contain at least:
  - i. Velocity and direction of groundwater flow for each monitored groundwater body under and around the surface impoundment based upon the water level elevations taken during the collection of water quality data. A description and graphical presentation (e.g., arrow on a map) shall be submitted;
  - ii. Methods used for water level measurement and pre-sampling purging for each monitoring well addressed by the report including:
    - 1. Method, time, and equipment used for water level measurement;
    - 2. Type of pump used for purging, placement of the pump in the well, pumping rate, and well recovery rate;
    - 3. Methods and results of field testing for pH, temperature, electrical conductivity, and turbidity, including:
      - a. Equipment calibration methods, and
      - b. Method for disposing of purge water
  - iii. Methods used for sampling each Monitoring Point and Background Monitoring Point, including:
    - 1. A description of the type of pump, or other device used, and its placement for sampling;
    - 2. A detailed description of the sampling procedure: number and description of samples, field blanks, travel blanks, and duplicate samples; types of containers and preservatives used; date and time of sampling; name and qualifications of individual collecting samples, and other relevant observations;
- c. A map or aerial photograph showing the locations of Monitoring Points, and Background Monitoring Points;
- d. For each Detection Monitoring Report, provide all relevant laboratory information including results of all analyses, and other information needed to demonstrate compliance with Part I.C.;
- e. An evaluation of the effectiveness of the run-off/run-on control facilities;
- f. A summary of reportable spills/leaks occurring during the reporting period; include estimated volume of liquids/solids discharged outside

designated containment area, a description of management practices to address spills/leaks, and actions taken to prevent reoccurrence.

2. Annual Summary Report – The Discharger shall submit to the Regional Board, an “Annual Summary Report” for the period extending from January 1 through December 31. The “Annual Summary Report” is due **March 15** of each year, and shall include the following:
  - a. A graphical presentation of analytical data for each Monitoring Point and Background Monitoring Point (Title 27, Section 20415(e)(14)). The Discharger shall submit, in graphical format, the laboratory analytical data for all samples taken within at least the previous five (5) calendar years. Each such graph shall plot the concentration of one (1) or more constituents over time for a given Monitoring Point and Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Regional Board Executive Officer may direct the Discharger to carry out a preliminary investigation (Title 27, Section 20080(d)(2)), the results of which will determine whether or not a release is indicated;
  - b. A tabular presentation of all monitoring analytical data obtained during the previous two (2) Monitoring and Reporting Periods, submitted on hard copy within the annual report as well as digitally on electronic media in a file format acceptable to the Regional Board Executive Officer (Title 27, Section 20420(h)). The Regional Board regards the submittal of data in hard copy and on diskette CD-ROM as "...a form necessary for..." statistical analysis in that this facilitates periodic review by the Regional Board statistical consultant;
  - c. A comprehensive discussion of the compliance record and any corrective actions taken or planned, which may be needed to bring the Discharger into full compliance with WDRs;
  - d. A written summary of the groundwater analyses, indicating changes made since the previous annual report; and
  - e. An evaluation of the effectiveness of the run on/run-off control facilities, pursuant to Title 27, Section 20365.
3. Contingency Reporting
  - a. The Discharger shall report any spill of evaporation pond liquid by telephone within 48 hours of discovery. The reportable quantity for evaporation pond liquid is 150 gallons.

After reporting a spill, a written report shall be filed with the Regional Board Executive Officer within seven (7) days, containing at a minimum the following:

- i. A map showing the location(s) of the discharge/spill;
  - ii. A description of the nature of the discharge (all pertinent observations and analyses including quantity, duration, etc.); and
  - iii. Corrective measures underway or proposed.
- b. Should the initial statistical comparison (Part III.A.1.) or non-statistical comparison (Part III.A.2.) indicate, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified, the Discharger shall immediately notify the Regional Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven (7) days of such determination (Title 27, Section 20420(j)(1)), and shall conduct a discrete retest in accordance with Part III.A.3. If the retest confirms the existence of a release, the Discharger shall carry out the requirements of Part I.E.3.d. In any case, the Discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven (7) days of completing the retest.
- c. If either the Discharger or the Regional Board determines that there is significant physical evidence of a release (Title 27, Section 20385(a)(3)), the Discharger shall immediately notify the Regional Board of this fact by certified mail (or acknowledge the Regional Board's determination) and shall carry out the requirements of Part I.E.3.d. for all potentially-affected monitored media.
- d. If the Discharger concludes that a release has been discovered:
- i. If this conclusion is not based upon "direct monitoring" of the Constituents of Concern, pursuant to Part II.A.5., then the Discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven (7) days of receiving the laboratory analytical results, the Discharger shall notify the Regional Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point. Because this scan is not to be tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point (Title 27 Section 20420(k)(1));
  - ii. The Discharger shall, within 90 days of discovering the release (Title 27, Section 20420(k)(5)), submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Title 27, Section 20425; and

- iii. The Discharger shall, within 180 days of discovering the release (Title 27, Section 20420(k)(6), submit a preliminary engineering feasibility study meeting the requirements of Title 27, Section 20430.
  - e. Any time the Discharger concludes - or the Regional Board Executive Officer directs the Discharger to conclude - that a liquid phase release from the surface impoundment has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).
    - i. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release; and
    - ii. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding a material change in the nature or extent of the release has occurred.
4. Surface Impoundment - Leakage Detection System (LDS), and Solids Monitoring
- a. Sampling and reporting shall be conducted semi-annually.
  - b. Provide volume of solids removed from the holding pond each month for that reporting period, and transported to a waste management facility for disposal. Include name and location of waste management facility.
  - c. Conduct quarterly inspections of Leakage Detection System (LDS), and holding pond.



## PART II

### **MONITORING REQUIREMENTS FOR GROUNDWATER**

#### **A. GROUNDWATER SAMPLING AND ANALYSIS FOR DETECTION MONITORING**

1. Groundwater Surface Elevation and Field Parameters – Groundwater sampling and analysis shall be conducted semiannually pursuant to California ELAP rulings, and include an accurate determination of the groundwater surface elevation and field parameters (temperature, electrical conductivity, turbidity) for each Monitoring Point and Background Monitoring Point (Title 27, Section 20415(e)(13)). Groundwater elevation obtained prior to purging the well and sample collection, shall be used to fulfill the semi-annual groundwater flow rate/direction analyses required under Part I.E.1.b.i. Groundwater wells shall be gauged using an electronic sounder capable of measuring depth to groundwater within 100<sup>th</sup> of an inch. Following gauging, wells shall be purged according to EPA groundwater sampling procedures until:
  - a. pH, temperature, and conductivity are stabilized within 10 percent, and
  - b. turbidity has been reduced to 10 NTUs or the lowest practical levels achievable.

The above identified parameters shall be recorded in the field, and submitted in the monitoring report. Sampling equipment shall be decontaminated between wells. Purge water may be discharged to the brine pond; discharge to the ground surface is prohibited.

2. Groundwater Sample Collection - Groundwater samples shall be collected from all monitoring points and background monitoring points after wells recharge to within at least 80 percent of their original static water level. Groundwater samples shall be collected with a peristaltic pump that is decontaminated between sampling events. Samples shall be labeled, logged on chain-of-custody forms, and placed in cold storage pending delivery to a State certified analytical laboratory.
3. Five-Day Sample Procurement Limitation – To satisfy data analysis requirements for a given reporting period, samples collected from all Monitoring Points and Background Monitoring Points shall be taken within a span not exceeding five (5) days, and shall be taken in a manner that insures sample independence to the greatest extent feasible (Title 27, Section 20415(e)(12)(B)).

Groundwater Monitoring Parameters for Detection Monitoring – Groundwater samples collected from monitoring points and background monitoring points shall be analyzed for the following:

<u>Parameter</u>	<u>Unit</u>	<u>Sample Type</u>
Chloride	mg/L	Grab
Sulfate	mg/L	Grab
Total Dissolved Solids (TDS)	mg/L	Grab
pH	#	Grab
Specific Conductance	μohms/cm	Grab
Heavy Metals (Sb, As, Ba, Cd, Ca, Cr, Co, Cu, Pb, Hg, Ni, Se, Zn)	mg/L	Grab
Oil & Grease	mg/L	Grab

All Monitoring Points and Background Monitoring Points assigned to Detection Monitoring shall be sampled semi-annually in **June** and **December** of each year in accordance with Part I of this MRP. Monitoring results shall be reported in the semi-annual Detection Monitoring Report.

4. Data Analysis – Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Part III of this monitoring program.

Monitoring Points and Background Monitoring Points – At a minimum of 90 days prior to the operation of the facility, the Discharger shall submit a proposed groundwater monitoring program, including background and detection monitoring locations, to the Executive Officer for review and approval.

5. Initial Background Determination: For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Background Monitoring Point (Title 27, Section 20415(e)(6)):
  - a. Whenever a new Constituent of Concern is added to the Water Quality Protection Standard, including any added by the adoption of this Board Order, the Discharger shall collect at least one (1) sample **quarterly** for at least one (1) year from each Background Monitoring Point in each monitored medium and analyze for the newly-added constituent(s); and
  - b. Whenever a new Background Monitoring Point is added, including any added by this Board Order, the Discharger shall sample the new monitoring point at least **quarterly** for at least one (1) year, analyzing for all Constituents of Concern and Monitoring Parameters.
6. Semiannual Determination of Groundwater Flow Rate/Direction (Title 27, Section 20415(e)(15)): The Discharger shall measure the water level in each well and determine groundwater flow rate and direction in each groundwater

body described in Part II.A.1. at least semiannually. This information shall be included in the semi-annual Detection Monitoring Reports required under Part I.E.1.

## PART III

### STATISTICAL AND NON-STATISTICAL ANALYSES

#### A. STATISTICAL AND NON-STATISTICAL ANALYSIS

The Discharger shall use the most appropriate of the following methods to compare the downgradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the surface impoundment. For any given data set, proceed sequentially down the list of statistical analysis methods listed in Part III.A.1., followed by the non-statistical method in Part III.A.2., using the first method for which the data qualifies. If that analysis tentatively indicates the detection of a release, implement the retest procedure under Part III.A.3.

1. Statistical Methods. The Discharger shall use one (1) of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters that exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples taken during that Reporting Period. Each of these statistical methods is more fully described in the Statistical Methods discussion below. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be a one-tailed (testing only for statistically significant increase relative to background) approach:
  - a. One-Way Parametric Analysis of Variance (ANOVA) followed by multiple comparisons (Title 27, Section 20415(e)(8)) – This method requires at least four (4) independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. It shall be used when the background data for the parameter or constituent obtained during a given sampling period, has not more than 15% of the data below PQL. Prior to analysis, replace all 'trace' determinations with a value halfway between the PQL and the MDL values reported for that sample run, and replace all "non-detect" determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated from that parameter or constituent; or

- b. One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons – This method requires at least nine (9) independent samples from each Monitoring Point and Background Monitoring Point; therefore, the Discharger shall anticipate the need for taking more than four (4) samples per Monitoring Point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, has not more than 50% of the data below the PQL. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent; or
  - c. Method of Proportions – This method shall be used if the "combined data set" – the data from a given Monitoring Point in combination with the data from the Background Monitoring Points – has between 50% and 90% of the data below the MDL for the constituent or parameter in question. This method; (1) requires at least nine (9) downgradient data points per Monitoring Point per Reporting Period, (2) requires at least thirty data points in the combined data set, and (3) requires that  $n * P > 5$  (where n is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter; or
  - d. Other Statistical Methods. – These include methods pursuant to Title 27, Section 20415(e)(8)(c-e).
2. Non-Statistical Method. The Discharger shall use the following non-statistical methods for all constituents that are not amenable to statistical analysis by virtue of having been detected in less than 10% of applicable background samples. A separate variant of this test is used for the VOC<sub>water</sub> Composite Monitoring Parameters. Regardless of the test variant used, the method involves a two-step process: (1) from all constituents to which the test variant applies, compile a list of those constituents which equal or exceed their respective MDL in the downgradient sample from a given Monitoring Point, then (2) evaluate whether the listed constituents meet either of the test variant's two possible triggering conditions. For each Monitoring Point, the list described above shall be compiled based on either the data from a single sample taken during the Monitoring Period for that Monitoring Point, or (where several independent samples have been analyzed for that constituent at a given Monitoring Point) from the sample that contains the largest number

of detected constituents. Background shall be represented by the data from all samples taken from the appropriate Background Monitoring Points during that Reporting Period (at least one (1) sample from each Background Monitoring Point). The method shall be implemented as follows:

- a. VOC<sub>water</sub> Composite Monitoring Parameter – For any given Monitoring Point, the VOC<sub>water</sub> Monitoring Parameter is a composite parameter addressing all detectable VOCs including at least all 47 VOCs listed in Appendix I to 40 CFR 258 and all unidentified peaks. The Discharger shall compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (an unidentified peak is compared to its presumed (MDL), and also (2) exceeds its MDL in less than ten percent of the samples taken during that Reporting Period from that medium's Background Monitoring Points. The Discharger shall conclude that a release is tentatively indicated for the VOC<sub>water</sub> composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL;
  - b. Constituents of Concern: As part of the COC monitoring required under Part 2.A.5 of this MRP, for each Monitoring Point, the Discharger shall compile a list of COCs that exceed their respective MDL at the Monitoring Point, yet do so in less than ten percent of the background samples taken during that Reporting Period. The Discharger shall conclude that a release is tentatively indicated if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL.
3. Discrete Retest – In the event that the Discharger concludes that a release has been tentatively indicated (under Parts III.A.1. or III.A.2.), the Discharger shall, within 30 days of that conclusion, collect two (2) new suites of samples for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicated Monitoring Point, collecting at least as many samples per suite as were used for the initial test. Re-sampling of Background Monitoring Points is optional. As soon as the retest data is available, the Discharger shall use the same statistical method or non-statistical comparison separately on each suite of retest data. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirms the original indication, the Discharger shall conclude that a release has been discovered. All retests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituent of Concern or Monitoring Parameter that triggered the indication there, as follows:
    - a. If an ANOVA method was used in the initial test, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two (2) new suites of samples taken from the indicating Monitoring Point;
    - b. If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or

parameter, carried out separately on each of the two (2) new sample suites from the indicating Monitoring Point;

- c. If the non-statistical comparison was used:
  - i. Because the VOC Composite Monitoring parameters (VOC<sub>water</sub>) each address, as a single parameter, an entire family of constituents which are likely to be present in any surface impoundment release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample that initiated the retest;
  - ii. Because all Constituents of Concern that are jointly addressed in the non-statistical testing under Part III.A.2. remain as individual Constituents of Concern, the scope of the laboratory analysis for the non-statistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

**SUMMARY OF SELF-MONITORING AND REPORTING REQUIREMENTS**

**A. GROUNDWATER MONITORING**

1. Groundwater monitoring wells shall be sampled/analyzed semi-annually for the following parameters/constituents:

	<b><u>Parameters &amp; Constituent</u></b>	<b><u>Type of Unit</u></b>	<b><u>Sample</u></b>	<b><u>Reporting Frequency</u></b>
a.	Chloride	mg/L	grab	semiannual
b.	Sulfate	mg/L	grab	semiannual
	Total Dissolved Solids (TDS)	mg/L	grab	semiannual
c.	PH	#	field measurement	semiannual
d.	Specific Conductance	μohms/cm	field measurement	semiannual
e.	Heavy Metals (Sb,As, Ba, Cd, Ca, Cr, Co, Cu, Pb, Hg, Ni, Se, Zn	mg/L	grab	semiannual
f.	Oil & Grease	mg/L	grab	semiannual

2. The collection, preservation, and holding times of all samples shall be in accordance with the U.S. Environmental Protection Agency approved procedures. All analyses shall be conducted by a laboratory certified by the California Department of Public Health to perform the required analyses.

**B. SURFACE IMPOUNDMENT: Leakage Detection System (LDS), and Solids Monitoring**

	<b>SAMPLING</b>	<b>REPORTING</b>	<b>Observation or</b>
<b><u>Frequency</u></b>			<b><u>Unit</u>   <u>Frequency</u></b>
1. Estimated volume of solid/liquid in holding pond			ft <sup>3</sup> Monthly semiannual
2. Measurement of freeboard			ft   Monthly semiannual
3. Volume of solids removed and shipped to off site waste management facility			tons   Monthly semiannual

**C. MONITORING REPORTS AND OBSERVATION SCHEDULE**



*“Reporting Period” means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. An annual report, which is a summary of all the monitoring during the previous year, shall also be submitted to the Regional Board. The submittal dates for Detection Monitoring Reports and the Annual Summary Report are as follows:*

**1. Detection Monitoring Reports**

- a. 1<sup>st</sup> Semiannual Report (January 1 through June 30) – report due by **August 1**
- b. 2<sup>nd</sup> Semiannual Report (July 1 through December 31) – report due by **March 1**

**2. Annual Summary Report**

January 1 through December 31 – report due **March 15** of the following year.

3. The Detection Monitoring Reports and the Annual Summary Report shall include the following:
- a. The Discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with WDRs.
  - b. Records of monitoring information shall include:
    - i. The date, exact place, and time of sampling or measurement;
    - ii. The individual performing the sampling or measurement;
    - iii. The date the analysis was performed;
    - iv. The initials of the individual performing the analysis;
    - v. The analytical technique or method used; and
    - vi. The result of the analysis.
  - c. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations."
  - d. A duly authorized representative of the Discharger may sign the documents if:
    - i. Authorization is made in writing by the person described in Part I.E.1.a;

- ii. Authorization specifies an individual or person having responsibility for the overall operation of the regulated disposal system; and
- iii. Written authorization is submitted to the Regional Board Executive Officer.
- iv. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.



## C. CULTURAL RESOURCES

The testimony of staff witnesses Thomas Gates, PhD., Michael D. McGuirt, and Melissa Mourkas, M.A., ASLA indicates that the amended project, as proposed, does not increase potential impacts to subsurface, surface and distant (visual) cultural resources. (Ex. 2001, pp.4.3-1—4.3-135.) For that reason, staff concluded that with the implementation of the original Conditions of Certification **CUL-1** through **CUL-18**, with appropriate revisions, the BSPP would remain in conformity with all applicable laws, ordinances, regulations, and standards. However, cumulative impacts would still be cumulatively considerable and we must therefore consider whether override of those impacts would be justified. That discussion is set forth in the Override section of this proposed document. All other project impacts to cultural resources would be reduced below the level of significance.

Intervenor CRIT provided written testimony from one of its attorneys, Winter King, concerning the experience gained during the construction of the Genesis project and on the basis of that experience suggested changes to the conditions of certification intended to ensure that discoveries of cultural resources would be handled appropriately. In particular, CRIT sought to ensure that Native American monitors would be involved in making decisions about appropriate handling of discovered artifacts during the construction phase. At the evidentiary hearing, commission staff, petitioner and CRIT appeared to agree in principle that the conditions of certification, and more importantly their implementation, ought to facilitate communication among those involved and allow for creativity and flexibility in handling resources discovered during construction.

CRIT's suggestions for modifications to the cultural resources conditions of certification manifest a strong preference for avoidance of cultural resources where feasible. CRIT argues that avoidance is, in fact, mandated by CEQA, citing section 15126.4(3)(b) of the CEQA Guidelines. We agree that avoidance is preferred. However, it is not always practicable or feasible. The testimony of Applicant's witness Kenneth Stein establishes that Applicant is willing to undertake avoidance where it is practicable in the context of a major construction project. (R/T11-19-2013 125:18-126:10.) Furthermore, condition of certification **CUL-5**, as set forth in the stipulation between CRIT and Applicant (TN 201337), and which we adopt, does call for avoidance measures to be described in the Cultural Resources Monitoring and Mitigation Plan (CRMMP):

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. (Ex. 2001, p. 4.3-142)

Avoidance is also inherent in the amendment itself. The amended project reduces the overall footprint by some 3000 acres, thereby leaving any cultural and paleontological resources on those 3000 acres undisturbed. And, at the request of CRIT, provisions for in-situ or onsite reburial have been added to **CUL-5**.

In comments on **CUL-1**, **CUL-6**, and **CUL-7** (Ex. 4007) CRIT voiced its concerns regarding the per-acre mitigation fee, expressed its preferences for avoidance over data collection where feasible, for requiring the use of Native American Monitors during all ground-disturbing activity and for eliminating the use of a compressed Phase II – Phase III approach, and reiterated that compensatory mitigation cannot reduce a project's significant cultural impacts below the level of significance. We have considered these comments in preparing the Conditions of Certification which we adopt herein. We have attempted to balance CRIT's concerns with the realities of constructing a large solar project such as this one.

On November 26, 2013 CRIT and Applicant entered into a written stipulation regarding the wording of conditions of certification **CUL-5**, **16** and **17**. (TN 201337)

The changes to **CUL-5** require the CPM to facilitate review and comment by affected Indian tribes prior to approval of the Cultural Resources Monitoring and Mitigation Plan (CRMMP). The CRMMP will now be required to include policies regarding in-situ or onsite reburial. The CRMMP will include a provision for notification of tribes after a discovery, and steps and timing for addressing an unanticipated discovery. The CRMMP shall be submitted to the CPM at least 30 days prior to the start of ground disturbance, and the CPM shall facilitate review with tribes.

The changes to **CUL-16** include a requirement for CRS/CRM monitoring of all project grading, and require a Native American Monitor (NAM) to monitor all

ground disturbance. Daily monitoring logs shall be provided to any affected tribes that request them. Any request for a decrease in monitoring levels shall be submitted to affected tribes. CRIT also requested the addition of language in **CUL-16** that would make the CPM jointly responsible with the project owner for ensuring that the CRS, alternate CRS, or CRMs prevent construction impacts to undiscovered resources and for providing written responses to comments provided by Native Americans concerning the discovery of Native American Cultural Materials. We have considered those requests and reject them, because these acts, and all acts related to compliance with the Conditions of Certification, are ultimately the responsibility of the project owner. It is the responsibility of the CPM to oversee compliance with the Conditions.

We take this opportunity to emphasize, however, that the CPM's role in ensuring compliance requires active oversight and regular communication. Particularly on projects the size of utility-scale solar, overseeing compliance requires on-the-ground observation of performance, prompt notification of concerns followed up in writing, and clear statements of who is required to do what, and when, in writing, in order to protect these cultural resources.

The changes to **CUL-17** require notification to all tribes that have requested it, of a discovery within 24 hours of CPM notification. The CPM, CRS and BLM are given involvement in providing such notifications. CRIT also requested that Native American Monitors be added to the list of persons with authority to halt construction upon the discovery of resources. NAMs on site will be able to communicate with those persons who can halt construction. This will be sufficient to ensure that NAM's have input into such decisions.

Applicant and Staff disagreed over whether or not to retain condition of certification **CUL-19**, pertaining to the involvement of BLM in implementation of the Programmatic Agreement, set forth in Exhibit 2003. The provision was included in the Final Decision for the Approved Project. Staff explained that its recommendation that the condition be deleted was based upon its perception that the Commission's ability to enforce the conditions of certification could be compromised by **CUL-19's** ceding preemptive authority to the BLM. (Ex. 2001, p. 4.1-32.) However, there is no evidence in the record to indicate that such compromise has occurred. We find that spelling out the BLM's role in managing the lands upon which the project would be built is more likely to be beneficial than to cause any harm, and we therefore retain **CUL-19** as set forth in the Final Decision for the Approved Project.

CRIT filed comments on the PMPD on January 13, 2014. The comment letter indicates that while CRIT appreciates the changes made to the proposed conditions of certification in response to CRIT's concerns, cultural resources impacts may not be fully mitigated. The adopted conditions of certification set forth the Commission's best effort at balancing the need to protect cultural resources with the state's need to achieve its climate and renewable resources goals.

The changes set forth in the stipulated conditions are appropriate and address the concerns raised by CRIT. We adopt the conditions of certification set forth below. These conditions of certification will ensure protection and respect for cultural resources. However, cumulative impacts to cultural resources cannot be fully mitigated and we therefore adopt override findings in the Override section of this document.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Cultural Resources aspects of the amended project do not increase its direct or cumulative environmental effects.
4. Cumulative impacts would not be fully mitigated by implementation of the Conditions of Certification and we must therefore consider whether override of those impacts would be appropriate. This analysis is set forth in the Override section of this document.

## 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 percent 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 one-third 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, and then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.

**Verification:** 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 percent 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 one-third 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 DTCCCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the DTCCCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the DTCCCL documentation and possible NRHP nomination program, and then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.

**Verification:** 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 DTCCCL 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 three of those years in California; and
3. At least three years of experience in a decision-making capacity on cultural resources projects, with at least one of those years in California, and the appropriate training and experience to knowledgeably 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:** Preferably at least 120 days, but in any event no less than 75 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.

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.

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 three days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.

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 required by this Condition.

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.

At least five 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 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, and the 2013 Project Amendment SA 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 lay down 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:** 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.

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.

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.

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.

Within five days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

#### **CUL-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 draft and final versions of a 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 CPM shall provide each draft of the CRMMP to affiliated Native American tribal entities<sup>18</sup> for review and comment. Subsequent iterations of the draft CRMMP and the final CRMMP shall evidence consideration of comments received from said tribal entities, where such comments have been received within 30 days for the initial draft and 7 days for each subsequent draft. 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 DTCCCL programs.

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<sup>18</sup> "affiliated Native American tribal entities" means those tribal entities with which Energy Commission staff initiated consultation under the original siting case and under the consideration of all subsequent amendments to the September 2010 Final Decision for the present project. The list of tribal entities can be found on the project's webpage at [http://docketpublic.energy.ca.gov/PublicDocuments/09-AFC-06C/TN200052\\_20130729T101117\\_Blythe\\_Amendment\\_CEC\\_Tribal\\_Consultation.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/09-AFC-06C/TN200052_20130729T101117_Blythe_Amendment_CEC_Tribal_Consultation.pdf)

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. Explicitly takes into account the perspective of affiliated Native American tribal entities with respect to in-situ or onsite reburial, (unless otherwise prohibited) for the disposition of archaeological and ethnographic resources encountered as a result of the application review process and as a result of project construction and operation.
4. 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 DTCCCL research and on the archaeological and historical literature pertinent to the Palo Verde Mesa, and taking into account potential data constraints that may occur as the result of in-situ or onsite reburial of resources under subsection 3. above; and
  - d. Clearly articulates why it is in the public interest to address the research questions that it poses.
5. 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.
  6. 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.
  7. 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.
  8. 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.
  9. 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.

10. 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.
11. 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.
12. 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.
13. 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.
14. A section that clearly and concisely sets out the flows of authority and work products for **CUL-16**, the Construction Monitoring Program, and sets out explicit communication protocols to facilitate the condition's implementation and notification of affiliated tribal entities.
15. A section that clearly and concisely sets out the flows of authority and work products for **CUL-17**, Authority to Halt Construction; Treatment of Discoveries, and sets out explicit communication protocols to facilitate the condition's implementation and notification of affiliated tribal entities.



16. The contents, format, and review and approval process of the final Cultural Resource Report (CRR) shall be described.

**Verification:** Preferably at least 90 days, but in any event no less than 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for review and approval draft and final versions of a Cultural Resources Monitoring and Mitigation Plan (CRMMP). The CPM shall submit each draft of the CRMMP to affiliated Native American tribal entities for review and comment. Subsequent iterations of the draft CRMMP and the final CRMMP shall evidence consideration of comments received from said tribal entities, where such comments have been received by the CPM within the time frame provided in the condition.

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).

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 BSCP cultural resources activities and requiring curation. Any agreements concerning curation will be retained and available for audit for the life of the project.

**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 site CA-RIV-3419 and thermal cobble feature SMB-P-434. 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 an isolated potential thermal cobble feature (not included in the PQAD) at multi-component site 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 quarry site, CA-RIV-3419, the project would impact and allows an assessment of the significance of the impacts of the project to the quarry site 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. Identify 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 one 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 one-half 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. Draw 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, and would be adequate data recovery. Features with subsurface deposits would be register eligible, and data recovery would ensue.

c. Geophysical Test for Subsurface PQAD Contributing Thermal Cobble Features:

- i. Test, in a one-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 five 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;

d. 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 two acres) of the total district area on the plant site;
- ii. 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 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 CPM of the results of the survey;
- v. Keep field notes and the forms for the survey are sufficient to completely document the geophysical survey;

e. 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.

f. Data Recovery from Thermal Cobble Features:

Data shall be recovered from impacted thermal cobble features. 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 be used for data recovery at SMB-P-434 and the potential thermal cobble feature at multi-component site SMB-M-418. Data recovery activities shall include:

- i. 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;
- ii. Retention of samples of each layer sufficient to submit for radiocarbon assays, and macrobotanical, palynological, geochemical, or other analyses;
- iii. Screening of the balance of each layer through hardware cloth of no greater than 1/8-inch mesh;
- iv. Recordation of these small exposures in drawings and photographs;

v. 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;

vi. 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.

g. 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 (three 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 be 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 PQAD is 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:** 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.

At least 90 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 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 two acres) or a stratified random sample for a mechanical subsurface survey of 2.5 percent of the PQAD located inside the project's boundaries.

1. At least 60 days prior to the onset of BSPP construction-related ground disturbance in Unit 3 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. 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.

2. At least 30 days prior to the start of BSPP construction-related ground disturbance in Unit 3 east 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.
3. 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.
4. 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.
5. 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.
6. 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 and prepares 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
7. 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 SMB-M-214, SMB-H-234, SMB-H-CT-001 and SMB-H-WG-102. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan 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 that 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:** At least 15 days prior to ground disturbance, the project owner shall notify the CPM that data recovery for small sites has ensued.

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.

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-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 plan shall include 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 PPA, 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 DTCCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCCL 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 DTCCCL PI-Historian and the DTCCCL 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 is 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 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:** 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.

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 site SMB-H-404. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include 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 PPA, 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 is 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 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.
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:** 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.

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- 403, and SMB-H-427 on the proposed plant site 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 plan shall include 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 PPA, 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 DTCCCL Historical Archaeologist to assist in the determination of which, if any, of the five historic-period dump sites are contributing elements to the DTCCCL.

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:** 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.

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-287, SMB-H-288, and SMB-H-423. 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 plan shall include 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 PPA, 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 fieldwork.
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 artifact 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 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.
  - 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 fieldwork 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 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:** 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.

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 DTCCCL PI Historian for use in the possible DTCCCL NRHP nomination. The project owner may undertake this task prior to Energy Commission certification of the project.

**Verification:** 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.

Within 15 days after the CPM approves the report, the project owner shall forward it to the DTCCCL 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 DTCCCL PI Historian for use in the possible DTCCCL NRHP nomination. The project owner may undertake this task prior to Energy Commission certification of the project.

**Verification:** 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.

Within 15 days after the CPM approves the report, the project owner shall forward it to the DTCCCL 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:** 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.

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:** 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.

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.

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, prevent construction impacts to undiscovered resources and shall further ensure that known resources are not impacted in an unanticipated manner, monitor full time all ground disturbances:

1. associated with construction-related grading and other earthwork;
2. for the trenches for underground communication lines and the natural gas pipeline;

3. for the holes for the transmission line support structures;
4. 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 all of the ground disturbance described above. 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, and to any affiliated Native American tribal entities that request such logs. 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 and concurrently notify affiliated Native American tribal entities.

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:** 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.

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.

At least 48 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 and concurrently notify affiliated Native American tribal entities.

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 and to any affiliated Native American tribal entities that request such statements.

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.

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.

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 affiliated Native American tribal entities 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.

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. The project owner shall provide written responses to any such comments or information within five business days of their receipt and copy the CPM with such correspondence.

#### **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 affiliated Native American tribal entities, the CPM shall ensure the CRS has notified, within 48 hours, all affiliated Native American tribal entities that expressed a desire to be notified in the event of such a discovery. The CRS shall inform the CPM if there are any barriers to performing the notification.
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:** 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.

Within 48 hours of the discovery of a resource of interest to Native Americans, the CPM shall ensure that the CRS notifies all affiliated Native American tribal entities that expressed a desire to be notified in the event of such a discovery. 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:** 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.

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.

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

Casey Weaver, CEG, testified on behalf of the Staff that the potential is low for significant impacts to the proposed project from geologic hazards during its design life and to potential geologic and mineralogic, resources from the construction, operation, and closure of the proposed project.

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. Sand and gravel resources are present at the site and could potentially be a source of salable resources; however, such materials are present throughout the region such that the BSPP should not have a significant impact on the availability of such resources. There are no other known viable geologic or mineralogic resources at the BSPP site.

Paleontological resources have been documented in the general area of the project and in materials similar to those that are present at the site. The parties agree that potential impacts to paleontological resources due to construction activities will be mitigated through implementation of Staff's proposed Conditions of Certification **PAL-1** to **PAL-7**. (Staff withdrew its proposed Condition of Certification **PAL-8**). (Exs. 1012, p. 21; 2000, pp. 5.2-35—5.2-40; R/T 11-19-2013 86:10--86:13.)

Mr. Weaver testified that the proposed method of insertion of support posts for the solar panels could result in impacts to unknown paleontological resources and proposes Condition of Certification **PAL-9**, requiring surveys and sampling in the area before post insertion, as mitigation. Both Applicant and intervenor CRIT agreed that the insertion of posts could result in impacts to unknown paleontological resources, but disagreed with Staff's mitigation proposal. Applicant's witness, Duane McCloud, points out that the project's smaller footprint and reduced area of mass grading will result in far less overall disturbance to the ground than the approved project. Applicant's written testimony shows that the approved project would have resulted in the disturbance of an estimated 4 million cubic yards of soil that would not have been observed for the presence of paleontological resources; the amended project would reduce this to 440,000 cubic yards. CRIT's position is that it is preferable to leave these resources in the ground than to disturb them by conducting surveys and sampling, even though these resources may be destroyed during post insertion. (Exs. 1012, 2003; R/T 11-19-2013 77:21—89:21.)

Although the insertion of posts could result in destruction of unknown paleontological resources, the evidence shows that the overall impacts to unknown resources are far less severe than those of the approved project. Staff has not offered any testimony that directly addresses this point, going only so far as to say that more of the disturbed resources might have been exposed, and thus available for study, due to mass grading than will be exposed due to the reduced mass grading and post insertion of the amended project. Staff's proposal favors maximizing the availability of disturbed paleontological resources for study—either because they were exposed during construction or through surveys and sampling--over simply leaving these resources where they lie.

In reviewing an amendment of an approved project, our primary focus is to determine whether any of the amended project's impacts will be more severe than those of the approved project. According to the testimony, fewer resources will be disturbed or destroyed overall during construction of the revised project. Accordingly, we reject Staff's proposal that we adopt **PAL-9**. Implementation of this condition would result in the disturbance of resources that may not otherwise be disturbed due to the reduction in mass grading. Furthermore, the reduced footprint and reduction in mass grading will result in a substantial increase in undisturbed area, preserving any paleontological resources in those areas.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. With implementation of the Conditions of Certification set forth below the Geological and Paleontological Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

## **CONDITIONS OF CERTIFICATION**

**GEO-1** The Soils Engineering Report required by Section 1803 of the 2010 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-06C)

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
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Cultural Trainer: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

PaleoTrainer: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

Biological Trainer: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

## **D. WASTE MANAGEMENT**

The testimony of Staff witness Christopher Dennis, PG, indicates that the amended project will comply with applicable LORS and will not cause significant environmental effects. The amended Blythe Solar Power Project would employ photovoltaic technology (PV), which would eliminate the existing approved parabolic trough technology and need for heat transfer fluid (HTF). With the elimination of HTF and the waste management requirements related to this fluid, condition of certification **WASTE-8** is no longer required. (Exs. 1012, p. 11; 2000, pp. 4.13-1—4.13-18; 2003.)

Management of the non-hazardous and hazardous waste generated during construction, operation, and closure of the modified Blythe Solar Power Project would not result in significant adverse impacts under the California Environmental Quality Act (CEQA) guidelines (Appendix G: Environmental Checklist Section XVI - Utilities and Service Systems). The Modified BSPP would be consistent with applicable waste management laws, ordinances, regulations, and standards (LORS) provided that the measures we adopt below are implemented.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Waste Management aspects of the amended project do not create significant direct or cumulative environmental effects.

## **CONDITIONS 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
- B) Identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not); and
- C) 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 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 DELETED**

**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 Mecca II Landfill.

**Verification:** The project owner shall document all project-related solid waste disposal actions to the Compliance Project Manager annually.



## **VII. LOCAL IMPACT ASSESSMENT**

### **A. LAND USE**

Staff's witness Michael C. Baron testified that the modified BSPP would be compatible with existing on-site and nearby land uses and would not conflict with any applicable habitat conservation plan, natural community conservation plan, or biological opinion. The modified BSPP would be consistent with the Riverside County General Plan, Palo Verde Valley Area Plan and the Riverside County Airport Land Use Compatibility Plan. (Ex. 2001, pp. 4.5-1—4.5-13.)

The 2010 Commission Final Decision concluded that the contribution of the BSPP, in combination with the other renewable energy projects proposed in the region, to loss of desert lands, is cumulatively significant.(Ex. 2004.) Lands formerly available for multiple uses such as habitat, open space, grazing, and recreation would no longer be available for those uses once a power plant is constructed. While the modified BSPP would reduce the project footprint from 7,043 acres to 4,070 acres, the modified BSPP would still contribute to a cumulative loss of lands available for multiple use in the Colorado Desert in eastern Riverside County, which also would be significant and immitigable. We must therefore consider whether making override findings would be appropriate. That analysis is set forth in the Override section of this document.

### **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Land Use aspects of the amended project do not create significant direct environmental effects.
4. The cumulative impacts of the approved project are unchanged from those of the revised project. We must therefore consider making override findings. That analysis is set forth in the Override section of this document.

### **CONDITIONS OF CERTIFICATION**

There are no conditions of certification pertaining to Land Use.



## B. NOISE

The testimony of Staff witness Shahab Khoshmashrab indicates that the power blocks, the air-cooled condensers, and associated thermal-power equipment are the main sources of noise and vibration impacts for the approved project. By eliminating the parabolic trough technology (and, thus, these components) and replacing it with the photovoltaic (PV) technology, the modified project would not generate substantial noise during project operations. Also, the project's footprint has been modified and the nearest noise-sensitive receptor (a single-family residence labeled LT) would be much further away from the modified project site boundary than the approved project. (Ex. 2000, pp. 4.6-1—4.6-15.)

Considering the substantially lower operational noise levels expected from the modified project as opposed to the approved project we find that Condition of Certification **NOISE-4** is no longer necessary. **NOISE-4** requires a community noise survey to ensure that the power plant equipment does not exceed a certain level of noise or cause certain types of noise (non-pure tone components). This condition requires an extensive effort to implement, and since the project would most likely not even affect the existing noise level at LT, this condition would not be necessary.

Due to the substantially lower operational noise exposure levels to workers from the modified project, as compared to the approved project, staff believes an occupational noise survey is no longer required and, thus, has deleted **NOISE-5** (Occupational Noise Survey).

Also, due to the elimination of the steam turbines and associated piping, we agree with staff's recommended deletion of Condition of Certification **NOISE-7**, which required mitigation if high pressure steam blows were needed prior to operation of the steam turbine and piping.

Construction-related noise and vibration impacts would also be less than the approved project due to substantially less grading and other construction activities, the elimination of the concrete batch plant previously proposed for the approved project, and the further distance between project construction and LT. Nevertheless, because construction may involve heavy equipment and noisy activities, the conditions of certification related to construction remain unchanged. Because construction and operational noise impacts would be less than those from the approved project, the modified Blythe Solar Power Project (BSPP), if built and operated in conformance with the conditions of certification, would



comply with all applicable noise and vibration laws, ordinances, regulations and standards, and would produce no significant adverse noise impacts on people within the affected area, directly, indirectly, or cumulatively. The conditions of certification provide appropriate mitigation, in the form of good design practice and selection of appropriate project equipment that would avoid any significant adverse impacts.

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Noise aspects of the amended project do not create significant direct or cumulative environmental effects.

## **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 - CONSTRUCTION**

**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-4 DELETED**

**NOISE-5 DELETED**

## CONSTRUCTION RESTRICTIONS

**NOISE-6** During project construction, 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 DELETED**

**NOISE COMPLAINT RESOLUTION FORM**

Blythe Solar Power Project  
(09-AFC-06C)

**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: \_\_\_\_\_ Date: \_\_\_\_\_

(Attach additional pages and supporting documentation, as required).

## NOISE APPENDIX A

### FUNDAMENTAL CONCEPTS OF COMMUNITY NOISE

To describe noise environments and to assess impacts on noise sensitive area, a frequency weighting measure, which simulates human perception, is customarily used. It has been found that A-weighting of sound intensities best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. **NOISE Table A1** provides a description of technical terms related to noise.

Noise environments and consequences of human activities are usually well represented by an equivalent A-weighted sound level over a given time period ( $L_{eq}$ ), or by average day and night A-weighted sound levels with a nighttime weighting of 10 dBA ( $L_{dn}$ ). Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Outdoor day-night sound levels vary over 50 dBA depending on the specific type of land use. Typical  $L_{dn}$  values might be 35 dBA for a wilderness area, 50 dBA for a small town or wooded residential area, 65 to 75 dBA for a major metropolis downtown (e.g., San Francisco), and 80 to 85 dBA near a freeway or airport. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be levels of noise adverse to public health.

Various environments can be characterized by noise levels that are generally considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding average daytime levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Areas with full-time human occupation that are subject to nighttime noise, which does not decrease relative to daytime levels, are often considered objectionable. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (Effects of Noise on People, U.S. Environmental Protection Agency, December 31, 1971).

In order to help the reader understand the concept of noise in decibels (dBA), **NOISE Table A2** has been provided to illustrate common noises and their associated sound levels, in dBA.

**NOISE Table A1**  
**Definition of Some Technical Terms Related to Noise**

Terms	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a Sound Level Meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this testimony are A-weighted.
L <sub>10</sub> , L <sub>50</sub> , & L <sub>90</sub>	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time, respectively, during the measurement period. L <sub>90</sub> is generally taken as the background noise level.
Equivalent Noise Level, L <sub>eq</sub>	The energy average A-weighted noise level during the Noise Level measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 4.8 decibels to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m.
Day-Night Level, L <sub>dn</sub> or DNL	The Average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise at a given location (often used for an existing or pre-project noise condition for comparison study).
Intrusive Noise	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Pure Tone	A pure tone is defined by the Model Community Noise Control Ordinance as existing if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the two contiguous bands by 5 decibels (dB) for center frequencies of 500 Hz and above, or by 8 dB for center frequencies between 160 Hz and 400 Hz, or by 15 dB for center frequencies less than or equal to 125 Hz.

Source: Guidelines for the Preparation and Content of Noise Elements of the General Plan, Model Community Noise Control Ordinance, California Department of Health Services 1976, 1977.

**NOISE Table A2  
Typical Environmental and Industry Sound Levels**

Noise Source (at distance)	A-Weighted Sound Level in Decibels (dBA)	Noise Environment	Subjective Impression
Civil Defense Siren (100')	140-130		PainThreshold
Jet Takeoff (200')	120		Very Loud
Very Loud Music	110	Rock Music Concert	
Pile Driver (50')	100		
Ambulance Siren (100')	90	Boiler Room	
Freight Cars (50')	85		
Pneumatic Drill (50')	80	Printing Press Kitchen with Garbage Disposal Running	Loud
Freeway (100')	70		Moderately Loud
Vacuum Cleaner (100')	60	Data Processing Center Department Store/Office	
Light Traffic (100'), Large Transformer (200')	50	Private Business Office	
Bird Calls	40	Public Library	Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing

Source: Handbook of Noise Measurement, Arnold P.G. Peterson, 1980

### **SUBJECTIVE RESPONSE TO NOISE**

The adverse effects of noise on people can be classified into three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as anxiety or hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise effects in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction, primarily because of the wide variation in individual tolerance of noise.

One way to determine a person's subjective reaction to a new noise is to compare the level of the existing (background) noise, to which one has become accustomed, with the level of the new noise. In general, the more the level or the tonal variations of a new noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

With regard to increases in A-weighted noise levels, knowledge of the following relationships can be helpful in understanding the significance of human exposure to noise.

1. Except under special conditions, a change in sound level of one dB cannot be perceived.
2. Outside of the laboratory, a three dB change is considered a barely noticeable difference.
3. A change in level of at least five dB is required before any noticeable change in community response would be expected.
4. A ten dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response. (Kryter, Karl D., The Effects of Noise on Man, 1970).

**COMBINATION OF SOUND LEVELS**

People perceive both the level and frequency of sound in a non-linear way. A doubling of sound energy (for instance, from two identical automobiles passing simultaneously) creates a three dB increase (i.e., the resultant sound level is the sound level from a single passing automobile plus three dB). The rules for decibel addition used in community noise prediction are:

**NOISE Table A3**

<b>Addition of Decibel Values</b>	
When two decibel values differ by:	Add the following amount to the larger value
0 to 1 dB	3 dB
2 to 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0
Figures in this table are accurate to ± 1 dB.	

Source: Architectural Acoustics, M. David Egan, 1988

**SOUND AND DISTANCE**

Doubling the distance from a noise source reduces the sound pressure level by 6 dB.

Increasing the distance from a noise source 10 times reduces the sound pressure level by 20 dB.

**WORKER PROTECTION**

OSHA noise regulations are designed to protect workers against the effects of noise exposure, and list permissible noise level exposure as a function of the amount of time to which the worker is exposed:



**NOISE Table A4**  
**OSHA Worker Noise Exposure Standards**

<b>Duration of Noise (Hrs/day)</b>	<b>A-Weighted Noise Level (dBA)</b>
8.0	90
6.0	92
4.0	95
3.0	97
2.0	100
1.5	102
1.0	105
0.5	110
0.25	115

Source: 29 C.F.R. § 1910.

## **C. SOCIOECONOMICS**

Staff witness Steven Kerr testified that the amended project will not cause significant socioeconomic effects. However, when considered cumulatively with the other proposed and approved projects, temporary lodging may be constrained in the local and regional study areas, thus contributing to a temporary cumulative impact. Staff does not anticipate that new housing would need to be created to meet the temporary lodging needs of the BSPP and the other cumulative projects. Even with the temporary population increase in the local and regional study area, cumulative construction activities would not necessitate new or expanded public services (police, schools, parks and recreation) in the local study area. (Ex. 2000, pp. 4.8-1—4.8-37.)

BSPP operations would not create a significant adverse socioeconomic cumulative impact. New or expanded law enforcement services would not be necessary and the increased student enrollment would not necessitate the provision of new or expanded school services. Staff does not anticipate that the addition of the BSPP operations workers in the local study area plus the operations workers for the other cumulative projects would result in the need for new or expanded parks and recreation services, particularly when existing and planned housing (cumulative projects) would have considered these services.

The modified project, like the approved project, would benefit the local and regional study areas in terms of an increase in local expenditures and payrolls during construction and operation of the facility, as well as a possible benefit to public finance and local economies through taxation. These activities would have a positive effect on the local and regional economy.

On December 3, 2013 the County of Riverside submitted written comments concerning the socioeconomic impacts of the amended project. We have taken those comments into consideration in making the findings and conclusions set forth herein.

On January 13, 2014, CRIT submitted written comments on the PMPD. In those comments, CRIT asserts that the proposed project has significant environmental justice implications that are not addressed by the PMPD. The amended project's environmental justice impacts were considered by staff in the pertinent sections of the SA, exhibits 2000 and 2001. (Ex. 2000, pp. 1-5 – 1-6.) Those impacts are unchanged from those of the approved project and are therefore not reiterated in

this Decision. This Decision is the supplemental environmental review documentation required by section 25500.1,

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Condition of Certification set forth below is appropriate and will ensure that the project is designed, constructed and operated in accordance with applicable law.
3. The Socioeconomics aspects of the amended project do not create significant direct or cumulative environmental effects.

## **CONDITIONS OF CERTIFICATION**

**SOCIO-1** The project owner shall submit a “No Trespassing” letter to the satisfaction of the Colorado River Station of the Riverside County Sheriff’s Department. The “No Trespassing” letter shall remain on file throughout construction and operation of the project.

**Verification:** At least 30 days prior to the start of construction, the project owner shall provide a copy of the letter to the Colorado River Station of the Riverside County Sheriff’s Department for review and to the CPM for review and approval.

## D. TRAFFIC AND TRANSPORTATION

The testimony of Staff witness John Hope indicates that the modified BSPP has a similar or reduced potential to interfere with the operation of the Blythe Airport because of the following project components:

- Transmission lines,
- Photovoltaic (PV) solar panels, and
- Evaporation ponds.

The approved project had cooling towers and thus the potential for thermal plumes to interfere with aircraft operations. The amended project does not have cooling towers and will not create thermal plumes. As with the approved project, any potential for interference with airport operations can be reduced below the level of significance with the implementation of appropriate conditions of certification. (Ex. 2001, pp. 4.10-1—4.10-22.)

## FINDINGS AND CONCLUSIONS

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Traffic and Transportation aspects of the amended project do not create significant direct or cumulative environmental effects.

## 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 the Department 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, in consultation with the County of Riverside. Repairs and restoration of access roads may be required at any time during the construction phase of the project to assure public safety.

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 DELETED**

**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 DELETED**

**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.

**TRANS-12** The project owner shall use textured glass or anti-reflective coating on all photovoltaic (PV) solar panels.

**Verification:** At least 30 days prior to construction of PV panels, the project owner shall provide documentation that textured glass or anti-reflective coating will be used on all PV solar panels.

**TRANS-13** The project owner shall construct all exposed PV panel support structures with matte or non-reflective surfaces.

**Verification:** At least 30 days prior to installation of PV panel supports, the project owner shall provide documentation showing that matte or non-reflective surfaces will be used on all PV panel support structures.

**GLARE COMPLAINT RESOLUTION FORM**

<b>Blythe Solar Power Project (09-AFC-06C)</b>
<b>COMPLAINT LOG NUMBER</b> _____  <b>Complainant's name and address:</b>   <b>Phone number:</b> _____
<b>Date complaint received:</b> _____ <b>Time complaint received:</b> _____
<b>Nature of complaint:</b>   
<b>Definition of problem after investigation by plant personnel:</b>   
<b>Date complainant first contacted:</b> _____
<b>Description of corrective measures taken:</b>   
<b>Complainant's signature:</b> _____ <b>Date:</b> _____
<b>Approximate installed cost of corrective measures:</b> \$ _____ <b>Date installation completed:</b> _____ <b>Date first letter sent to complainant:</b> _____ <b>(copy attached)</b> <b>Date final letter sent to complainant:</b> _____ <b>(copy attached)</b>
<b>This information is certified to be correct:</b>  <b>Plant Manager's Signature:</b> _____

(Attach additional pages and supporting documentation, as required).

## **E. VISUAL RESOURCES**

The written testimony of Staff witness, Mark R, Hamblin, shows that the change from solar thermal to solar photovoltaic would not require deletion or modification of a visual resources condition of certification in the September 2010 Commission Decision, or require a new condition of certification to address impacts that were not previously analyzed for the approved project. The modified project, like the approved project, would create a substantial direct and cumulative visual impact. The existing conditions of certification will reduce these visual impacts, but like the approved project, these mitigation measures would not reduce impacts to a less than significant level.

Staff identified no federal, state or local government laws, ordinances, regulations and standards (LORS) pertaining to the preservation and protection of visual resources that would be affected by the technology modification and were not previously analyzed in the Commission Decision for the Blythe Solar Power Project. Like the approved project, the modified project would comply with federal and state LORS, but not local LORS. However, the Riverside County LORS pertaining to preservation of the visual character of the landscape do not apply to the BSPP because it will be located entirely upon land managed by the BLM. (Exs. 1012, p. 23; 2001, pp. 4.12-1—4.12-15.)

## **FINDINGS AND CONCLUSIONS**

Based on the evidence, we find and conclude that:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Visual Resources aspects of the amended project create significant direct and cumulative impacts to visual resources. Therefore, 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 determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been 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 Amendment finds that it will have some significant unmitigated environmental impacts. Before we can approve 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.”

## 1. Significant Project Impacts

As identified and discussed in the specific topic sections of this Decision we find that the amended project will have the following significant environmental impacts:

- **Biological Resources.** The contribution of the amended project, in combination with the other renewable energy projects in the region, to the potential to cause impacts to avian species is cumulatively significant. As more projects are added in the region, the likelihood of harm to protected avian species increases. These impacts will be mitigated to the extent possible, but may not be fully mitigated.
- **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 the amended project, in combination with the other renewable energy projects 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.
- **Visual Resources.** The amended 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 the amended project with other existing and proposed energy projects. The transmission line will result in a substantial contribution to cumulative visual impacts in the context of existing cumulative conditions. The amended project'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 amended project, if constructed and operated as proposed, will provide the following benefits to California and its residents:

- 485 MW of renewable energy power, which will assist in meeting California's Renewable Portfolio Standard.
- 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.
- 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.
- Assist the state in meeting its ambitious greenhouse gas reduction targets by generating 485 MW of electricity with vastly lower greenhouse gas emissions than existing fossil fuel burning generating facilities.
- Reduce California's dependence on fossil fuels, a diminishing energy source.
- Provide construction jobs for an average and peak workforce of 341 and 499, respectively, and approximately 15 jobs during operations. Most of those jobs will require highly trained workers.
- 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, the no-project alternative, which would result in construction and operation of the approved project, would result in greater impacts than the amended project.

## 4. Site Characteristics

The 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.

Based upon the above evidence, we find that overriding considerations warrant the approval of the amended project as mitigated through the Conditions of Certification we adopt herein. We further find that the amended 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 project will have the following significant impacts which cannot be mitigated to insignificant levels:
  - a. A cumulatively significant contribution to the potential for impacts to avian species.
  - b. 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.
  - c. 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.
  - d. Degradation of scenic vistas for motorists, recreationists, hikers, and others from various points in the Chuckwalla Valley, McCoy Mountains, and I-10 corridor.
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 485 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 including 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 341 and 499, respectively, and approximately 15 jobs during operations, most requiring highly trained workers.
  - f. 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 amended project is 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. The project is required for public convenience and necessity and 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 amended 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.

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Appendix A: *Exhibit List*

Appendix B: *Proof of Service List*



# ***APPENDICES***



## Exhibit List

Docket: 09-AFC-06C

Project Title: Blythe Solar Power Project - Compliance

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Exhibit Number	Document Title and Description	Disposition
1000	TN # 61148 <a href="#">Palo Verde Solar I, LLC's Petition for Amendment</a> Palo Verde Solar I, LLC's Petition for Amendment	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1001	TN # 65933 <a href="#">Petition for Ownership Transfer from Palo Verde Solar I LLC to Nextera</a> Petition for Ownership Transfer from Palo Verde Solar I LLC to Nextera	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1002	TN # 66026 <a href="#">Palo Verde Solar I, LLC's Petition for Amendment Conversion to PV</a> Palo Verde Solar I, LLC's Petition for Amendment Conversion to PV	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1003	TN # 66027 <a href="#">Palo Verde Solar I, LLC's Petition for Amendment Air Quality Modeling Files</a> Palo Verde Solar I, LLC's Petition for Amendment Air Quality Modeling Files	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1004	TN # 66964 <a href="#">Status Report</a> Status Report	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1005	TN # 67722 <a href="#">Palo Verde Solar I, LLC Numerical Ground Water Flow Model</a> Palo Verde Solar I, LLC Numerical Ground Water Flow Model	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1006	TN # 70318 <a href="#">Blythe Solar Power Project's Revised Petition to Amend</a> Blythe Solar Power Project's Revised Petition to Amend	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1007	TN # 70465 <a href="#">Nextera Blythe Solar Energy Center's Errata to Air Quality for the Revised Petition to Amend</a> Nextera Blythe Solar Energy Center's Errata to Air Quality for the Revised Petition to Amend	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1008	TN # 70476 <a href="#">NextEra Blythe Solar Energy Center, LLC's Comparison of Impacts to State Jurisdictional Waters Figure</a> NextEra Blythe Solar Energy Center, LLC's Comparison of Impacts to State Jurisdictional Waters Figure	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1009	TN # 71305 <a href="#">NextEra Blythe Solar's Response to DR Set 1 (1-19)</a> NextEra Blythe Solar's Response to DR Set 1 (1-19)	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1010	TN # 200108 <a href="#">NextEra Blythe Solar's Response to Data Requests Set 2 (20-25)</a>	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.



Exhibit Number	Document Title and Description	Disposition
1011	TN # 201171 <a href="#">Priority Desert Tortoise Connectivity Habitat Identified by USFWS that Overlaps with Variance Lands in the Final Solar PEIS</a>	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1012	TN # 201193 <a href="#">NextEra Blythe Solar Energy Center LLC's Pre-Hearing Statement and Testimony</a>	Offered by Commission Staff (Staff); Admitted on 11/19/2013.
1013	TN # 201242 <a href="#">Supplemental Testimony Relating To Certificate of Certification BIO-15</a>	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
1014	TN # 201250 <a href="#">Blythe Solar Power Project Guide to Conditions of Certification Table</a>	Offered by Applicant (Applicant - Blythe Solar Power Project ); Admitted on 11/19/2013.
2000	TN # 200629 <a href="#">Blythe Solar Power Project Staff Assessment - Part A (Corrected)</a> Corrected Staff Assessment - Part A	Offered by Commission Staff (Staff); Admitted on 11/19/2013.
2001	TN # 200840 <a href="#">Blythe Solar Power Project Staff Assessment - Part B</a> Staff Assessment - Part B	Offered by Commission Staff (Staff); Admitted on 11/19/2013.
2002	TN # 201190 <a href="#">Staff Response to Comments on the Staff Assessments Parts A and B</a>	Offered by Commission Staff (Staff); Admitted on 11/19/2013.
2003	TN # 201189 <a href="#">Staff's Supplemental Testimony Modifying Conditions of Certification</a>	Offered by Commission Staff (Staff); Admitted on 11/19/2013.
2004	TN # 201249 <a href="#">Blythe Solar Final Decision 2010</a>	Offered by Commission Staff (Staff); Admitted on 11/19/2013.
2005	TN # 201230 <a href="#">Staff's Supplemental Testimony – Air Quality Background Update and Worker's Safety Update</a>	Offered by Commission Staff (Jared Babula); Admitted on 11/19/2013.
2006	TN # 201247 <a href="#">Staff's Testimony of Andrea Martine and Carol Wason re Bio Resources</a>	Offered by Commission Staff (Jared Babula); Admitted on 11/19/2013.
4000	TN # 201179 <a href="#">Intervenor CRIT Exhibit 4000</a> Presidential Memorandum on Tribal Consultation   The White House	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4001	TN # 201180 <a href="#">Intervenor CRIT Exhibit 4001</a> Sustainable Preservation: California's Statewide Historic Preservation Plan, 2013-2017	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4002	TN # 201176 <a href="#">Intervenor CRIT Exhibit 4002</a> Declaration of Priscilla Eswonja	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4003	TN # 201177 <a href="#">Intervenor CRIT Exhibit 4003</a> Declaration of Mamie Harper	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4004	TN # 201178 <a href="#">Intervenor CRIT Exhibit 4004</a> Declaration of David Harper	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4005	TN # 201174 <a href="#">Intervenor CRIT Exhibit 4005</a> SUPPLEMENTAL DECLARATION OF LYLE BALENQUAH IN SUPPORT OF PLAINTIFF'S APPLICATION FOR TEMPORARY RESTRAINING ORDER AND ORDER TO SHOW CAUSE	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4006	TN # 201175 <a href="#">Intervenor CRIT Exhibit 4006</a>	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.

Exhibit Number	Document Title and Description	Disposition
4007	TN # 201188 <b>Intervenor CRIT Exhibit 4007</b> CRIT's Proposed Modifications to Conditions of Certification	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4008	TN # 201191 <b>CRIT Ex. 4008</b>	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4009	TN # 201183 <b>Intervenor CRIT Exhibit 4009</b> Testimony of Wilene Fisher-Holt regarding Impacts of Blythe Project on Cultural Resources	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4010	TN # 201187 <b>Intervenor CRIT Exhibit 4010</b> Opening Testimony of Winter King regarding Lessons Learned from the Unanticipated Discovery of Buried Cultural Material at the Genesis Solar Energy Project	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4011	TN # 201149 <b>Comments of CRIT on the Blythe Solar Power Project Amendment</b>	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4012	TN # 201262 <b>CRIT Exhibit 4012</b> Statement of Weldon B. Johnson, SR.	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
4013	TN # 201263 <b>CRIT Exhibit 4013</b> Statement of Stacia Bailey	Offered by Intervenor (Colorado Indian River Tribes - CRIT); Admitted on 11/19/2013.
5000	TN # 201027 <b>Michael R. Lozeau Comments: LIUNA Comments on Staff Assessment - Part A for the Proposed Blythe Solar Power Project (09-AFC-6C)</b>	Offered by Intervenor (LIUNA Local); Admitted on 11/19/2013.
5005	TN # 201152 <b>Testimony of K. Shawn Smallwood, Ph.D.</b> written testimony	Offered by Intervenor (LIUNA Local); Admitted on 11/19/2013.



## Proof of Service List

Docket: 09-AFC-06C

Project Title: Blythe Solar Power Project - Compliance

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