BLYTHE SOLAR POWER PROJECT

Petition to Amend

Conversion to PV

06.28.12

(09-AFC-6C)

Submitted By:

PALO VERDE SOLAR I, LLC

BLYTHE SOLAR POWER PROJECT

Petition to Amend

Conversion to PV

(09-AFC-6C)

Submitted By:

PALO VERDE SOLAR I, LLC

Submitted to:

California Energy Commission

06.28.12

GALATI | BLEK LLP

455 Capitol Mall Suite 350
Sacramento CA 95814
Tel •916.441.6575
Fax •916.441.6553

June 28, 2012

Mary Dyas
Compliance Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814-5512

Subject: **PALO VERDE SOLAR I, LLC'S PETITION FOR AMENDMENT**
CONVERSION TO PV
BLYTHE SOLAR POWER PROJECT
DOCKET NO. (09-AFC-6C)

Dear Ms. Dyas,

On behalf of Palo Verde Solar I, LLC (PVSI), GalatiBlek LLP hereby submits ten (10) hard copies and ten (10) CDs of PVSI, LLC's Petition for Amendment (Petition) for the Blythe Solar Power Project (BSPP) (09-AFC-6C) to convert the BSPP from concentrating solar thermal to photovoltaic electrical generating technology. This Petition is filed pursuant to California Public Resources Code Section 25500.1.

As described in Section 1 of the Petition, PVSI is currently the subject of bankruptcy proceedings. I have been authorized by the bankruptcy court to prepare and file this Petition on behalf of PVSI. I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to submit PVSI, LLC's Petition for Amendment for the BSPP on behalf of PVSI.

Sincerely,

Scott A. Galati
Counsel to Palo Verde Solar I, LLC

GALATI | BLEK LLP

455 Capitol Mall Suite 350
Sacramento CA 95814
Tel •916.441.6575
Fax •916.441.6553

June 28, 2012

Mary Dyas
Compliance Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814-5512

Subject: **PALO VERDE SOLAR I, LLC'S PETITION FOR AMENDMENT**
CONVERSION TO PV
BLYTHE SOLAR POWER PROJECT
DOCKET NO. (09-AFC-6C)

Dear Ms. Dyas,

On behalf of Palo Verde Solar I, LLC (PVSI), GalatiBlek LLP hereby submits ten (10) hard copies and ten (10) CDs of PVSI, LLC's Petition for Amendment (Petition) for the Blythe Solar Power Project (BSPP) (09-AFC-6C) to convert the BSPP from concentrating solar thermal to photovoltaic electrical generating technology. This Petition is filed pursuant to California Public Resources Code Section 25500.1.

As described in Section 1 of the Petition, PVSI is currently the subject of bankruptcy proceedings. I have been authorized by the bankruptcy court to prepare and file this Petition on behalf of PVSI. I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to submit PVSI, LLC's Petition for Amendment for the BSPP on behalf of PVSI.

Sincerely,

Scott A. Galati
Counsel to Palo Verde Solar I, LLC

Table of Contents

SECTION 1 INTRODUCTION 1-1

1.1 BACKGROUND 1-1
1.2 ORGANIZATION OF THIS PETITION 1-2
1.3 LEGISLATIVE CHANGES TO COMMISSION JURISDICTION 1-3
1.4 PURPOSE AND NEED FOR AMENDMENT 1-3
1.5 PROJECT AMENDMENT BENEFITS 1-3
1.6 SCOPE OF ANALYSIS 1-3
1.7 UPDATES TO THE PROJECT'S CUMULATIVE SCENARIO 1-4

SECTION 2 DESCRIPTION OF PROJECT AMENDMENT 2-1

2.1 GENERAL PROJECT DESCRIPTION 2-1
2.1.1 Description of Approved Project 2-1
2.1.2 Description of Modified Project 2-2
2.2 PHOTOVOLTAIC TECHNOLOGY 2-4
2.2.1 Photovoltaic Modules 2-4
2.2.2 Panel Supporting System 2-6
2.2.2.1 Fixed Tilt System 2-6
2.2.2.2 Single Axis Tracking System 2-6
2.2.2.3 System Foundations 2-7
2.2.3 Panel Orientation 2-7
2.2.3.1 Fixed Tilt System Orientation 2-8
2.2.3.2 Single-Axis Tracking System Orientation 2-8
2.2.4 Solar Field DC Distribution and Power Conversion 2-8
2.2.4.1 DC Distribution 2-8
2.2.4.2 AC Collection 2-9
2.3 SITE ACCESS 2-10
2.4 TRANSMISSION SYSTEM INTERCONNECTION 2-10
2.5 ANCILLARY FACILITIES 2-11
2.5.1 Telecommunications Facilities 2-11
2.5.2 Operations and Maintenance Facility 2-12
2.5.2.1 Operation and Maintenance Building 2-12
2.5.3 Meteorological Station 2-12
2.5.4 Anemometers 2-12
2.5.5 Fencing and Site Security 2-13
2.5.6 Temporary construction workspace, yards, staging areas 2-13
2.6 FIRE PROTECTION 2-14
2.7 WATER SUPPLY AND USAGE 2-15
2.7.1 Water Supply and Use 2-15
2.7.2 Construction-related Water Needs 2-15
2.7.3 Operation and Maintenance-related Water Needs 2-16
2.8 CONSTRUCTION AND OPERATIONS 2-18
2.8.1 Construction Workforce Numbers 2-18
2.8.2 Construction Equipment/Vehicles 2-19
2.8.3 Site Clearing, Grading, and Compaction 2-20
2.8.3.1 Clearing 2-20

2.8.3.2 Grading 2-20
2.8.3.3 Erosion Control 2-22
2.8.4 System Installation 2-23
2.9 PROJECT OPERATION AND MAINTENANCE 2-24
2.9.1 Operation and Maintenance Workforce 2-24
2.9.2 Automated Facility Control and Monitoring System 2-24
2.9.3 Panel Washing 2-25
2.9.4 Road Maintenance 2-25
2.10 HAZARDOUS MATERIALS MANAGEMENT 2-25
2.10.1 Waste and Hazardous Materials Management 2-25
2.10.1.1 Wastewater 2-25
2.10.1.2 Solid (Non-Hazardous) Waste 2-26
2.10.1.3 Hazardous Materials Management 2-28
2.10.1.4 Hazardous Waste 2-31
2.11 FACILITY CLOSURE 2-32

SECTION 3 ENGINEERING ANALYSIS 3-1

3.1 FACILITY DESIGN, EFFICIENCY AND RELIABILITY 3.1-1
3.1.1 Overview of Approved Project 3.1-1
3.1.2 Relevant Modifications to Project Description 3.1-2
3.1.3 Power Plant Efficiency 3.1-2
3.1.4 Power Plant Reliability 3.1-2
3.1.5 Compliance With LORS 3.1-2
3.1.6 Conditions of Certification 3.1-3
3.2 TRANSMISSION SYSTEM ENGINEERING 3.2-1
3.2.1 Overview of Approved Project 3.2-1
3.2.2 Relevant Modifications to Project Description 3.2-1
3.2.3 Compliance With LORS 3.2-1
3.2.4 Conditions of Certification 3.2-2
3.3 TRANSMISSION LINE SAFETY AND NUISANCE 3.3-1

SECTION 4 PUBLIC HEALTH AND SAFETY 4-1

4.1 GREENHOUSE GAS EMISSIONS 4.1-1
4.1.1 Summary of GHG Construction Emissions 4.1-1
4.2 AIR QUALITY 4.2-1
4.2.1 Summary of Construction Emissions 4.2-1
4.2.2 Compliance With LORS 4.2-2
4.2.3 Conditions of Certification 4.2-2
4.3 PUBLIC HEALTH 4.3-1
4.3.1 Summary of Construction Emission Health Risk Analysis 4.3-1
4.3.2 Compliance With LORS 4.3-1
4.3.3 Conditions of Certification 4.3-2
4.4 WORKER SAFETY/FIRE PROTECTION 4.4-1
4.4.1 Project Changes Related to Worker Safety and Fire Protection 4.4-1
4.4.2 Changes in Environmental Impacts 4.4-1
4.4.3 Compliance With LORS 4.4-1
4.4.4 Conditions of Certification 4.4-1
4.5 HAZARDOUS MATERIALS MANAGEMENT 4.5-1
4.5.1 Project Changes Related to Hazardous Materials Management 4.5-1
4.5.2 Changes in Environmental Impacts 4.5-1
4.5.2.1 Construction 4.5-1

4.5.2.2 Operations 4.5-1
4.5.3 Compliance With LORS 4.5-3
4.5.4 Conditions of Certification 4.5-3
4.6 WASTE MANAGEMENT 4.6-1
4.6.1 Project Changes Related to Waste Management 4.6-1
4.6.2 Changes in Environmental Impacts 4.6-1
4.6.2.1 Construction 4.6-1
4.6.2.2 Operations 4.6-1
4.6.3 Compliance With LORS 4.6-2
4.6.4 Conditions of Certification 4.6-2

SECTION 5 ENVIRONMENTAL ANALYSIS 5-1

5.1 BIOLOGICAL RESOURCES 5.1-1
5.1.1 Summary of Project Changes Related to Biology 5.1-1
5.1.1.1 Change in Technology 5.1-1
5.1.1.2 Change in Acreage 5.1-2
5.1.2 Summary of Surveys 5.1-3
5.1.2.1 Summary of Strait-Murphy Properties Surveys 5.1-3
5.1.2.2 Summary of Porter Property Surveys 5.1-4
5.1.3 Changes in Environmental Impacts 5.1-6
5.1.4 Compliance With LORS 5.1-7
5.1.5 Conditions of Certification 5.1-7
5.2 WATER RESOURCES 5.2-1
5.2.1 Project Changes Related to Water Resources 5.2-1
5.2.2 Changes in Environmental Impacts 5.2-1
5.2.2.1 Storm Water: Flooding, Erosion and Sedimentation 5.2-1
5.2.2.2 Water Supply and Use 5.2-2
5.2.2.3 Wastewater 5.2-2
5.2.3 Compliance With LORS 5.2-3
5.2.4 Conditions of Certification 5.2-3
5.3 CULTURAL RESOURCES 5.3-1
5.3.1 Summary of Project Changes Related to Cultural Resources 5.3-1
5.3.2 Summary of Strait/Murphy and Porter Property Surveys 5.3-1
5.3.3 Changes in Environmental Impacts 5.3-2
5.3.3.1 Original Footprint 5.3-2
5.3.3.2 Strait/Murphy Properties 5.3-2
5.3.3.3 Porter Property 5.3-3
5.3.4 Compliance With LORS 5.3-3
5.3.5 Conditions of Certification 5.3-4
5.4 GEOLOGICAL AND PALEONTOLOGICAL RESOURCES 5.4-1
5.4.1 Summary of Project Changes 5.4-1
5.4.2 Changes in Environmental Impacts 5.4-1
5.4.3 Compliance With LORS 5.4-1
5.4.4 Conditions of Certification 5.4-1
5.5 SOIL RESOURCES 5.5-1
5.5.1 Summary of Project Changes 5.5-1
5.5.2 Changes in Environmental Impacts 5.5-1
5.5.3 Compliance With LORS 5.5-1
5.5.4 Conditions of Certification 5.5-1

SECTION 6 LOCAL IMPACT ASSESSMENT 6-1

6.1 LAND USE 6.1-1

6.1.1 Summary of Project Changes Related to Land Use 6.1-1
6.1.2 Changes in Environmental Impacts 6.1-1
6.1.3 Compliance With LORS 6.1-1
6.2 TRAFFIC AND TRANSPORTATION 6.2-1
6.2.1 Project Changes Related to Traffic and Transportation 6.2-1
6.2.2 Changes in Environmental Impacts 6.2-1
6.2.2.1 Construction Traffic 6.2-1
6.2.2.2 Operations Traffic 6.2-1
6.2.2.3 Blythe Airport 6.2-1
6.2.3 Compliance With LORS 6.2-2
6.2.4 Conditions of Certification 6.2-2
6.3 SOCIOECONOMICS 6.3-1
6.4 NOISE AND VIBRATION 6.4-1
6.4.1 Summary of Project Changes 6.4-1
6.4.2 Changes in Environmental Impacts 6.4-1
6.4.3 Compliance With LORS 6.4-1
6.4.4 Conditions of Certification 6.4-1
6.5 VISUAL RESOURCES 6.5-1
6.5.1 Summary of Project Changes Related to Visual Resources 6.5-1
6.5.1 Changes in Environmental Impacts 6.5-1
6.5.2 Compliance With LORS 6.5-1
6.5.3 Conditions of Certification 6.5-1

SECTION 7 POTENTIAL EFFECTS ON PROPERTY OWNERS 7-1

SECTION 8 CONCLUSIONS AND RECOMMENDED FINDINGS 8-1

List of Tables, Figures and Appendices

TABLES

TABLE 2-1 TYPICAL PV PANEL CHARACTERISTICS
TABLE 2-2 OPERATION AND MAINTENANCE-RELATED WATER USE
TABLE 2-3 ESTIMATED GRADING
TABLE 2-4 SUMMARY OF CONSTRUCTION WASTE STREAMS AND MANAGEMENT METHODS
TABLE 2-5 SUMMARY OF OPERATION WASTE STREAMS AND MANAGEMENT METHODS
TABLE 2-6 SUMMARY OF SPECIAL HANDLING PRECAUTIONS FOR LARGE QUANTITY HAZARDOUS MATERIALS
TABLE 4.1-1 GHG CONSTRUCTION EMISSIONS ESTIMATES
TABLE 4.2-1 MODELED MAXIMUM IMPACTS
TABLE 4.3-1 CONSTRUCTION RISK SUMMARY
TABLE 5.1-1 REVISED BIOLOGICAL RESOURCES COMPENSATION ACRES

FIGURES

FIGURE 2-1A TRANSMISSION CORRIDOR ALTERNATIVE 1
FIGURE 2-1B TRANSMISSION CORRIDOR ALTERNATIVE 2
FIGURE 2-2 TYPICAL ANEMOMETER TOWER

APPENDICES

APPENDIX A PV MODULE SPECIFICATIONS
APPENDIX B PRELIMINARY HYDRAULIC EVALUATION
APPENDIX C PRELIMINARY ONE-LINE DIAGRAM AND PRELIMINARY SWITCHYARD LAYOUT
APPENDIX D AIR QUALITY AND PUBLIC HEALTH CONSTRUCTION EMISSIONS AND IMPACT ANALYSIS
APPENDIX E USACOE JURISDICTIONAL DETERMINATION
APPENDIX F LEGAL DESCRIPTION OF ROW
APPENDIX G LIST OF PROPERTY OWNERS

Section 1 INTRODUCTION

1.1 BACKGROUND

Palo Verde Solar I, LLC, is a wholly-owned subsidiary of STA Development LLC (PVSI) and is the current owner of the California Energy Commission (Commission or CEC) Final Decision issued for the Blythe Solar Power Project (BSPP). On April 2, 2012 PVSI filed voluntary petitions for relief under chapter 11 of the Bankruptcy Code in the United State Bankruptcy Court for the District of Delaware (Bankruptcy Court) captioned *In re Solar Trust of America, LLC, et al.*, Case No. 12-11136 (KG). On June 21, 2012 pursuant to the Bankruptcy Court approved auction procedures, NextEra Blythe Solar Energy Center, LLC (NextEra Blythe), a wholly owned subsidiary of NextEra Energy Resources, was selected as the highest bidder for the BSPP. Subject to the satisfaction of closing conditions and approval of the Bankruptcy Court, NextEra Blythe will be the owner of the BSPP. NextEra Blythe filed a Petition For Ownership with the Commission on June 25, 2012. When the acquisition of the BSPP is complete, the Bankruptcy Court approves the acquisition and the Commission has approved the Petition For Ownership transfer, then NextEra Blythe will be the project applicant instead of PVSI and NextEra Blythe will effectively own or have control over all the PVSI Project assets. For purposes of this Petition, however, the owner of the BSPP will continue to be referred to as PVSI.

PVSI files this Petition For Amendment to convert the electrical generating technology from concentrating solar thermal collection (CSP) and steam turbine technology of the BSPP to photovoltaic solar technology (PV). The BSPP is located at 10000 Dracker Drive, Blythe, CA 92225 in Riverside, California, on land administered by the Bureau of Land Management (BLM). A small portion of the project may be located on private land, but most of the project will be located within the boundaries of the previously issued ROW Grant (CACA 048811). The proposed project site is located 8 miles west of Blythe, California and 3 miles north of Highway I-10. Current access to the site is from Exit #232, Airport/Mesa Drive on I-10 via Mesa Drive Road. The BSPP site is located within the Palo Verde Area Plan of Riverside County.

PVSI submitted an Application for Certification (AFC) for the BSPP to the Commission on August 24, 2009 (09-AFC-6). In 2008, PVSI's predecessor-in-interest filed a 299 Right of Way Grant (ROW) Application with the BLM to develop the BSPP on public lands. Consistent with a Memorandum of Understanding between the BLM and the CEC, the agencies prepared a joint environmental compliance document to address the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) for BSPP. Specifically, a Staff Assessment/Draft Environmental Impact Statement (SA/DEIS) was prepared and was circulated for

agency and public review and comment between March 19, 2010, and June 17, 2010. The BLM and the CEC prepared separate final documents for compliance with NEPA and CEQA, respectively. The CEC issued its Final Decision on September 15, 2010. The BLM published the Plan Amendment/Record of Decision (PA/ROD) on October 22, 2010 and issued the ROW Grant on November 4, 2010.

The Final Decision allowed the BSPP to be constructed in Phases. PVSI obtained a Notice To Proceed for construction of Phase 1A of the BSPP on November 4, 2010 and immediately began construction. PVSI continued construction of portions of Phase 1A until August 2011. On August 25, 2011, PVSI sent a letter to the Commission and to BLM outlining that it would cease construction activities on BSPP site and would seek to amend the ROW Grant and the Final Decision to allow construction and operation of PV technology on the site. This letter outlined maintenance activities that would continue on site to ensure site security and prevent off-site environmental impacts. The BLM and Commission approved a maintenance plan and associated activities on September 8, 2011. PVSI has been maintaining the site in accordance with this maintenance plan to date.

1.2 ORGANIZATION OF THIS PETITION

This Section provides an Introduction to the Project; discusses the authority for the Commission to exercise jurisdiction over this Petition; outlines the purpose of need of the Petition; and outlines the benefits from the BSPP after modification.

Section 2 of the Petition describes the modifications proposed to convert the BSPP to PV technology as well as the modifications to the project footprint.

Sections 3, 4, 5 and 6 contain analysis of the proposed modifications comparing the potential environmental impacts from the modified PV configuration to the potential environmental impacts of the original project as approved in the Commission Final Decision. These Sections also include an update of laws, ordinances, regulations or standards applicable to the PV configuration where applicable. Where appropriate each technical section proposes modifications to the Conditions of Certification contained in the Commission Final Decision.

Section 7 discusses any potential effects on nearby property owners.

Section 8 contains conclusions and recommended findings for Commission consideration.

1.3 LEGISLATIVE CHANGES TO COMMISSION JURISDICTION

On October 4, 2011, the Legislature passed and the Governor signed into law SB 226 (Simitian). SB 226 added Section 25500.1 to the Public Resources Code which authorized the Commission to review and amend a License for a solar thermal power plant to use of PV technology. Section 25500.1 applied to projects that met certain requirements. The BSPP meets all of the requirements of Section 2550.1. In accordance with Section (d) of Section 25500.1, the commission shall process a petition submitted under this section pursuant to Section 1769 of Title 20 of the California Code of Regulations.

1.4 PURPOSE AND NEED FOR AMENDMENT

PVSI originally proposed the use of concentrating solar technology for the BSPP site. At the time, PVSI was owned by Solar Millennium AG that had the rights to a particular type of helio-trough design that it was attempting to develop in the United States. Well after the Commission issued its Final Decision in 2010, Solar Millennium AG filed insolvency proceedings in Germany. As discussed in Section 1.1 above, the BSPP is currently being acquired by NextEra Blythe. NextEra Blythe desires to convert the solar generation technology from CSP to PV. This information was not known or anticipated at the time the Commission issued its Final Decision.

1.5 PROJECT AMENDMENT BENEFITS

The BSPP site has received a Commission Final Decision and a BLM ROW Grant. The Amendments proposed in this Petition provide an opportunity to deliver up to 1000 MW of renewable power to Californians without the need to permit a new site. In addition, as described in this Petition the use of PV technology reduces the visibility of project by removing four power blocks and associated 120 foot tall cooling towers, reducing the overall height of the solar collectors by approximately 15 feet, and removing Heat Transfer Fluid from the system. The use of a previously permitted site as reconfigured to further lessen environmental impacts with an approved Large Generator Interconnection Agreement is a responsible approach to helping California achieve its Renewable Portfolio Standards and beyond.

1.6 SCOPE OF ANALYSIS

Pursuant to PRC Section 25500.1, the Commission should process this Petition in accordance with Section 1769 of its regulations and the well-established principles of practice the Commission has followed when processing other petitions. This Petition has been prepared in accordance with those principles, focusing on comparing the

modifications proposed herein to the original project as described in the Commission Final Decision.

1.7 UPDATES TO THE PROJECT'S CUMULATIVE SCENARIO

A Cumulative Scenario for the Project was established during Staff's assessment of the BSPP and ultimately incorporated in the Final Commission Decision and included a list of existing and future foreseeable projects in the vicinity of the Project. As part of this Amendment effort, a search was performed for new reasonably foreseeable future projects with the potential to increase the cumulative impacts described in the Commission Decision. It should be noted that the Area of Potential Effect varies among resource areas and, as such, no standardized area was analyzed. A search of Riverside County and City of Blythe available permit filings has not revealed any additional projects that were not already included in the original Cumulative Impact analysis included in the BSPP Final Decision.

Section 2 DESCRIPTION OF PROJECT AMENDMENT

This Section provides a description of the proposed modifications to the BSPP . The Final Decision describes the BSPP as a nominally rated 1000 MW solar thermal generating plant using four solar fields of concentrating parabolic trough mirrors and four power blocks. The Commission Final Decision includes a description of the linear facilities including a transmission line interconnecting to the Colorado River Substation, primary and secondary access roads, telecommunication facilities, and a natural gas pipeline. For convenience, the term "Approved Project" refers to the BSPP as described in the Commission Final Decision. The terms "Project Modifications" or "Modified Project" refers to the BSPP as proposed in this Petition.

2.1 GENERAL PROJECT DESCRIPTION

2.1.1 Description of Approved Project

The Commission issued a Final Decision for the BSPP which included a description of the BSPP as a solar thermal generating facility that would consist of four adjacent, independent, units of 250 megawatt (MW) nominal capacity each for a total nominal capacity of 1,000 MW. The Approved Project would have utilized solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is brought to high temperature (750°F) as it circulates through the receiver tubes. The HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced. Individual components of the Approved Project included:

- Solar Field & Power Block #1 (northeast);
- Solar Field & Power Block #2 (northwest);
- Solar Field & Power Block #3 (southwest);
- Solar Field & Power Block #4 (southeast);
- Access road from and including upgraded portion of Black Rock Road to onsite office;
- Warehouse/maintenance building, assembly hall and laydown area;
- Telecommunications Lines;
- Natural Gas Pipeline;
- Concrete Batch plant;
- Fuel depot;
- Onsite transmission facilities, including central internal switchyard;
- 230 kV double circuit transmission line interconnecting to the Colorado

River Substation (Gen-Tie Line); and
- Groundwater wells used for water supply.

2.1.2 Description of Modified Project

The Modified Project includes replacing the solar thermal technology completely with PV generating technology. Access to the site will be the same as the Approved Project and the BSPP will continue to interconnect to the regional transmission grid at Southern California Edison's (SCE's) Colorado River Substation (CRS) which is currently under construction.

PVSI proposes to develop BSPP in eight operational phases designed to generate a total of approximately 1,000 MW nominal of electricity. Each phase will consist of approximately 125 MW nominal of electricity as shown on the Preliminary Layouts, Figures 2-1A and 2-1B. Figure 2-1A shows a preliminary project layout with Alternative 1 transmission corridor along the eastern boundary. Figure 2-1B shows a preliminary layout to accommodate Alternative 2 transmission corridor in the center of the site. During operations, all eight units would share an Operations and Maintenance (O&M) Facility, Onsite Substation, access and maintenance roads (either dirt, gravel or paved), perimeter fencing and other ancillary security facilities, and a double-circuit 230 kV gen tie transmission line.

The Modified Project will be located on public land within Bureau of Land Management (BLM) right-of-way (ROW) # CACA – 048811. PVSI has acquired control over two private parcels that could be included as part of the BSPP site. The first property is located near the center of the existing ROW, consists of approximately 160 acres and is known as the Strait-Murphy Property. PVSI now owns the Strait-Murphy Property. The second private parcel is located at the southern boundary near the transmission ROW as it leaves the solar facility ROW. This property consists of approximately 160 acres and is known as the Porter Property. PVSI has acquired an option to purchase the Porter Property.

The total proposed ROW acreage is approximately 7,025 acres including linear facilities outside of the proposed ROW area of approximately 183 acres. Including the 320 acres of private property (Strait-Murphy and Porter Properties), the total acreage of the Modified Project will be approximately 7,345 acres.

Assuming that required transmission upgrades and permits are in place and construction progresses as planned, the first phase of the approved 1,000 MW solar PV energy-generating project could start construction on the Project site as early as mid 2013. Subsequent phases would be constructed in phased stages (each 125 MW unit) moving across the site with potential overlap for start of the next phase prior to

completion of previous phase and would continuing to support the commercial operation dates for the phases.

For ease of review, we have included the following list to identify the primary project modifications to the Approved Project:

- 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 heat transfer fluid (HTF) have been eliminated.
- The HelioTrough energy collection systems have been eliminated and replaced with PV panels configured for either horizontal tracking or fixed tilt operations.
- The substation will be relocated near the center of the disturbance area.
- The large assembly hall will be eliminated.
- The concrete batch plant will be eliminated.
- The natural gas line has been eliminated.
- The water treatment system, associated waste and evaporation ponds have been reduced from eight ponds to two.
- The large drainage structures surrounding the site will be reduced in size or eliminated.
- The amount of mass grading will be reduced.
- The Project footprint could include private land recently acquired by PVSI.
- The Project footprint has been modified to allow two alternative transmission and access road corridors to accommodate the NextEra McCoy and the EnXco Projects proposed to the north of the BSPP.
- A minor modification to a portion of the BSPP transmission line ROW in area of south of I-10 to accommodate NextEra McCoy Project and the EnXco McCoy Project transmission line interconnections to the CRS.
- Water use during constructions will be reduced from approximately 4,100 AF to 3,500-4,000 AF during the duration of construction.
- Water use during operations will be reduced from approximately 600 AFY to between 60 to 88 AFY.

The list above largely encompasses the items that were eliminated or reduced by the switch in technology from parabolic trough/concentrating solar thermal to PV technology. There are new elements of the Modified Project related to the PV technology (e.g., inverters, solar panels, an O&M building, etc). These elements and the currently proposed PV project are described in greater detail in this Section of the Petition.

2.2 PHOTOVOLTAIC TECHNOLOGY

The BSPP will involve the installation of PV modules with the capacity to generate a total of 1,000 MW of power under peak solar conditions. This Petition is based on current technology and installation methodology. Inverter hardware will be located in each Power Conversion Station (PCS), which will convert the direct current (DC) electric input into grid-quality alternating current (AC) electric output.

The PV modules that make up the Inverter Blocks have the capability to convert the sun's energy into DC electricity, each producing a relatively small amount of electricity, about several hundred watts each at rated conditions. Modules are electrically connected in series and parallel arrangements. A series arrangement increases the collective output voltage and a parallel arrangement increases the current to the desired levels for the DC collection system.

The modules being considered for this Modified Project are produced by a number of manufacturers of silicon crystalline and thin film modules. This technology is changing rapidly primarily in the areas of cost and efficiency. For reasons of availability to support the Modified Project delivery requirements and to allow PVSI to capitalize on the latest technological advances, multiple sources might be utilized. At this time PVSI has not selected whether it will install a Fixed-Tilt or Single-Axis Tracking modular system or a combination of both systems. While both systems are similar in how they generate and distribute electricity, the orientation and collection of the sun's energy is different. Appendix A contains specifications for several types of PV modules and racking systems.

2.2.1 Photovoltaic Modules

The solar PV modules, or panels, convert the solar energy into direct current. Different materials display different energy generation efficiencies; higher efficiency panels produce more electricity per given area, but generally cost more per panel area. Materials commonly used for PV solar cells include monocrystalline silicon, polycrystalline silicon, amorphous silicon, cadmium telluride, and copper indium selenide/sulfide. Several of the PV cells currently available are manufactured from bulk materials that are cut into very thin wafers, i.e., between 180 to 240 micrometers thick. Others are constructed from thin-film layers. PVSI is considering the installation of both polycrystalline and cadmium telluride solar cells. Both technologies are proven and viable for utility-scale PV plants. Characteristics of typical panels are given in Table 2-1.

TABLE 2-1
TYPICAL PV PANEL CHARACTERISTICS

Typical Panel Physical and Electrical Characteristics	Thin Film (CdTe) (First Solar FS Series 3)	Polycrystalline (Yingli Solar YGE 280 Series)
Length	1.2 m	1.9 m
Width	0.6 m	0.99 m
Weight	12 kg	26.8 kg
Cell Type	CdS/CdTe semiconductor, 154 active cells	72 multicrystalline
Frame Material	None	Anodized aluminum alloy, silver, clear
Cover Type	3.2 mm heat strengthened front glass laminated to 3.2mm tempered black glass	Low-iron tempered glass
Nominal Power	85 W	290 W
Efficiency	~12%	~15%
Voltage at Pmax	48.5 V	35.8 V
Current at Pmax	1.76 A	8.10 A
Open Circuit Voltage	61.0 V	45.3 V
Short Circuit Current	1.98 A	8.62 A
Maximum System Voltage	1000 V DC	1000 V DC
Temperature Coefficient of Pmpp	-0.25%/°C	-0.45%/°C

The system would incorporate high-efficiency commercially available solar PV panels that are Underwriters Laboratory (UL)-listed or approved by another recognized testing laboratory. By design, the solar PV panels would absorb sunlight to maximize electrical output and use anti-reflective glass. Due to the limited rotation angles, the solar PV panels have no potential for reflecting the sun's rays upon any ground-based observer off-site. These panels would be protected from impact by tempered glass, and would have factory applied ultraviolet (UV) and weather-resistant "quick connect" wire connectors.

Silicon is the traditional material choice for PV panel cells and PVSI is considering polycrystalline silicon PV modules for use at the BSPP. A CdTe solar panel uses solar cells constructed in a thin semiconductor layer (also known as a "thin film") to absorb and convert sunlight into electricity. PVSI is also considering the use of thin film CdTe panels as one of its technology options. If thin film CdTe panels are used, PVSI would ensure that the vendor offers a PV module recycling program through which any module may be returned for recycling.

PV modules can be mounted together in different configurations (also referred to "arrays") depending on the equipment selected. The BSPP arrays primarily would be organized into approximately 2 MW blocks, with some additional arrays configured in smaller blocks to utilize land space efficiently. Although the acreage of each block would depend on the technology, spacing, mounting equipment, and other design criteria subject to change in detailed engineering, each full-size block is expected to cover approximately 15 acres.

Multiple modules are connected in series, and groups of these series-connected modules in turn are connected to a DC to AC inverter, which converts the panel DC output to AC. Different manufacturers utilize different PV technologies, so the panel size and wattage rating varies between manufacturers. The PV modules will be electrically connected by wire harnesses and combiner boxes that collect power from several rows of modules and feed a PCS via underground DC cables. Inverter hardware located in each PCS converts the DC electric input into grid-quality AC electric output. A transformer then steps up the voltage of the array output for on-site transmission of the power to the PV Combining Switchgear (PVCS). Overhead or underground lines then take the electricity to the Onsite Substation where the voltage is stepped up and routed to CRS via the Gen-Tie Line. The PCS and transformer will be located within each PV block, and will be housed on concrete vaults, slabs or pier foundations.

2.2.2 Panel Supporting System

2.2.2.1 Fixed Tilt System

A fixed tilt racking system is supported by vertical steel posts that are spaced about 12 feet apart. The support posts generally project 5 to 6 feet above the ground and are vibrationally driven to a roughly equivalent depth into the ground. The fixed tilt system will not use permanent foundations enabling complete removal when the BSPP is decommissioned. A fixed tilt system can follow the terrain and to account for ground surface differences, simplifying grading. The support posts may vary in height above the ground surface to accommodate the terrain. The height of the structure will be approximately 9 feet depending on the tilt angle selected.

2.2.2.2 Single Axis Tracking System

Either of two types of single-axis tracker systems could be selected for the BSPP. Tracker Option 1 is a “ganged system” that would use one motor to control multiple rows of PV modules through a series of mechanical linkages and gearboxes. By comparison, Tracker Option 2, a stand-alone tracker system, would use a single motor and gearbox for each row of PV modules. 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. Each tracker holds 30 to 50 PV modules mounted on a metal framework structure. The steel structure would be able to withstand high-wind conditions (up to 90 miles per hour), site-specific wind gust and aerodynamic pressure effects, and seismic events.

The drive unit typically consists of a bi-directional AC motor or a hydraulic system utilizing biodegradable fluid. The drive unit would be connected to an industrial-grade variable-frequency drive that translates commands from the control computer.

The tracker controller is a self-contained industrial-grade control computer that would incorporate all of the software needed to operate the system. The controller would include a liquid crystal display monitor that displays a combination of calibration parameters and status values, providing field personnel with a user-friendly configuration and diagnostic interface. The monitor would enable field adjustment, calibration, and testing.

2.2.2.3 System Foundations

Depending on the final PV technology and vendor selected, the design of the tracker support structures could vary. Typical installations of this type are constructed using steel piles or concrete foundations. Steel piles may be driven, screwed, or grouted. Driven steel pile foundations typically are galvanized and used where high load bearing capacities are required. The pile is driven using a hydraulic ram where up to two workers are required. 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. Screw piles, if used, would be driven into the ground with a truck-mounted auger requiring two or three people. Screw piles create a similar soil disturbance footprint as driven piles. Grouted steel piles, if used, would require pre-drilling with auger equipment so that the pile could be inserted into the cleaned hole. The pile then would be grouted into place from bottom to top until grout flows out of the top of the hole. Soil disturbance would be the same as the previous steel pile descriptions with additional disturbance from the soil removal and insertion of grout at the pile location. 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.

The spacing between the rows of tracking units or fixed mounts is dependent on site-specific features and would be identified in the final design. PVSI's preliminary configuration indicates the spacing at approximately 34 feet between rows (post to post), which allows at least 20 feet of clearance for maintenance vehicles and panel access.

2.2.3 Panel Orientation

The arrays and PCS would be accessible by two access corridors, one in a north-south direction every third block (approximately 3,000 feet) of nominal 24 foot width and the

other in an east-west alignment passing every PCS unit of nominal 16 foot width. These access corridors would consist of unpaved compacted road base and would be used only as necessary during operation and maintenance activities.

2.2.3.1 Fixed Tilt System Orientation

The fixed tilt system employs a support table to which the modules are attached. The support table is set at a fixed tilt angle, typically 20 to 30 degrees from horizontal, and facing south. Preliminary designs for the BSPP anticipate a 30 degree tilt angle.

2.2.3.2 Single-Axis Tracking System Orientation

If a single-axis tracking system is employed the tracker assembly is fitted with a torque tube that attaches to the support posts. Each tracker assembly consists of a steel torque tube, on which rests the supporting frames for the PV modules. The wiring for the PV panels is also attached to the torque tube assembly. The single-axis tracker system employs controlled movement to tilt the PV panels so they face the sun and the assembly is oriented to allow the panel to track the sun in an east to west direction. This system aligns the solar PV modules toward the sun through the use of electric drives or actuators. In order to maximize electrical output and minimize shadowing of the panels, the tracker controllers turn the panels to face the sun at all times during the day and over the year, while avoiding shadowing on the adjacent string of panels. The method employed to avoid shadowing the adjacent panels in the early morning and late afternoon hours of operation is called “back-tracking”. The single-axis tracker control system also communicates with, and receives instructions from, the central control room via the Supervisory Control and Data Acquisition (SCADA) system.

As discussed above, PVSI has not selected the specific PV modules nor has it decided on whether a Tracker System, Fixed Tilt System, or combination of the two systems will be installed. As described in Sections 3, 4, 5, and 6 the potential effects from each system is analyzed and PVSI is requesting the Final Decision be amended in such a way as to allow the specific combination of technologies to be selected prior to construction without the need for filing another amendment.

2.2.4 Solar Field DC Distribution and Power Conversion

2.2.4.1 DC Distribution

The PV modules would be electrically connected in series by wire harnesses that conduct DC electricity to combiner boxes. Each combiner box would collect power from several rows of modules and feed a PCS via cables placed in covered underground trenches (or within above ground cable trays or conduits in limited circumstances where underground trenching is determined not to be practical). The DC trenches would be

approximately 3 feet deep and from 1.5 to 2.5 feet wide. The bottom of each trench would be filled with clean fill surrounding the DC cables and the remainder of the trench would be back-filled with native soil and compacted to 90 percent (95 percent when crossing under roadways). Power screeners could be used on site for a limited period of time (less than 1 year) to extract the required clean fill from native soils for use as bedding material in the trenches. A power screener is a motorized piece of equipment that uses moving screens to filter soils to a particular granularity.

Each PCS comprises an inverter package consisting of multiple inverters connected to adjacent transformers. An overhead shade would cover the inverters or a common equipment enclosure would include multiple inverters. The individual inverter packages would be approximately 7 feet tall, and the transformer exterior to the enclosure would be approximately 6.5 feet tall.. The overhead shade would be 10 to 12 feet tall. The equipment enclosure, if utilized, would be up to approximately 35 feet long by 10 feet wide by 10 feet tall. In the PCS, the inverters would change the DC output from the combiner boxes to AC electricity. Integrated with the inverter, a data acquisition system (DAS) would utilize a data logger and sensors to record AC power output. Other integrated components would include equipment to record weather conditions, including ambient temperature measured in degrees Celsius (°C), incoming solar radiation measured in watts per square meter (W/m^2), and wind speed measured in meters per second (m/s). The DAS would enable system data transfer and performance monitoring via the proposed O&M facility.

The resulting AC current from each individual inverter would be routed through underground AC cables (or within above ground conduits in limited circumstances where underground trenching is determined not to be practical) to an oil-filled, medium voltage, step-up transformer positioned within secondary containment. Based on preliminary design, the 265 volt output from an inverter would be stepped up (increased) to the desired substation feed voltage of 34.5 kV by the transformer. The medium-voltage transformer would be placed on a pre-cast concrete pad or other foundation delivered by flatbed truck during construction. The medium voltage collection circuits would be installed underground to the substation in trenches that would be approximately 3 feet deep with pole-mounted above-ground circuits possible on the final "home runs" to the substations. The medium voltage cabling would create multiple collection circuits that would carry the electricity from the solar field to the unit's substation.

2.2.4.2 AC Collection

Multiple PCS blocks (approximately 10 MW total) would form a lateral configuration and transmit the AC power at 34.5 kV via aboveground double circuit monopoles or underground lines in covered trenches (or within above ground conduits in limited

circumstances where underground trenching is determined not to be practical). Laterals would be combined into an aboveground or underground feeder line (24 to 26 MW) that would transmit the AC power to the Power Distribution Center (PDC) at the substation. As applicable, AC trenches would be approximately 3 feet deep and from 8 inches to 6.5 feet wide and also would be used to house fiber optic cables for communication. The bottoms of the trenches would be filled with sand surrounding the fiber optic cables, and the remainder of the trench would be back-filled with native soil and compacted.

The on-site electrical collection system is designed to minimize electrical losses within the BSPP prior to delivery to the On-Site Substation. At the Onsite Substation, the voltage of the Solar Facility-generated electricity will be stepped up to interconnect with the SCE regional transmission grid at the CRS.

2.3 SITE ACCESS

The Modified Project will utilize the same existing roads to reach the site as described in the Final Decision. Access to the BSPP will be via a new road (Dracker Drive) heading north from the frontage road. Dracker Drive will be accessed from a [may not need to be improved] section of Black Rock Road, along I-10, from the plant access road to the Airport/Mesa Drive exit. As part of the Notice to Proceed issued for BSPP Phase 1A of the CSP design, PVSI has already installed Desert Tortoise exclusionary fencing and conducted clearing and grubbing activities within the entire length of Dracker Drive starting at its intersection with Black Rock Road into the project site.

2.4 TRANSMISSION SYSTEM INTERCONNECTION

The Gen-Tie route remains largely unchanged from the Approved Project. It will proceed in a southerly direction, crosses over Interstate 10, and turns westward to the CRS, which is currently under construction. The metering point will be located in the switchyard on the Project site. The gen tie line will be owned and operated by PVSI. The only modification to the route will be a slight shift southward of a portion where the route turns west to accommodate future planned transmission lines.

The 230 kV double circuit transmission line will be constructed on self-supporting monopole structures up to approximately 145 feet high, except where FAA regulations and Riverside County Airport Land Use Commission (RCALUC) guidelines near the airport require shorter and/or H-frame structures. An area of approximately 200 by 200 feet (0.9 acre) per structure may be temporarily disturbed during construction.

The required right-of-way (ROW) width for the gen tie is approximately 120 feet. Where larger H-frame structures are used it is approximately 250 feet. The average span length between the transmission structures vary from approximately 800 feet for the 70-foot tall H-frame structures up to 1,200 feet for the self-supporting tubular steel 145-foot

tall monopole structures. The gen tie line will be constructed using "strong" tubular towers at the cornering points of the line, which will have sufficient strength without guy wires. PVSI spent significant time in 2010 working with the FAA and RCALUC to minimize aviation-related impacts created by the project and its gen tie structures. The variation in height and other items were incorporated into the gen tie design to accommodate FAA and RCALUC concerns. It should be noted that the change in technology to PV reduced other aviation-related concerns. For example, the removal of the Air Cooled Condensers will eliminate prior concerns relating to upward thermal plume potential effects on aircraft. The switch in technology also removes the presence of Heat Transfer Fluid at the site which significantly reduces the fire hazards of the proposed project.

The Project was included in the "Transition Cluster" in the new GIPR process. The Phase One Study results for the Transition Cluster were released in August 2009. The Phase Two Study results for the Transition Cluster were released in July 2010. CAISO, SCE and the Applicant executed a Large Generator Interconnection Agreement (LGIA) in November 2010, which was approved by the Federal Energy Regulatory Commission (FERC) in March 2011. SCE and CAISO are currently reviewing the effect of switching solar technologies and whether that impacts the previous interconnection studies. Once this evaluation is complete, the LGIA will be amended to address the technology switch. The LGIA amendment, once executed, will require FERC review and approval.

2.5 ANCILLARY FACILITIES

2.5.1 Telecommunications Facilities

The Modified Project switchyard would also require the same new telecommunication infrastructure as originally approved. The telecommunication facilities will be installed to provide a protective relay circuit and a SCADA circuit together with data and telephone services. Voice and data communications for plant operations will be installed for use during construction and operations. The routing for this cable will end at the existing infrastructure near Mesa Drive. In addition, the BSPP has two other telecommunications lines required by CAISO to provide operational data to the CRS. The primary transmission-related telecommunications line will be strung overhead along the same poles as the 230 kV gen-tie line to the CRS. The redundant transmission-related telecommunications cable will be buried cable similar to the BSPP's telecommunications cable. The routing for both of the buried telecommunications cables will be adjacent to the site access road for the portion north of I-10. The redundant telecommunications line continues south of I-10 to the Colorado River Substation following the route of the gen-tie line, while the BSPP's telecommunications cable follows Black Rock Road to Mesa Drive.

2.5.2 Operations and Maintenance Facility

2.5.2.1 Operation and Maintenance Building

The BSPP would likely include an approximately 3,000-square-foot O&M building located on BLM-administered land near the center of the site and will 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. The administration area would be air conditioned and include offices, conference rooms, a break room, rest rooms, and locker rooms with showers.

The building would be supported on reinforced concrete mat foundations or individual spread footings as determined during detailed design. Excavation for the footings would be approximately 2 feet deep. Excavation within the perimeter of the building would be approximately 1 foot deep. An aggregate or stone base would be laid after excavation. The floor would consist of a 6-inch reinforced concrete slab. Concrete for this slab would come from Blythe.

The O&M building would be a pre-engineered metal building approximately 17 feet high at its peak with a neutral-colored metal siding and roof to minimize visual impact. The building's maintenance area would include roll-up doors to provide equipment access as well as personnel access doors.

The proposed SCE distribution line would provide electrical service to the O&M building. Telecommunications would be provided by a new fiber optic line constructed at the same time as the distribution line.

An approximately 10,000-square-foot parking area would be provided at the O&M building.

2.5.3 Meteorological Station

The BSPP will not modify its Approved meteorological station.

2.5.4 Anemometers

Depending on the final design of the equipment, the solar arrays may be installed with tracker anemometer towers, which measure and communicate wind speed data to the facility control room for solar array panel tracker positioning in the event of high winds. Each tower measures approximately 30 feet in height, and would be installed within the arrays within the facility site. Figure 2-2 shows a typical tracker anemometer tower.

2.5.5 Fencing and Site Security

For public safety and site security, the BSPP would have fencing around the site and access will be controlled via gates located at the entrances to the facility. The main site gate would be either a motor-operated swing or rolling-type security access gate, and would be monitored through a security camera, swipe card, or other mechanism that would control and monitor access. There will be a guard shack at the main facility gate. Access through the main gate would be controlled during construction and operation of the BSPP to prevent unauthorized access to the solar plant site. All facility personnel, contractors, and visitors would be logged in and out of the facility through the main gate. 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 be installed around the solar plant site perimeter, substations, and around the evaporation pond described in accordance with the existing Conditions of Certification. Individual units may be fenced with perimeter fencing as the construction and operation of the facility is phased. Security fencing would be chain-link, approximately 8 feet tall, with 3-strand barbed wire. Some modifications would be needed in areas of stormwater inflow and outflow from the solar field to allow for high flow events. The security fencing would be constructed slightly inside the solar plant site boundary to allow room for on-foot fence maintenance on the outside of the fence if necessary. Fencing would be designed to resist all wind or other loads imposed on the fence. Posts would be spaced a maximum of 10 feet apart. Tortoise fencing would be installed 1 foot below the ground surface and 2 feet above ground surface, using a fencing type recommended by USFWS and in accordance with the existing Conditions of Certification.

2.5.6 Temporary construction workspace, yards, staging areas

Temporary construction facilities will be built for materials storage, storage of equipment, for field fabrication facilities, and a construction office complex for employee work areas on the project during construction. Additionally, there will be a number of construction staging areas within the site boundaries that will be utilized throughout the approximately 48-month Project construction period and then decommissioned and/or replaced by arrays. Construction area lighting will be provided.

The staging areas will include material laydown and storage areas and an equipment assembly area. During construction, the area near the location of the O&M facility will also contain a guard shack, construction trailers, construction worker parking and portable toilet facilities that will serve the Project's sanitation needs during construction.

Temporary construction fencing will surround this area and the guard shack will be manned to provide security during construction. Additionally, the project will no longer need the large assembly hall structure originally planned to assemble the HelioTrough structures.

In addition to the permanent plant roads and parking, construction roads and parking will be required to provide access to construction facilities and the laydown area. Construction parking space will be provided near the construction office complex. These temporary roads may be all weather gravel surfaced and of sufficient width and location to accommodate efficient use and traffic pattern. The parking area will have barriers to control parking pattern and locations.

2.6 FIRE PROTECTION

Fires are most likely to be introduced from human activity, and also could occur as a result of lightning strikes or equipment malfunctions. Project-related fire-protection activities would be taken to limit personnel injury, property loss, and Project downtime resulting from a fire. During construction, 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) would designate responsibilities and actions to be taken in the event of a fire or other emergency during construction. The EAP, including fire prevention and suppression, and a worker safety plan would be provided to BLM and local fire departments for approval before the receipt of a Notice to Proceed (NTP). During operation and maintenance of the 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 a 20,000-gallon raw and fire water storage tank located on the solar plant site near the O&M area.

To decrease the risk of fire during operation and maintenance of the Project, all vegetation underneath the panels would be managed via either mechanical mowing/trimming or with a BLM-approved herbicide in accordance with guidance provided in the Solar PEIS; Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States and the Final Vegetation Treatments Programmatic Environmental Report (PER) (BLM, 2007).[1] A pre-emergent herbicide would be applied in the spring,

[1] The Record of Decision associated with the PER (72 FR 57065-01), published October 5, 2007, outlines the herbicides that are approved for use on public lands, including 14 herbicides with the following USEPA registered active ingredients: 2, 4-D, bromacil, chlorsulfuron, clopyralid, dicamba, diuron, glyphosate, hexazinone, imazapyr, metsulfuron methyl, picloram, sulfometuron methyl, tebuthiuron, and triclopyr identifies

and spot foliar applications may be used throughout the year to manage invasive vegetation.

The Final Decision outlines that Riverside County Fire Department would provide fire protection services to the BSPP. At this time PVSI is coordinating with both Riverside County and the City of Blythe to ensure that appropriate measures will be taken to control the risk of fire and to ensure the proper level of service is provided. With the elimination of the risks associated with use of Heat Transfer Fluid, it is likely that the impacts to Riverside County will be reduced from previously analyzed and it may be that the City of Blythe Fire Department can adequately provide fire protection services.

2.7 WATER SUPPLY AND USAGE

2.7.1 Water Supply and Use

The BSPP Final Decision allowed the construction of several wells to produce up to 600 AFY for operations and up to 4,100 AFY. Up to three wells are anticipated for the Modified Project and would be constructed in the same manner as outlined in the Final Decision.

Water from the proposed wells would be tested for and meet the domestic water quality and monitoring standards for constituents as required by the California Code of Regulations (22 Cal. Code Regs. §64400.80 et seq.). Regulated wells must be sampled for bacteriological quality once a month and the results submitted to the California Department of Health Services (DHS). The wells also must be monitored for inorganic chemicals once and organic chemicals quarterly during the year designated by the DHS. DHS would designate the year based on historical monitoring frequency and laboratory capacity. PVSI would sample and conduct groundwater quality monitoring consistent with the Waste Discharge Requirements issued as part of the Final Decision.

2.7.2 Construction-related Water Needs

Construction-related water use would support site preparation (including operation of a portable batch plant, if needed) and grading activities. 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

---

the states where the active ingredients are approved. It also identified six herbicide active ingredients that are not permitted for use BLM lands unless a need is shown by the BLM and updated risk assessments for human health and ecological risks are assessed. The six precluded active ingredients are: 2, 4-DP, asulam, atrazine, fosamine, mefluidide, and simazine.

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. During the approximately 48-month construction period for all units, an estimated total of between 3,500 and 4,000 acre-feet of water will be needed for such uses as soil compaction, dust control, and sanitary needs for construction of the BSPP, depending on the configuration selected. The majority of the construction water use would occur during site grading operations. Water will be needed for dust abatement and moisture conditioning of soils to facilitate overland travel during construction of the transmission line for the various alternatives. Water will be stored onsite during construction using either temporary construction ponds or tanks.

Drinking (potable) water would be supplied for construction workers on-site, and is estimated to be approximately 10,000 gallons per month (approximately 0.5 acre-foot per year (AFY)), varying seasonally and by work activities. The potable water could be brought to the site by tanker truck, or groundwater could be used with a package water treatment system to treat the water to meet potable standards.

2.7.3 Operation and Maintenance-related Water Needs

Water quality is expected to be unsuitable for potable use without treatment, with between 730 and 3,100 milligrams per liter of total dissolved solids. Consequently, PVSI is considering either options for treatment of groundwater or the importation of trucked potable water to meet the Project's potable water requirements for operation and maintenance. If the groundwater option is selected, water would be treated with a conventional package water treatment system to assure that any drinking water meets potable standards.

Either a reverse osmosis/electrodeionization (EDI) system or a deep bed demineralizer system would be used for other (non-drinking water) purposes. The water treatment system design has not been developed, but could include either a trailer-mounted water treatment system or a free-standing facility. The water treatment system would supply water for the BSPP for the purposes and in the amounts indicated in Table 2-2.

A trailer-mounted water treatment system is a totally enclosed, self-contained, containerized water treatment system. This system would include filters and demineralizer vessels. These systems typically are leased with a service contract, contain all the necessary supplies for operation, and are taken off-site for the regular regeneration and periodic maintenance that is required. No wastewater discharge is expected.

TABLE 2-2
OPERATION AND MAINTENANCE-RELATED WATER USE

Water Use		PV Module Cleaning, Dust Control (1)		Potable water (2)	
Solar Field Unit		**Per Unit**	**Total**	**Per Unit**	**Total**
Annualized Average	Rate (gpd)	6,700 – 9,800	53,600 -78,400	138	1104
Estimated Peak	Rate (gpd)	33,500 – 49,500	268,000 – 396,000	230 -450	1,840 - 3,600
Estimated Annual	Use (AF)	7.5-11	60-88	0.5	2

The water treatment area would be constructed near the middle of the solar plant site. It would be a roughly square area up to a maximum of 3 acres excluding any area needed for the evaporation ponds if utilized. The water treatment area would contain the water treatment system and water storage area. A free-standing water treatment facility would contain different equipment from the trailer-mounted system, and be based predominately on reverse osmosis treatment. It would be constructed on site in an enclosure for permanent use. The enclosure would be a pre-fabricated steel building on a concrete foundation with a maximum height of 17 feet. Water treatment equipment would include pumps, filters, biocide or ozone injection, and a reverse osmosis/EDI system. The water treatment facility would house the filter replacements and tools needed for periodic maintenance of the system. Wastewater discharge would be non-hazardous, have a maximum quantity of up to 56 gallons per minute (gpm), and be produced primarily from the reverse osmosis reject. One or more on-site netted evaporation ponds (up to 8 acres total) would be required for disposal of the wastewater and would be constructed, operated and maintained, and ultimately removed from the water treatment area within the solar plant site boundary.

There would be three tanks on site for the storage of the raw fire water, potable water, and demineralized water for the BSPP. The raw water tank storage capacity also would provide the fire supply. This tank would hold up to 20,000 gallons. It would be constructed of bolted or welded steel and painted with a non-reflective coating to blend with the surrounding environment. The potable water tank would be of similar construction with a maximum volume of 7,500 gallons. The Demineralized water tanks with a total capacity of 80,000 to 100,000 gallons would store water to be used for panel washing. They would be stainless steel and painted with a non-reflective coating.

The panels would be cleaned on an as-needed basis, depending on the frequency of rainfall, proximity of arrays to airborne particulates and other factors. PVSI assumes that panel washing would occur in the fall and spring and take approximately 20 days to complete per unit per wash. Panel washing for both all units could take a total of 150 to 160 days per year to complete. Approximately 33,500 to 49,500 gallons per day (gpd)

per unit, which equates to approximately between 60 and 80 AFY for the entire Modified Project, would be required to wash the panels.

Based on the anticipated uses (including drinking water, showers, restroom facilities, panel washing, dust suppression, and 3,000-gallon dedicated fire supply, among other uses), the estimated quantity of water needed for operation and maintenance of the BSPP would be approximately 7.5 to 11 AFY per unit, plus a total of 0.5 AFY of potable water. The primary use of water during operation and maintenance-related activities would be for panel washing and dust control (the proposed PV technology requires no water for the generation of electricity).

A BLM-approved dust suppressant would be applied to control dust. Water could be used to supplement the dust suppressant in some areas on a limited basis; the amount of water used depends on the type of suppressant used and the manufacturer's recommendations. The concentrate from a reverse osmosis treatment unit (if required for on-site water treatment) might be used for dust control by blending it with water from the on-site water wells.

2.8 CONSTRUCTION AND OPERATIONS

This section describes the construction activities and the operations of the Modified Project. The construction of the Project will begin once all applicable approvals and permits have been obtained and currently anticipated to be as early as April 2013. After the preconstruction surveys, construction mobilization, and site preparation are completed, construction of the BSPP and Gen-Tie Line will begin. Work will 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 full construction of the BSPP and Gen-Tie Line.

2.8.1 Construction Workforce Numbers

Typical construction work schedules are expected to be between 8 and 12 hours per day, Monday through Friday, from 7:00 am to 10:00 pm. 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). In the event that construction work takes place outside these typical hours, activities will comply with Riverside County standards for construction noise levels. For safety reasons, certain construction tasks, including final electrical terminations, must be performed after dark when no energy is being produced. The BSPP will use restricted nighttime task lighting during construction. No more lighting will be used than is needed in order to provide a safe workplace, and lights will

be focused downward, shielded, and directed toward the interior of the site to minimize light exposure to areas outside the construction area.

The construction will take place in phases and it assumed that the grading of the next phase will take place shortly after erection of the previous phase begins. A preliminary construction schedule is presented in Appendix D, Table 7.

During Project construction, the workforce is expected to average approximately 450 to 600 employees over the 75-month construction period, with a peak workforce of approximately 700 employees during Months 5 through 38 of the construction period. The Project construction workforce will be recruited from within Riverside County and elsewhere in the surrounding region to the extent practicable.

2.8.2 Construction Equipment/Vehicles

Most construction equipment and vehicles will be brought to the BSPP at the beginning of the construction process during construction mobilization and will remain on site throughout the duration of the construction activities for which they were needed. Generally, the equipment and vehicles will not be driven on public roads while in use for the Project. In addition to construction worker commuting vehicles, as discussed above, construction traffic will include periodic truck deliveries of materials and supplies, recyclables, trash and other truck shipments.

Truck access to the site will be from I-10 and then via Mesa Drive Road to Black Rock Road. Construction truck deliveries and shipments will typically avoid the peak traffic hours in the morning and evening, so it is unlikely that Project deliveries will represent a substantial increase in traffic volumes during peak commuting hours. Materials will typically be delivered starting two weeks before the start of the associated task with the exception of electrical gear (PCSs, PVCs, etc.), which will be drop shipped just prior installation. An estimate of the types of construction equipment is presented in Appendix D, Table 9.

2.8.3 Site Clearing, Grading, and Compaction

PVSI will utilize construction grading and compaction techniques that will adequately prepare the Site for safe and efficient installation and operation of the PV arrays. The discussion below provides preliminary detail relative to the site preparation techniques that may be employed at the Site.

PVSI would utilize site preparation techniques that adequately prepare the site for safe and efficient and operation of PV arrays while allowing water to sheet flow across the site with negligible impact on surface water flow upstream and downstream of the site. The planned approach to Project Site preparation, which involves the use of "disc and roll" and micrograding techniques, reflects the results of field testing of various site preparation techniques at an off-site location by one of the PV manufacturers, with considerable experience in construction at desert locations in Southern California and Nevada. The worst case clearing, grading and compaction will be with the use of single-axis tracking systems. The descriptions below reflect that worst case grading.

2.8.3.1 Clearing

Vegetation would be cleared from roadways, access ways, and where concrete foundations are used for inverter equipment, substations, and the operations and maintenance building. Vegetation would be cleared for construction of the drainage controls. Organic matter would be mulched and redistributed within the construction area (except in trenches and under equipment foundations). Plant root systems would be left in place to provide soil stability except where grading and trenching are required for placement of solar module foundations, underground electric lines, inverter and transformer pads, road and access ways, and other facilities. During the site clearing process, the site would also be cleared of refuse, as necessary. Refuse materials encountered would be recycled or disposed.

2.8.3.2 Grading

The cut and fill depths across the Site will be minimized, and it is expected that no import or export of soil material will be required, as the amount of cut and fill would be balanced on site. Preliminary grading estimates are presented below in Table 2-3, which are significantly less than that for the Approved Project.

TABLE 2-3
ESTIMATED GRADING

Unit	Cut (cubic yards)	Fill (cubic yards)
1	200,000	170,000
2	120,000	100,000
3	250,000	200,000
4	210,000	180,000
5	200,000	170,000
6	500,000	400,000
7	800,000	700,000
8	1,100,000	900,000
Total	3,380,000	2,820,000

The estimates of cut and fill in Table 2-3 are less than the Approved Project which involved cut and fill volumes of approximately 8.3 million cubic yards.

Areas that make up more than half of the solar field would be prepared using conventional farming equipment including tractors with discing equipment and vibratory rollers. This technique is referred to as “disc and roll”. With this approach, rubber-tired farming tractors towing disc harrow equipment would disc the top 5 to 7 inches of soil. A water truck would follow closely alongside the tractor to moisten the soil to hold fugitive dust emissions to acceptable levels. The tractor may make several passes to fully disc the vegetation into the topsoil, preserving the underground root structure, topsoil nutrients and seed base; once the soil has been wetted on the first pass, additional water would not be needed for subsequent passes. A drum roller would then be used to flatten the surface and return the soil to a compaction level similar to the preconstruction stage. The intent of the roller would be to level the soil under the solar field area and even out the surface after the discing is complete.

In dispersed sections of the solar array field, there would be limited use of scrapers to perform micrograding. This technique is referred to as “isolated cut/fill and roll”. In general, portions of the site would be contour graded level; the macro-level topography and stormwater drainage would remain unchanged, but within each solar array, “high spots” would be graded and the soil cut from these limited areas used to fill “low spots” within the same array. Limited use of scrapers for micrograding would be employed only where needed to produce a more level surface than can be produced by the disc and roll technique.

Standard cut and fill techniques would be used in areas of the site where soil conditions do not lend themselves to discing. The overall objective of the earth moving would be to produce a consistent grade in each solar field area. Standard cut and fill techniques would be utilized within specific arrays to limit slope to within 3 percent. Essentially, the

BSPP site would be graded to a sufficiently level topography using the least practicable amount of conventional cut and fill grading. The grading plan would utilize hydrology analysis to identify and protect areas that are susceptible to scour from stormwater runoff, and otherwise manage stormwater runoff to maintain plant facilities and safety and to ensure that off-site drainage conditions upstream and downstream of the site are as close as practicable to preexisting conditions. Work over the site preparation period would be paced so that grading of an area takes place shortly before trenching and post installation are ready to begin. This would minimize the area of open, uncovered ground present at any one time during construction, and thereby minimize dust and erosion issues. As shown in Table 2-4 above, the amount of standard cut and fill grading techniques increases as development progresses westerly from the eastern boundary.

Work over the grading period would be paced so that grading of an area takes place shortly before trenching and post installation are ready to begin. This would minimize the area of open, uncovered ground present at any one time during construction, and thereby minimize dust and erosion issues.

2.8.3.3 Erosion Control

The Project would utilize site preparation techniques that adequately prepare the site for safe and efficient and operation of PV arrays while allowing water to sheet flow across the Site with negligible impact on surface water flow upstream and downstream of the Site. As noted above, the planned approach to Project Site preparation involves the use of “disc and roll” and micrograding techniques.

Based on a preliminary grading plan, PVSI commissioned a hydraulic evaluation contained in Appendix B. PVSI’s final design will implement site design and protective erosion and drainage control design measures during construction and operation to minimize dust and erosion issues. Storm water flow will be managed to prevent downstream erosion and channelization.

Contour grading, erosion control design features, storm water mitigation measures and other protective measures (including avoiding the placement of PV module tables and piles within significant drainages and minimizing disturbance and compaction to the extent possible), will enable historic levels of runoff off site to be maintained at the BSPP and in downstream areas. While the final grading design has not been completed, the amount of grading is considerably less than the Approved Project and there is no need for the large drainage structures that were originally designed for the Approved Project.

The Project may need to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) Water Quality Order 99-08-DWQ. PVSI will prepare and implement a construction Storm Water Pollution Prevention Plan (SWPPP) prior to the commencement of soil disturbance activities associated with Project construction. The SWPPP will describe construction Best Management Practices (BMPs) to manage storm water on the site to both protect the site and to minimize downstream erosion and sedimentation.

Several erosion control measures are planned during construction including stabilization of the heavily-used construction entrance area, employing a concrete wash-out area, as needed, and tire washes near the entrance to existing roadways. Silt fences are proposed for erosion control along neighboring properties.

The approximate percentage of the BSPP site that will be covered with impervious surfaces (inverter foundations, etc.) will constitute a fraction of one percent of the total surface area of the Site. The final Site Plan will be based on a detailed topographic survey of the Site, as well as detailed hydrologic and topographic studies that will be performed as a part of the permitting and engineering design process.

2.8.4 System Installation

Depending on the final PV technology and vendor selected, the design of the tracker support structures could vary. Typical installations of this type are constructed using steel piles or concrete foundations. Steel piles may be driven, screwed, or grouted. Driven steel pile foundations typically are galvanized and used where high load bearing capacities are required. The pile is driven using a hydraulic ram where up to two workers are required. 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. Screw piles, if used, would be driven into the ground with a truck-mounted auger requiring two or three personnel. Screw piles create a similar soil disturbance footprint as driven piles. Grouted steel piles, if used, would require pre-drilling with auger equipment so that the pile could be inserted into the cleaned hole. The pile then would be grouted into place from bottom to top until grout flows out of the top of the hole. Soil disturbance would be the same as the previous steel pile descriptions with additional disturbance from the soil removal and insertion of grout at the pile location. 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.

The design method and installation time of the support structures would depend on the support structure and block design with driven piles being the fastest preferred installation method. Final construction and installation details would be determined in the detailed design of the Project.

Solar PV panels would be manufactured off-site and shipped to the site ready for installation. Concrete pads for the drive motors would be either pre-cast or post and brought to the site via flatbed truck. Once most of the components have been placed on their respective foundations, the electricians and instrumentation installers would run the electrical cabling throughout the solar field. After the equipment is connected, electrical service would be verified, motors checked, and control logic verified. The various hydraulic systems would be charged with their appropriate fluids and startup testing would proceed. As the solar arrays are installed, the balance of the plant would continue to be constructed and installed and the electrical power and instrumentation would be placed. Once all of the individual systems have been tested, integrated testing of the BSPP would occur.

2.9 PROJECT OPERATION AND MAINTENANCE

2.9.1 Operation and Maintenance Workforce

Approximately 20-30 permanent, full-time personnel would be employed at the 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 (OSHA) 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.

2.9.2 Automated Facility Control and Monitoring System

The proposed facility control and monitoring system would have two primary components: an on-site SCADA 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. For example, personnel at the Remote Operations Center would provide continuous 24/7/365 monitoring coverage of Project facilities and would respond to real-time alerts and system upsets using advanced monitoring applications that reside on the servers in their network.

2.9.3 Panel Washing

PV panel washing would be performed by seasonal maintenance crews in the fall and spring, taking approximately 20 days to complete each unit. Up to 50,000 gpd per unit would be required for this purpose. Several types of systems are currently available; most involve spraying filtered water onto the modules from a portable tank mounted in the bed of a pickup truck. Sometimes brushes, rods, or circular cleaning heads are used to remove debris. 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.

2.9.4 Road Maintenance

Paved roads 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 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.

2.10 HAZARDOUS MATERIALS MANAGEMENT

2.10.1 Waste and Hazardous Materials Management

2.10.1.1 Wastewater

Two separate wastewater collection systems would be provided as part of the Project: one for sanitary wastes, and another to address the process 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. The sanitary wastewater from sinks, toilets, showers, other sanitary facilities in the O&M building would be discharged to a sanitary septic system and on-site leach field. The septic system would be designed and permitted in accordance with state and County regulations.

On-site water treatment would discharge minimal wastewater (up to 56 gpm). The Final Decision allows for each power block to have two 4-acre evaporation ponds for a total of eight 4-acre evaporation ponds. Waste Discharge Requirements for the ponds were

included in the Final Decision. Based on analysis of need for the Modified Project the BSPP could require up to a total of 8 acres of netted evaporation ponds. The evaporation ponds would be located near the water treatment area.

The average pond depth design could be up to 8 feet and residual precipitated solids would be removed approximately every 8 to 10 years, as needed, to maintain a solids depth no greater than 3 feet for operational and safety purposes. The precipitated solids would be sampled and analyzed to meet the characterization requirements of the receiving disposal facility. The characteristics of the precipitated solids would determine the transportation and disposal methodology. It is anticipated the pond solids and other non-hazardous wastes would be classified as Class II non-hazardous industrial waste. Pond solids would be tested using appropriate test methods in advance of removal from the evaporation ponds to confirm this determination; however, preliminary estimates show the material would be non-hazardous.

2.10.1.2 Solid (Non-Hazardous) Waste

Construction, operation, maintenance, and decommissioning of the 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.

Information on universal wastes anticipated to be generated during Project construction is provided in Table 2-4. Universal wastes and unusable materials would be handled, stored, and managed per California Universal Waste requirements.

Operation and maintenance of the Project would generate sanitary wastewater, non-hazardous wastes, and small quantities of hazardous wastes. Operation and maintenance of the Project's linear facilities (e.g., the gen-tie line) would generate minimal quantities of waste. The types of waste and their estimated volumes are summarized in Table 2-5.

Facility construction, operation, maintenance, and decommissioning would generate wastes that require proper management and in some cases off-site disposal. There are seven permitted Class III landfills located in the County within approximately 145 miles of the Project site. There are two major permitted Class I hazardous waste landfills

located in California, located approximately 350 and 400 road miles from the site, respectively.

TABLE 2-4
SUMMARY OF CONSTRUCTION WASTE STREAMS AND MANAGEMENT METHODS

Waste Stream and Classification[a]	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	On-site Treatment	Waste Management Method/Off-site Treatment
Construction waste – Hazardous	Empty hazardous material containers	1 cubic yard per week (cy/wk)	Intermittent	None. Accumulate on site for <90 days	Return to vendor or dispose at permitted hazardous waste disposal facility
Construction waste – Hazardous	Solvents, used oil, paint, oily rags	175 gallons	Every 90 days	None. Accumulate on site for <90 days	Recycle or use for energy recovery
Spent batteries - Universal Waste	Lead acid, alkaline type	20 in 2 years	Intermittent	None. Accumulate on site for <90 days	Recycle
Construction waste – Non-hazardous	Scrap wood, concrete, steel, glass, plastic, paper	40 cy/wk	Intermittent	None	Recycle wherever possible, otherwise dispose to Class III landfill
Sanitary waste – Non-hazardous	Portable Chemical Toilets - Sanitary Waste	200 gallons/ day	Periodically pumped to tanker truck by licensed contractors	None	Ship to sanitary wastewater treatment plant
Office waste – Non-hazardous	Paper, aluminum, food	1 cy/wk	Intermittent	None	Recycle or dispose to Class III landfill

NOTE:
[a] Classification under 22 California Code of Regulations (CCR) §66261.20 et seq.

TABLE 2-5
SUMMARY OF OPERATION WASTE STREAMS AND MANAGEMENT METHODS

Waste Stream and Classification[a]	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				On site	Off site
Used Hydraulic Fluid, Oils and Grease – Non-RCRA[b] Hazardous	Tracker drives, hydraulic equipment	1000 gallons/year	Intermittent	Accumulated for <90 days	Recycle
Oily rags, oil absorbent, and oil filters – Non-RCRA Hazardous	Various	One 55-gallon drum per month	Intermittent	Accumulated for <90 days	Sent off site for recovery or disposed at Class I landfill
Spent batteries – Universal Waste	Rechargeable and household	<10/month	Continuous	Accumulate for <1 year	Recycle
Spent batteries – Hazardous	Lead acid	20 every 2 years	Intermittent	Accumulated for <90 days	Recycle
Spent fluorescent bulbs – Universal Waste	Facility lighting	< 50 per year	Intermittent	Accumulate for <1 year	Recycle
Sanitary wastewater – Nonhazardous	Toilets, washrooms	250 gallons/day	Continuous	Septic leach field	None

NOTES:

[a] Classification under 22 CCR §66261.20 et seq.

[b] Resource Conservation and Recovery Act

2.10.1.3 Hazardous Materials Management

During construction, all hazardous materials would be stored on-site in storage tanks, vessels, or other appropriate containers specifically designed for the characteristics of the materials to be stored. The storage facilities would include secondary containment in case of tank or vessel failure. Construction- and decommissioning-related hazardous materials used for development of the Project would include: gasoline, diesel fuel, oil, lubricants, and small quantities of solvents and paints. Material Safety Data Sheets for all applicable materials present on-site would be readily available to on-site personnel.

Fueling of some construction vehicles would occur in the construction area. Other mobile equipment would return to the laydown area for refueling. Special procedures would be identified to minimize the potential for fuel spills, and spill control kits will be carried on all refueling vehicles for activities such as refueling, vehicle or equipment maintenance procedures, waste removal and tank clean-out. Fuel for construction equipment could be provided by a fuel truck or could be stored on-site in aboveground double-walled storage tanks with built-in containment.

A Spill Prevention and Management Plan (SPMP) would include procedures, methods, and equipment supplied during construction to prevent discharges from reaching waters of the state. The plan would be certified by a Registered Professional Engineer and a complete copy of it would be maintained on-site.

During BSPP operation, a variety of chemicals and hazardous materials would be stored and used at the facility. Chemicals would be stored inside the O&M building as

appropriate to prevent exposure to the elements and to reduce the potential for accidental releases, and in appropriate chemical storage containers. Bulk chemicals would be stored in storage tanks; other chemicals would be stored in returnable delivery containers. Chemical storage and chemical feed areas would be designed to contain leaks and spills. Containment berm and drain piping design would accommodate a full-tank capacity spill without overflowing the containment berms. For multiple tanks located within the same bermed area, the capacity of the largest single tank would determine the volume of the bermed area and drain piping. The transport, storage, handling, and use of all chemicals would be conducted in accordance with applicable laws, ordinances, regulations, and standards.

The quantities of hazardous materials stored on-site would be evaluated to identify the required usage and to maintain sufficient inventories to meet use rates without stockpiling excess chemicals. Chemicals that could be present during construction, operation and maintenance of the BSPP are included in Table 2-6.

If a portable, trailer-mounted water treatment system would meet the BSPP flow and water quality demands described above, then no additional chemicals would be required for maintenance and regeneration of the system. However, if a site-specific water treatment system is used, then the regeneration process could require additional chemicals to maintain its performance. Such chemicals could include sodium hydroxide solution, sodium hypochlorite solution, and/or sulfuric acid solution.

TABLE 2-6
SUMMARY OF SPECIAL HANDLING PRECAUTIONS FOR LARGE QUANTITY HAZARDOUS MATERIALS

Hazardous Material	Use	Relative Toxicity[a] and Hazard Class[b]	Permissible Exposure Limit	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Carbon Dioxide		Low toxicity; Hazard class – Nonflammable gas	TLV: 5,000 ppm (9,000 mg/m^3) TWA	Carbon steel tank, 15 tons maximum on-site inventory	Carbon steel tank with crash posts.
Diesel Fuel	Equipment refueling and emergency diesel fire pump	Low toxicity; Hazard class – Combustible liquid	PEL: none established TLV: 100 mg/m^3	Carbon steel tank (3,600 gallons)	Secondary containment, overfill protection, vapor recovery, spill kit.
Hydraulic fluid (if applicable)	Tracker drive units	Low to moderate toxicity; Hazard class – Class IIIB combustible liquid	TWA (oil mist): 5 mg/m^3 STEL: 10 mg/m^3	Hydraulic drive tank, approximately 20 gallons per tracker drive unit (if applicable) throughout solar field. Carbon steel tank, maintenance inventory in 55-gallon steel drums.	Found only in equipment with a small maintenance inventory. Maintenance inventory stored within secondary containment; alternative measures to secondary containment for equipment will be implemented at the project.
Lube Oil	Lubricate rotating equipment (*e.g.,* tracker drive units)	Low toxicity Hazard class – NA	None established	Carbon steel tank, maintenance inventory in 55-gallon steel drums.	Secondary containment for tank and for maintenance inventory.
Mineral Insulating Oil	Transformers/ switchyard	Low toxicity Hazard class – NA	None established	Carbon steel transformers; total on-site inventory of approximately 250,000 gallons (each 1 megavolt-ampere transformer contains approximately 500 gallons). Carbon steel tank, maintenance inventory in 55-gallon steel drums.	Used only in transformers, secondary containment for each transformer. Maintenance inventory stored within secondary containment; alternative measures to secondary containment for equipment will be implemented at the project.
Soil stabilizer Active ingredient: acrylic or vinyl acetate polymer or equivalent		Non-toxic; Hazard class - NA	None established	No on-site storage, supplied in 55-gallon drums or 400-gallon totes, used immediately	No excess inventory stored on-site.
Sulfur Hexafluoride	230 kV breaker insulating medium			Contained within switchyard equipment; maximum of 7500 lbs	Inventory management.
Acetylene	Welding gas	Moderate toxicity; Hazard class – Toxic	PEL: none established	Steel cylinders; 200 cubic foot each, 600 cubic foot total on site	Inventory management, isolated from incompatible chemicals.
Argon	Welding gas	Low toxicity; Hazard class – Nonflammable gas	PEL: none established	Steel cylinders; 200 cubic foot each, 600 cubic foot total on site	Inventory management.
Oxygen	Welding gas	Low toxicity; Hazard class – Oxidizer	PEL: none established	Steel cylinders; 200 cubic foot each, 600 cubic foot total on site	Inventory management, isolated from incompatible chemicals.

NOTES:

[a] Low toxicity is used to describe materials with a National Fire Protection Association (NFPA) Health rating of 0 or 1. Moderate toxicity is used describe materials with an NFPA rating of 2. High toxicity is used to describe materials with an NFPA rating of 3. Extreme toxicity is used to describe materials with an NFPA rating of 4.

[b] NA denotes materials that do not meet the criteria for any hazard class defined in the 1997 Uniform Fire Code.

PVSI would develop and implement a variety of plans and programs to ensure safe handling, storage, and use of hazardous materials (e.g., Hazardous Material Business Plan). Solar plant personnel would be supplied with appropriate personal protective equipment (PPE) and would be properly trained in the use of PPE as well as the handling, use, and cleanup of hazardous materials used at the facility and the procedures to be followed in the event of a leak or spill. Adequate supplies of appropriate cleanup materials would be stored on-site.

In addition to the chemicals listed above, small quantities (less than 55 gallons, 500 pounds or 200 cubic feet) of janitorial supplies, office supplies, laboratory supplies, paint, degreasers, herbicides, pesticides, air conditioning fluids (chlorofluorocarbons or CFCs), gasoline, hydraulic fluid, propane, and welding rods typical of those purchased from retail outlets also could be stored and used at the facility. These materials would be stored in the maintenance warehouse or office building. Flammable materials (e.g., paints or solvents) would be stored in flammable material storage cabinet(s) with built-in containment sumps. The remainder of the materials would be stored on shelves, as appropriate.

2.10.1.4 Hazardous Waste

Similar to the Approved Project small quantities of hazardous wastes would be generated during BSPP construction, operation, maintenance, and decommissioning. Hazardous wastes generated during the construction phase would include substances such as paint and primer, thinners, and solvents. Hazardous solid and liquid waste streams that would be generated during operation of the Project include substances such as used hydraulic fluids, used oils, greases, filters, etc., as well as spent cleaning solutions and spent batteries. Hazardous wastes generated during decommissioning would include substances such as: carbon dioxide, diesel fuel, hydraulic fuel and lube oil. To the extent possible, all hazardous wastes would be recycled.

PVSI or its contractor would obtain a hazardous waste generator identification number from the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) prior to generating any hazardous waste. All spills would be reported to BLM and the County. Spills greater than 25 gallons would be reported to the RWQCB. A sampling and cleanup report would be prepared and sent to the RWQCB to document each spill and clean up. Each spill, regardless of amount, would be cleaned up within 48 hours and a spill report completed. Copies of all spill and cleanup reports would be kept on-site.

2.11 FACILITY CLOSURE

The standards applied to closure of the facility for the Modified Project would not be different from those applicable to the Approved Project.

The principal materials incorporated into the PV arrays include glass, steel, and various semiconductor metals. The module production process is designed to minimize waste generation and maximize the recyclability and reusability of component materials. Some manufacturers employ the compound CdTe as the semiconductor material. Cadmium telluride is a stable compound of cadmium (Cd) and tellurium (Te). Cadmium, Cd, produced primarily as a byproduct of zinc refining, is a human carcinogen as an independent element, but when combined with Te, a byproduct of copper refining, forms the stable, non-hazardous compound CdTe. In module manufacturing Cd, a hazardous material, is safely sequestered in the form of CdTe in a module for the over 30-year lifetime of the module, after which it is recycled for use in new solar modules or other new products. If the BSPP selects panels that incorporate CdTe, it will participate in the manufacturer's recycling program. An analysis of CdTe is included in Section 4.5 of this Petition.

Section 3 ENGINEERING ANALYSIS

The following sections provide a description of the modifications proposed to the BSPP as they may affect the assumptions, rationale, and Conditions of Certification in the Commission Final Decision. As discussed in Section 2 of this Petition, PVSI has not yet selected the exact combination of fixed tilt and single access tracking PV modules for the site. Such selection will be made as part of the final design of the BSPP. However, where there are differences between the two systems, PVSI has included a comparison of each for the Commission to consider a "worst-case" for each technical area.

3.1 FACILITY DESIGN, EFFICIENCY AND RELIABILITY

This section outlines the portions of the Modified Project that may affect the analysis, rationale, conclusions, and Conditions of Certification contained in the Commission Final Decision for the Approved Project.

3.1.1 Overview of Approved Project

The Approved Project was originally licensed as a nominally rated 1000 MW solar thermal facility to be developed in four independent units, each with a capability of generating up to 250 MW with traditional steam turbine technology. The Approved Project would interconnect with a double circuit 230 kV transmission generation tie-line to the Colorado River Substation (CRS) which is already under construction.

The Approved Project would have utilized solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is brought to high temperature (750°F) as it circulates through the receiver tubes. The HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced. Individual components of the Approved Project included:

- Solar Field & Power Block #1 (northeast);
- Solar Field & Power Block #2 (northwest);
- Solar Field & Power Block #3 (southwest);
- Solar Field & Power Block #4 (southeast);
- Access road from and including upgraded portion of Black Rock Road to onsite office;
- Warehouse/maintenance building, assembly hall and laydown area;
- Telecommunications Lines;
- Natural Gas Pipeline;
- Concrete Batch plant;
- Fuel depot;
- Onsite transmission facilities, including central internal switchyard;
- 230 kV double circuit transmission line interconnecting to the Colorado River Substation (Gen-Tie Line); and
- Groundwater wells used for water supply.

3.1.2 Relevant Modifications to Project Description

The primary modifications relevant to Facility Design, Efficiency and Reliability are the following:

- 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 have been eliminated and replaced with PV panels configured for either horizontal tracking or fixed tilt operations.
- The substation will be relocated near the center of the disturbance area.
- The large assembly hall will be eliminated.
- The concrete batch plant will be eliminated.
- The natural gas line has been eliminated.
- The water treatment system, associated waste and evaporation ponds have been reduced from eight ponds to two.
- The large drainage structures surrounding the site will be reduced in size or eliminated.

3.1.3 Power Plant Efficiency

An analysis of the Modified Project's efficient use of land to generate electricity will be submitted under separate cover.

3.1.4 Power Plant Reliability

For practical purposes, a reliable power plant is one that is available when called upon to operate. The evidence shows that delivering acceptable reliability entails: 1) adequate levels of equipment availability; 2) plant maintainability with on-going maintenance; 3) fuel and water availability; and 4) resistance to natural hazards.

An analysis of these factors demonstrating that the Modified Project can be constructed and operated in a safe and reliable manner will be submitted under separate cover.

3.1.5 Compliance With LORS

The Commission Final Decision concluded that, with implementation of the Conditions, the Approved Project would comply with all applicable LORS. No LORS have been identified that are uniquely applicable to PV. In fact, some of the LORS that would have been applicable to the Approved Project, such as those associated with the design of

the facility components using natural gas or HTF, would no longer be applicable to the Modified Project. As with the Approved Project, the Modified Project would comply with all applicable LORS.

3.1.6 Conditions of Certification

Condition of Certification **GEN-2** contains a table of major structures associated with the Approved Project. The table should be modified as follows:

Equipment/System	Quantity (Plant)
PV Modules ~~Steam Turbine Generator Foundation and Connections~~	~~4~~
PV Racking System ~~Start-up Boilers Foundations and Connections~~	~~4~~
Generator Step-up Transformer Foundation and Connections	~~4~~
Inverters ~~Overflow Vessel Foundation and Connections~~	~~8~~
~~Expansion Vessel Foundation and Connections~~	~~8~~
Weather Station Building Structure, Foundation and Connections	~~4~~
~~HTF Pumps Lube Oil Unit Foundation and Connections~~	~~8~~
~~Balance of Plant Electrical Building Structure, Foundation and Connections~~	4
~~Ullage Coolers and Vessel~~	4
~~Reheaters Foundation and Connections~~	8
~~MCC Cooling Tower Foundation and Connections~~	4
~~Gland Condenser Foundation and Connections~~	4
~~Lube Oil Console~~	4
~~Deaerator Foundation and Connections~~	4
~~LP/HP Pre-Heaters~~	4
~~Main Auxiliary Transformers Foundations and Connections~~	4
~~Air-cooled Condenser Structure, Foundation and Connections~~	4
~~Oil/Water Separator Foundation and Connections~~	4
~~Compressed Air System Foundation and Connections~~	4
~~Generator Circuit Breaker Foundation and Connections~~	4
Warehouse Building Structure, Foundation and Connections	4 ***1***
~~Chemical Injection Skid Foundation and Connections~~	~~4~~
~~Cooling Tower Structure Foundation and Connections~~	~~4~~
Water Tank Structure, Foundation and Connections	4
Take Off Tower Structure, Foundation and Connections	4
~~Blowdown Tanks Structure, Foundation and Connections~~	~~8~~

Condition of Certification **MECH-1** lists several LORS that may no longer be applicable to the construction of a project that uses PV instead of solar thermal technology. An update of the LORS that should be eliminated will be submitted under separate cover.

3.2 TRANSMISSION SYSTEM ENGINEERING

This section outlines the portions of the Modified Project that may affect the analysis, rationale, conclusions, and Conditions of Certification contained in the Commission Final Decision for the Approved Project.

3.2.1 Overview of Approved Project

The Approved Project was originally licensed as a nominally rated 1000 MW solar thermal facility to be developed in four independent units, each with a capability of generating up to 250 MW with traditional steam turbine technology. The Approved Project would interconnect with a double circuit 230 kV transmission generation tie-line to the Colorado River Substation (CRS) which is already under construction. The Commission approved a previous amendment on August 24, 2011 to the Approved Project to accommodate the relocation of the CRS. CAISO, SCE and PVSI executed a Large Generator Interconnection Agreement (LGIA) in November 2010, which was approved by the Federal Energy Regulatory Commission (FERC) in March 2011.

3.2.2 Relevant Modifications to Project Description

The Modified Project will eliminate the power blocks and the CSP generation technology will be replaced with PV. The switchyard will be modified to accommodate this change. A preliminary one-line diagram and a preliminary layout of the proposed switchyard are presented in Appendix C. Additionally, a slight change to the transmission route will be made to accommodate the use of a shared transmission corridor from the McCoy and EneXco Projects located north of the site.

SCE and CAISO are currently reviewing the effect of switching solar technologies and whether that impacts the previous interconnection studies. Once this evaluation is complete, the LGIA will be amended to address the technology switch. The LGIA amendment, once executed, will require FERC review and approval. It is anticipated that the switch to technology will not require different downstream transmission system upgrades than those identified in the previous CAISO studies.

3.2.3 Compliance With LORS

The Modified Project will comply with all transmission system engineering related laws, ordinances, regulations and standards. This will be ensured by enforcement of the existing Conditions of Certification as modified below. Evidence that the Modified Project can safely interconnect with the CAISO system at the CRS will be demonstrated by the LGIA, when amended.

3.2.4 Conditions of Certification

No modifications of Conditions of Certification are proposed to the Commission Final Decision to accommodate the Modified Project.

3.3 TRANSMISSION LINE SAFETY AND NUISANCE

There will be no changes to the Commission's assumptions, analysis, rationale or Conditions of Certification as a result of the Modified Project to the technical area of Transmission Line Safety and Nuisance because the Approved Transmission Line is not changing, except for a minor shift to accommodate other projects.

Section 4 PUBLIC HEALTH AND SAFETY

The following sections provide a description of the modifications proposed to the BSPP as they may affect the assumptions, rationale, and Conditions of Certification in the Commission Final Decision. As discussed in Section 2 of this Petition, PVSI has not yet selected the exact combination of fixed tilt and single access tracking PV modules for the site. Such selection will be made as part of the final design of the BSPP. However, where there are differences between the two systems, PVSI has included a comparison of each for the Commission to consider a "worse-case" for each technical area. Ultimately the selection of either fixed-tilt or tracking PV systems or a combination of both systems will not affect: the amount of land that is assumed to be considered impacted and upon which mitigation is based; the construction methodologies or types or quantities of equipment necessary to construct the project and therefore construction emissions will be the same; or the hazardous materials or waste generated.

4.1 GREENHOUSE GAS EMISSIONS

This section provides estimates of Greenhouse Gas Emissions (GHG) associated with the construction of the Modified Project. Estimates of GHGs for operation and maintenance of the Modified Project are not provided since the elimination of the solar thermal technology eliminates the major GHG emissions associated with the use of HTF, the consumption of natural gas, and the intensive mirror washing program. The GHGs for operation and maintenance of the Modified Project are estimated to be a fraction of those of the Approved Project.

GHG emissions during construction, however, were evaluated for the Modified Project since many of the construction activities associated with grading of the site were similar to the Approved Project, warranting a closer comparison.

4.1.1 Summary of GHG Construction Emissions

The methodology for calculating GHG emissions during construction is described in Appendix D. Table 4.1-1 presents the estimates of GHGs for the construction phase of the Modified Project (total of on-site and offsite emissions).

TABLE 4.1-1
GHG CONSTRUCTION EMISSIONS ESTIMATES

Total CO_2e, short tons/period	9578
Total CO_2e, metric tons/period	8707
Total CO_2e, normalized short tons/yr	1532.5
Total CO_2e, normalized metric tons/yr	1393

These GHG construction emission estimates are less than the GHG construction estimate of 103,900 metric tons/period contained in the Final Decision.

4.2 AIR QUALITY

This section provides estimates of criteria pollutant emissions and modeled impacts associated with the construction of the Modified Project. Emissions estimates and modeling was not conducted for operation and maintenance of the Modified Project because the discontinued use of the solar thermal technology eliminates the emissions associated with the use of HTF, the consumption of natural gas, and the intensive mirror washing program of the Approved Project. The air quality emissions for operation and maintenance of the Modified Project are estimated to be a fraction of those of the Approved Project.

However, criteria pollutant emissions during construction were evaluated for the Modified Project since many of the construction activities associated with grading of the site were similar to the Approved Project, warranting a closer comparison.

4.2.1 Summary of Construction Emissions

The methodology for calculating criteria pollutants and modeling impacts during construction is described in Appendix D. Table 4.2-1 presents the modeling results. Also included in the table are the maximum background levels that have occurred in the last three years and the resulting total ambient impacts. As shown in Table 4.2-1, modeled construction impacts are expected to be below the most stringent state and national standards. Total (i.e., modeled plus background) impacts are greater than the state's PM10 standards because these standards are already exceeded by background ambient concentrations even in the absence of the construction emissions from the Modified Project. Total (modeled+background) concentrations all also greater than the new 1-hour federal NO_2 standard.

TABLE 4.2-1
MODELED MAXIMUM IMPACTS

Pollutant	Averaging Time	Maximum Impacts (ug/m³)	Background (ug/m³)	Total Impacts (ug/m³)	State Standard (ug/m³)	Federal Standard (ug/m³)
NO_2	1 hour CAAQS	185.9	90.2	276.1	339	-
	1-hour NAAQS	173.3	73.3	246.6	-	188
	Annual	0.44	16.9	17.35	57	100
CO	1 hour	949	3437	4386	23000	40000
	8 hour	158	768	926	10000	10000
PM_{10}	24 hour	16.5	324	340.1	50	-
	CAAQS	16.5	96	112.5		150
	24-hour	0.08	35.4	35.5	20	-
	NAAQS					
	Annual					
$PM_{2.5}$	24 hour	7.4	14.7	22.1	-	35
	Annual	0.04	7.8	7.84	12	15.0
SO_2	1 hour	1.44	136.3	137.7	655	196
	3 hour	0.59	N/A	<136.9		1300
	24 hour*	0.13	18.42.6	18.53	105	365
	Annual*	0.001		2.6		80
Ozone	1 hour	Modeling not required.			180	-
	8 hour				137	147

Notes:

1. Background values are the limiting values, i.e., when used for both state (CAAQS) and federal (NAAQS) standards, the value that is the highest for each applicable averaging time from Table 4 is used.
2. CARB Ambient Air Quality Standards Table, 2-7-12.
3. *Federal SO_2 standards for 24 hour and annual apply only to certain areas (not applicable to this project).
4. Annual values are arithmetic means.
5. ARM applied for annual NO_2 average, using national default ratio of 0.75. Ozone Limiting Method (OLM) applied for 1-hour NO_2 average, calculated by AERMOD as described above.

4.2.2 Compliance With LORS

The Modified Project will not be required to submit an application for a Determination Of Compliance with the Mojave Desert Air Quality Management District (MDAQMD) because it will not have any permanent emission sources that would require permits under MDAQMD rules.

4.2.3 Conditions of Certification

Conditions of Certification **AQ-1** through **AQ-64** should be deleted as they are no longer applicable to the Modified Project because the BSPP will no longer have equipment that requires MDAQMD permits.

Condition of Certification **AQ-SC6** should be revised as follows to reflect that the Modified Project will not incorporate mirrors.

AQ-SC6 The project owner, when obtaining dedicated on-road or off-road vehicles for ~~mirror~~ ***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.

4.3 PUBLIC HEALTH

This section provides a public health impact analysis associated with construction emissions for the Modified Project. The public health impact analysis for operation and maintenance of the Modified Project is not provided because with the elimination of the solar thermal technology and the emissions associated with the use of HTF, the consumption of natural gas, and the intensive mirror washing program are no longer present. Therefore, the potential public health impacts associated with emissions during operation and maintenance of the Modified Project are estimated to be a fraction of those of the Approved Project.

However, since the emissions associated with construction activities for the Modified Project are expected to be similar to those evaluated for the Approved Project, a revised health risk analysis was performed for the Modified Project.

4.3.1 Summary of Construction Emission Health Risk Analysis

The screening risk calculation for construction impacts (i.e., diesel equipment particulate matter emissions and the inhalation pathway assumption) is presented in Table 4.3-1. Consistent with the previous project analysis, no sensitive receptors were noted within a 3-mile radius of the plant site. The resulting impacts to public health are less than the applicable significance level of 1 in a million. Thus, during the construction phase of the Modified Project, no impacts to public health are expected to occur.

TABLE 4.3-1
CONSTRUCTION RISK SUMMARY

Parameter	MIR Receptor #1	MIR Receptor #2
Receptor Location	Fence line	Nearest Residential
MIR Receptor Coordinates (UTM meters-NAD83)	705922, 3727306	710535, 3721040
Cancer Risk (per million-6.25 years)	0.69	0.01
Chronic HI	0.007	0.000
The maximum onsite diesel exhaust period emissions (normalized tons/year) were used for risk evaluation purposes. Maximum annual PM10 combustion source impacts are 0.03605 ug/m^3 for the fenceline receptor, and 0.00070 ug/m^3 for the nearest residential receptor.		

4.3.2 Compliance With LORS

There are no public health related LORS that would be applicable to the Modified Project solely as a result of its conversion to PV technology. Therefore, the Commission Final Decision's conclusion that the BSPP would comply with all public health related LORS would still be applicable.

4.3.3 Conditions of Certification

The Commission Final Decision includes Condition of Certification **PUBLIC HEALTH-1** which applied solely to use the cooling tower. Since the Modified Project will not construct or operate any cooling towers, this Condition of Certification should be deleted.

4.4 WORKER SAFETY/FIRE PROTECTION

This section discusses the reduction in impacts to worker safety and fire protection for the Modified Project.

4.4.1 Project Changes Related to Worker Safety and Fire Protection

The Modified Project proposes to utilize either fixed tilt or single-axis tracking PV modules for the Modified Project's electrical generation. The elimination of all solar thermal technology (including the equipment within the four power blocks) would result in the elimination of combustion of natural gas and the transport and storage of HTF. These components were the focus of potential impacts to worker safety and fire protection during Licensing of the Approved Project.

4.4.2 Changes in Environmental Impacts

The potential impacts to worker safety during construction would be the same for the Modified Project as for the Approved Project.

The largest potential change to the analysis contained in the Final Decision is whether the on-going contribution to Riverside County Fire Department remains necessary since the level of service needed to respond to a HTF fire in the solar field, or a fire or explosion within the power block, has been eliminated. PVSI will work with the Riverside County Fire Department and/or the City of Blythe Fire Department to negotiate an appropriate mitigation fee to offset the impacts to the applicable fire department(s) from the reduced risk posed by the Modified Project.

4.4.3 Compliance With LORS

In the Commission Final Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. As with the Approved Project, the Modified Project would comply with all applicable LORS, and no new or additional LORS have been identified.

4.4.4 Conditions of Certification

No new or more severe impacts requiring additional mitigation would result from the Modified Project and therefore no changes the Conditions of Certification are proposed. However, it is likely that Condition of Certification **WORKER SAFETY -7** will need to be revised to reflect the reduction in impacts to the Riverside County Fire Department and/or City of Blythe Fire Department associated with the lower of level response necessary for the Modified Project.

4.5 HAZARDOUS MATERIALS MANAGEMENT

As described below impacts of the Modified Project to hazardous materials management are expected to be less than or equal to those of the Approved Project and will remain less than significant.

4.5.1 Project Changes Related to Hazardous Materials Management

The Modified Project proposes to utilize either fixed tilt or single-axis tracking PV modules for the Modified Project's electrical generation. The elimination of the solar thermal technology and power blocks will reduce the need for some hazardous materials storage, management and disposal. Hazardous materials used during construction will be the same for the Modified Project as for the Approved Project. A description of the types, quantities and methods for management and disposal is discussed in Sections 2.10.1.3 and 2.10.1.4 of this Petition.

4.5.2 Changes in Environmental Impacts

4.5.2.1 Construction

The types and amounts of hazardous materials to be used during construction for the Modified Project are the same in type and amount as the hazardous materials as contemplated for the Approved Project. Therefore, the Modified Project's impacts to public health and safety associated with the use of hazardous materials during construction would be similar to the impacts from the Approved Project and would remain less than significant.

4.5.2.2 Operations

The types of hazardous materials that would be used during operation under the Modified Project would be less than those assumed for the Approved Project because the power blocks and HTF would be completely eliminated.

As discussed in this Petition, PVSI has not yet selected the specific panel for installation at the plant site. Some manufacturers employ the compound CdTe (cadmium telluride) as the semiconductor material within the modules. Cadmium telluride is a stable compound of cadmium (Cd) and tellurium (Te). Cd, produced primarily as a byproduct of zinc refining, is a human carcinogen as an independent element, but when combined with Te, a byproduct of copper refining, forms the stable, non-hazardous compound CdTe. In module manufacturing Cd, a hazardous material, is safely sequestered in the form of CdTe in a module for the over 30-year lifetime of the module, after which it is recycled for use in new solar modules or other new products.

In addition, CdTe's physical properties, including its extremely low vapor pressure and high melting point, along with its insolubility in water, limit its mobility. Furthermore, the very thin layer of CdTe in PV modules is encapsulated between two protective sheets of glass. As a result, the risk of health or environmental exposure in fires, from accidental breakage, or from leaching is de minimus. The exposure routes to CdTe in modules are limited; furthermore, recent toxicological testing indicates that CdTe is significantly less toxic than elemental Cd.

First Solar, a manufacturer that uses CdTe, employs a collection and recycling program to ensure that PV materials stay in the production cycle and out of municipal landfills. The program is designed to recover approximately 95 percent of the semiconductor material and 90 percent of the glass. The remaining materials (e.g., glass fines, dust) are collected in HEPA filters and are disposed of properly. Commercial scale recycling facilities are currently in operation at each of First Solar's manufacturing facilities to recycle manufacturing materials. If PVSI elects to use a PV panel that uses CdTe, it would participate in that manufacturer's recycling program.

In 2009, an in-depth assessment of the environmental, health and safety aspects of First Solar's CdTe PV systems and manufacturing operations was carried out under the authority of the French Ministry of Ecology, Energy, Sustainable Development, and the Sea. It concluded that, "During standard operation of CdTe PV systems, there are no cadmium emissions – to air, to water, or to soil. In the exceptional case of accidental fires or broken panels, scientific studies show that cadmium emissions remain negligible. Accordingly, large-scale deployment of CdTe PV can be considered safe to human health and the environment."[2]

A 2005 peer review of three major published studies on the environmental profile of CdTe PV organized by the European Commission, Joint Research Center and sponsored by the German Environment Ministry concluded "…CdTe used in PV is in an environmentally stable form that does not leak into the environment during normal use or foreseeable accidents, and therefore can be considered the environmentally safest current use of cadmium." This review also concluded that "Large scale use of CdTe photovoltaic modules does not present any risks to public health and the environment."[3]

---

[2]. Summary Report, "Environmental, Health, and Safety (EHS) Aspects of First Solar Cadmium Telluride (CdTe) Photovoltaic (PV) Systems," carried out under the authority of the French Ministry of Ecology, Energy, Sustainable Development, and the Sea, July 2009.

[3]. Summary Report, "Peer Review of Major Published Studies on the Environmental Profile of Cadmium Telluride (CdTe) Photovoltaic (PV) Systems," European Commission, Joint Research Centre.

Independent analysis also indicates that CdTe modules do not pose a risk during fires. CdTe has an extremely low vapor pressure, high boiling and melting points and is almost completely encapsulated by molten glass when exposed to fire. Exposure of pieces of CdTe PV modules to flame temperatures from 1,400°F to 2,000°F illustrated that CdTe diffuses into glass, rather than being released into the atmosphere. Higher temperatures produce further CdTe diffusion into the glass.[4]

4.5.3 Compliance With LORS

In the Commission Final Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. As with the Approved Project, the Modified Project would comply with all applicable LORS, and no new or additional LORS have been identified.

4.5.4 Conditions of Certification

Condition of Certification **HAZ-4** should be deleted as it pertains solely to use of HTF which will be eliminated from the Modified Project.

---

4. Fthenakis, V., Fuhrmann, M., Heiser, J., Lanzirotti, A., Fitts, J., and Wang, W.,""Emissions and Encapsulation of Cadmium in CdTe PV Modules During Fires," *Progress in Photovoltaics: Research and Applications*, 6, 99-103 (1998).

4.6 WASTE MANAGEMENT

This section describes the changes proposed by the Modified Project that may affect the analysis, conclusions or Conditions of Certification of the Commission Final Decision for the Approved Project.

4.6.1 Project Changes Related to Waste Management

The only changes proposed by the Modified Project relevant to waste management are the elimination of the wastes associated with operation of the power blocks and the solar field's use of HTF. Elimination of the Land Treatment Units for HTF spills will also affect the need for a waste management program tailored specifically to address such spills.

Construction wastes are expected to be the same as those identified in the Commission Final Decision for the Approved Project.

4.6.2 Changes in Environmental Impacts

4.6.2.1 Construction

The types and quantities of wastes generated and the management methods for such wastes during construction of the Modified Project would be consistent with the wastes and management methods contemplated for the Approved Project. For both the Approved Project and the Modified Project, solid waste, non-recyclable waste, and hazardous and non-hazardous waste would be treated in a similar manner. Therefore, the Modified Project's waste management impacts would be less than or equal to impacts under the Approved Project and would be less than significant.

4.6.2.2 Operations

The types of wastes generated and the management methods for such wastes during operation of the Modified Project would be consistent with the wastes and management methods contemplated for the Approved Project although the quantities of wastes would be reduced and there would be no need to manage the waste associated with releases of HTF. The reduction in sanitary wastewater amounts can be attributed to the reduction in the Project workforce. Because the Modified Project would eliminate the use of a steam turbine and an electric generator, the wastes specific to that technology would be eliminated (e.g. waste associated with PCUs, etc.). Therefore, the Modified Project's waste management impacts from operation are anticipated to be less than or equal to the impacts under the Approved Project and would be less than significant.

4.6.3 Compliance With LORS

In the Commission Final Decision the Commission concluded that, with the implementation of the Condition of Certification, the Approved Project would comply with all applicable LORS. As with the Approved Project, the Modified Project would comply with all applicable LORS, and no new or additional LORS have been identified. The Modified Project would no longer be required to comply with LORS related to the delivery, storage, handling and disposal of HTF-related wastes.

4.6.4 Conditions of Certification

Condition of Certification **WASTE-8** should be deleted since HTF and the land treatment units have been removed from the Modified Project.

Section 5 ENVIRONMENTAL ANALYSIS

The following sections provide a description of the modifications proposed to the BSPP as they may affect the assumptions, rationale, and Conditions of Certification in the Commission Final Decision. As discussed in Section 2 of this Petition, PVSI has not yet selected the exact combination of fixed tilt and single access tracking PV modules for the site. Such selection will be made as part of the final design of the BSPP. However, where there are differences between the two systems, PVSI has included a comparison of each for the Commission to consider a "worse-case" for each technical area. Ultimately the selection of either fixed-tilt or tracking PV systems or a combination of both systems will not affect the amount of land that is assumed to be considered impacted and upon which the biological, cultural, geological and paleontological resources mitigation is based.

5.1 BIOLOGICAL RESOURCES

This section describes differences in the potential impacts to biological resources that would be expected to occur in association with the Modified Project as a result of the change in technology and acreage, versus those of the Approved Project. As demonstrated below in all cases, the Modified Project's potential environmental impacts are equivalent to or less than those identified in the Commission Final Decision for the Approved Project.

5.1.1 Summary of Project Changes Related to Biology

5.1.1.1 Change in Technology

As described in Section 2 of this Petition, PVSI is proposing to replace all of the solar thermal facilities with PV. The four power blocks including the cooling tower will be eliminated. The PV layout will be constructed in eight 125 MW phases instead of four solar thermal power plants generating 250 MW each. The change in technology to PV will engender no additional impacts to special-status wildlife, plants, and natural communities as compared to those for the Approved Project:

- Support facilities (natural gas pipeline, transmission line, telecommunications, new access road, upgraded Black Rock Road access, onsite water treatment system [including evaporation ponds], O&M building and parking area, internal access roads, groundwater wells), will occur for both projects and result in relatively the same impacts.

- Construction of the PV solar site and linear features will result in permanent and semi-permanent losses of habitat equivalent to or less than those for the Approved Project.

- As with the Approved Project, the solar site will be fenced with exclusionary fencing to exclude, at a minimum, desert tortoises. Fencing will also remove the solar site from use by most or all species currently using the site and will potentially disrupt movement patterns of wildlife outside the site in the same manner as contemplated for the Approved Project.

- Effects on desert tortoises, which will be sought during clearance surveys and translocated per the approved translocation plan, will be the same for both projects.

- No additional special-status species, including state or federally listed species, will be affected by the change in technology, as none are expected at the Modified Project.

- Impacts to other protected and/or special-status species or biological resources - including but not limited to plants, natural communities, jurisdictional state waters, desert kit foxes, American badgers, Mohave fringe-toed lizards, Couch's spadefoot toads, burrowing owls, and nesting birds - will be similar and minimized identically for both projects by a combination of surveying, monitoring, avoidance, removal, and/or compensatory mitigation.

- In addition to losses of habitat and some individuals of low-mobility species, behaviors of animals in the Project vicinity may be disturbed by activities and noise associated with construction of either project. Operations on the Modified Project will result in activity, lights, and ongoing maintenance activities that will affect wildlife similarly or identically to that for solar thermal technology.

- The potential for indirect impacts, including but not limited to, weed expansion, predator increases and dust deposition, will occur similarly for both projects.

- The potential for impacts to biological resources that may result from lowered groundwater levels (e.g., springs, seeps,) will be less with the Modified Project because of lower water use for PV. The Approved Project projected an annual use of 600 acre-feet per year (afy) while the Modified Project expects to use between 60 and 88 afy.

- Impacts to existing topography and hydrology will be equivalent to or less than that for solar trough technology because the PV structures do not have the same restrictive grading requirements as solar trough mirrors.

5.1.1.2 Change in Acreage

As detailed in Section 2 of this Petition, the Footprint for the Modified Project will be entirely within the footprint of the Approved Project, except for the possible addition of two private parcels that are either owned by PVSI or under purchase-option contract to PVSI. The first property encompasses approximately 160 acres located in the center of the BSPP Project Site and is known as the Strait/Murphy Properties. The second property is located in the southern portion of the site, encompasses approximately 120 acres and is known as the Porter Property. PVSI has a purchase-option agreement for the Porter Property.

Biological surveys on the Strait-Murphy Properties were conducted in 2010 as part of the overall project surveys. The Porter Property was partially surveyed during buffer

surveys for the Approved Project. However, lands completely surrounding this property were surveyed in 2009 and 2010 and those results, along with the buffer surveys on the Porter Property, provide ample information to assess biological conditions, impacts and the relevance of licensing and permit conditions developed for the Approved Project. The results of those surveys are summarized below and were previously submitted to the Commission as part of the BSPP's Compliance submittals.

All linear facilities will not change from the Final Decision, as modified by an Amendment approved by the Commission on August 30, 2011, as a result of the switch to PV technology. Within the original project footprint the originally proposed drainage structures which will not be installed because the BSPP site no longer needs the type of extensive grading that was necessary to accommodate the solar trough technology. As described in Section 5.2 of this Petition, the grading necessary to accommodate either the fixed tilt or single access tracking PV systems is considerably less than that required for the original BSPP, which will allow much of the storm water from runoff events to flow through the site with minimal drainage structures.

5.1.2 Summary of Surveys

5.1.2.1 Summary of Strait-Murphy Properties Surveys

Biological surveys for the BSPP took place in 2009 and 2010. The discussion below identifies the nature of those surveys as they pertained to the Strait-Murphy Properties.

5.1.2.1.1 Vegetation Mapping

The Strait-Murphy Properties were surveyed in 2010, from 8 March through 11 May (AECOM 2010a:10).

5.1.2.1.2 Special-Status Plants

The Strait-Murphy Properties were surveyed in 2010, during surveys of the reconfigured Project Disturbance Area (PDA). Although these properties were not part of the reconfigured PDA, they were included in the 2010 survey, presumably because surveys were not permitted there in 2009 (AECOM 2010a:17; AECOM 2010b: Attachment 8). The 2010 surveys occurred from 8 March through 11 May (AECOM 2010:17).

5.1.2.1.3 Jurisdictional Waters

State Waters were not initially surveyed in Spring 2009 (AECOM 2009a:20 and Figure 7). They were subsequently surveyed on one or all of the following dates: 7 October 2009, 5-6 November 2009 and 5-8 and 10 April 2010 (AECOM 2010d:19 and Figures 12 and 13).

5.1.2.1.4 Wildlife

Desert tortoise and other wildlife were surveyed in 2010 from 15 March through 14 May (AECOM 2010a:24). Surveys were not conducted in 2009.

Focused surveys for burrowing owl were conducted in 2010, during which a Phase I habitat assessment was completed and Phase II burrow surveys were conducted between 15 March and 14 May (AECOM 2010a:24 and Figures 18 and 19). No Phase III surveys were done on the Strait-Murphy Properties because of lack of sign during the Phase II survey. No burrowing owl surveys were conducted in 2009 (AECOM 2009a:32 and Figure 6).

5.1.2.2 Summary of Porter Property Surveys

Biological surveys for the BSPP took place in 2009 and 2010. The discussion below identifies the nature of those surveys as they pertained to the Porter Property.

5.1.2.2.1 Vegetation Mapping

The Porter Property is part of the Biological Resources Survey Area (BRSA) and was included in the "buffer area" outside the Project Disturbance Area. Vegetation mapping for the entire BRSA, including the Porter Property, was completed in 2009, between 11 February and 21 April (AECOM 2009a: 19 and Figure 6).

5.1.2.2.2 Special-Status Plants

The Porter Property is included in the BRSA as part of the "buffer area" outside the Project Disturbance Area. For special-status plants, the reports (EDAW AECOM 2009a, AECOM 2010a) stated that surveys were conducted in the PDA and buffer area, but were unclear relative to the intensity and specific locations of the survey in the buffer. However, the Project Applicant's response to the December 2009 CEC Data Request showed that the Porter Property was not part of the buffer that was surveyed for special-status plants in 2009 (AECOM 2010c: Figure DR-BIO-76). The Porter Property also was not part of the 2010 survey for the reconfigured PDA (AECOM 2010a:17; AECOM 2010b: Attachment 8).

Despite the lack of surveys on the Porter Property, surveys for the Approved Project in 2009 and 2010 completely surrounded the Porter Property (AECOM 2010a). Also, the habitat on the Porter Property was mapped (AECOM 2010a: Figures 8 and 9) and is the same as that in the adjacent portions of the Approved Project. Accordingly, it is reasonably expected that the species that might be present are those found in the adjacent Approved Project, specifically Harwood's milkvetch, Utah milkvine and desert

unicorn (AECOM 2010a: Figures 10 and 11). None of these plants is a state or federally listed species.

5.1.2.2.3 Jurisdictional Waters

State Waters were surveyed on the Porter Property in 2010 (AECOM 2010d: Figures 12 and 13) and Fall 2009 (AECOM 2010d:19). A 250-foot survey buffer extended into from the PDA into the Porter property on all sides (AECOM 2010d:v and Figures 12 and 13). But, delineation was also completed on the Porter Property as part of the delineation of hydrologically connected areas outside the PDA that was completed to facilitate impacts analysis (AECOM 2010d:9). Survey dates were 7 October 2009, 5-6 November 2009 and 5-8 and 10 April 2010 (AECOM 2010d:19). State Waters were not initially surveyed in March 2009 (AECOM 2009b:20 and Figure 7).

5.1.2.2.4 Wildlife

Desert Tortoise – No surveys were conducted for desert tortoise (AECOM 2009a:29 and Figures 5 and 9; AECOM 2010a:22 and Figures 6 and 7).

Kit Fox, American Badger and other Special–Status Wildlife – No surveys were conducted (AECOM 2009a:28 and Figure 11; AECOM 2010a:20 and Figure 13).

Burrowing Owl – No surveys were conducted in 2009 (AECOM 2009a:32 and Figure 10). Surveys in 2010 extended into the Porter Property via the PDA buffer surveys that extended 492 feet into the Porter Property along all of that property's borders (AECOM 2010a:23 and Figures 6 and 7).

Although wildlife surveys were not conducted or only marginally conducted for wildlife, surveys for the Approved Project in 2009 and 2010 completely surrounded the Porter Property (AECOM 2010a). Also, the habitat on the Porter Property was mapped (AECOM 2010a: Figures 8 and 9) and is the same as that in the adjacent portions of the Approved Project. Accordingly, it is reasonably expected that the species that might be present are those found in the adjacent Approved Project in similar concentrations:

Desert Tortoise - No tortoises are expected, although they are possible in very low numbers. Surrounding sign consisted of bone fragments and questionable burrows and pallets (see AECOM 2010a: Figures 16 and 17). The more incised topography along the western edge of the Approved Project was where tortoises and definitive evidence of tortoise use were found in BSPP surveys, rather than in the flatter, more open terrain that is present on the Porter Property.

Kit Fox, American Badger and Other Special-Status Wildlife – Probably present (see AECOM 2010a: Figures 12 and 13).

Burrowing Owl - Possibly present (see AECOM 2010a: Figures 18 and 19).

Pre-construction clearance surveys (required for the Approved Project) would verify this conclusion, but there is a negligible chance that there would be unexpected results (e.g., a higher tortoise density or a listed species not observed on the Approved Project).

5.1.3 Changes in Environmental Impacts

Table 5.1-1 provides the acres that will be disturbed and require habitat compensation mitigation for addition of the Strait-Murphy and Porter Properties as well as the reduction of the Project footprint due to relocation of the eastern boundary.

TABLE 5.1-1
REVISED BIOLOGICAL RESOURCES COMPENSATION ACRES

Special-Status Biological Resource	Strait-Murphy Property (acres)	Porter Property (acres)	Comments
Desert Tortoise	160	160	AECOM (2010a: Figures 14 and 15)
Burrowing Owl	Unknown	Unknown	If compensation is necessary due to occupied burrows, it can be included in desert tortoise mitigation lands under specific conditions in BIO-18 (4)(a).
State Waters	Approximately 1.3 acres of Jurisdictional Ephemeral Channels	0	AECOM (2010d: Figure 12,Table 7)
Mohave Fringe-toed Lizard/Sand Dunes	0	0	There is no MFTL habitat on the site; all impacts are within the transmission line corridor which remains unchanged.

5.1.4 Compliance With LORS

In the Commission Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. Finding 2 at page 247 of the Final Decision states:

> With implementation of mitigation measures as appropriate, construction and operation of the planned substation and associated gen-tie connection area project would be expected to comply with all applicable LORS, and would not be expected to result in any significant adverse direct, indirect, or cumulative impacts to biological resources.

There are no new LORS that would affect the Commission's finding. However, since the project includes the addition of the Strait-Murphy and Porter Properties, an amendment to the Commission's Final Decision would also amend the Incidental Take Permit and a Lake and Streambed Alteration Agreement from the CDFG.

Additionally, since the issuance of the Final Decision the BSPP obtained a Jurisdictional Determination from the United States Army Corps of Engineers that there are no waters of the United States on the BSPP site, included in Appendix E.

5.1.5 Conditions of Certification

The conforming changes to the Conditions for the Modified Project related to biological resources are necessary only to adjust the compensation acreages by the new project phases and to adjust for the amount of habitat that will be impacted within the addition of the two private properties. In addition, the Commission will need to correct the security requirements associated with the new compensation acreages and any recent information supplied by the REAT agencies.

CONDITION OF CERTIFICATION BIO-12

BIO-12 To fully mitigate for habitat loss and potential take of desert tortoise, the project owner shall provide compensatory mitigation at a 1:1 ratio for impacts to ~~6,957~~ ***7277*** acres, adjusted to reflect the final project footprint. For purposes of this Condition, the project footprint means all lands disturbed in the construction and operation of the Blythe Project, including all linears, as well as undeveloped areas inside the project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. …

CONDITION OF CERTIFICATION BIO-22

BIO-22 The project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code sections 1600 and 1607.

1. Acquire Off-Site State Waters: The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least ~~1,384~~ ***1386*** acres of state jurisdictional waters, or the area of state waters directly or indirectly impacted by the final project footprint. The project footprint means all lands disturbed by construction and operation of the Blythe Project, including all linears. The parcel or parcels comprising the ~~1,384~~ ***1386*** acres of ephemeral washes shall include at least 639 acres of desert dry wash woodland or the acreage of desert dry wash woodland impacted by the final project footprint at a 3:1 ratio. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification **BIO12** 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.

CONDITION OF CERTIFICATION BIO-25

PVSI requests that Condition of Certification BIO-25 be deleted because it applies solely to the use of evaporation ponds and the Modified Project has eliminated the use of evaporation ponds.

CONDITION OF CERTIFICATION BIO-28

Condition of Certification BIO-28 which allows the habitat compensation lands to be acquired in phases. Once the full impact areas have been evaluated by Staff by each Phase of construction, PVSI proposes to revise this condition accordingly.

LITERATURE CITED

California Energy Commission. 2010. Blythe Solar Power Project Commission Decision. CEC-800-2010-009-CMF. 629 pp.

EDAW AECOM 2009a. Blythe Solar Power Project Biological Technical Report. Prepared for Solar Millennium, LLC. 1213 pp.

EDAW AECOM 2009b. Blythe Solar Power Project Jurisdictional Delineation Report for Regulated Waters of the United States and State. Prepared for Solar Millennium, LLC. 95 pp.

AECOM 2010a. Blythe Solar Power Project Biological Resources Technical Report. Prepared for Palo Verde Solar I, LLC. 983 pp.

AECOM 2010b. Blythe Solar Power Project Botanical Survey Report. Prepared for Palo Verde Solar I, LLC. 309 pp.

AECOM 2010c. Blythe Solar Power Project (09-AFC-6) Responses to CEC Staff Data Requests 45-97. 990 pp.

AECOM 2010d. Blythe Solar Power Project Jurisdictional Delineation Report for Regulated Waters of the United States and State. Prepared for Palo Verde Solar I, LLC. 126 pp.

5.2 WATER RESOURCES

The following paragraphs describe the characteristics of the Modified Project that could affect water resources in a different manner than the Approved Project.

5.2.1 Project Changes Related to Water Resources

Characteristics of the Modified Project that have the potential to impact water resources differently than the Approved Project include the following:

- replacement of concentrating solar helio-trough and associated HTF collections and circulation system with PV modules;
- elimination of all the power blocks and cooling towers;
- reduction in the water treatment facilities from 4 to 1;
- reduction in the acreage of evaporation ponds from up to 32 acres to up to 8 acres;
- addition of inverter pads;
- less intensive grading of the site to accommodate PV;
- elimination of the large drainage control channels; and
- reduction of water use from up to 600 AFY to up to 88 AFY.

5.2.2 Changes in Environmental Impacts

The Commission Final Decision concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS, and would not result in any unmitigated and significant direct, indirect or cumulative adverse impacts related to water resources.

The Commission Final Decision addressed three areas within the context of water resources. Those areas are: 1) potential storm water impacts related to flooding/drainage, erosion and sedimentation; 2) water supply and use, including groundwater; and 3) groundwater quality. As described below, in all cases the Modified Project results in less potential impacts than the Approved Project.

5.2.2.1 Storm Water: Flooding, Erosion and Sedimentation

Preliminary hydraulic analyses were prepared to reflect the effects of the movement of storm water under the Modified Project and are contained in Appendix B to this Petition.

Since the grading of the site is less, it is anticipated that stormwater can be controlled without the need for large drainage channels. A Preliminary Grading Design will be submitted under separate cover.

There is the potential that the hydrologic, hydraulic, and sediment response for the Modified Project may change from that of the Approved Project as a result of the PV module spacing, coverage, post size, and PV module orientation. A revised DESCP will be prepared and submitted under separate cover.

5.2.2.2 Water Supply and Use

The Modified Project would use the same groundwater wells as the Approved Project. The amount of groundwater to be used during construction is reduced from 4,100 AF to between 3,500 and 4,000 AF. Additionally the amount of groundwater used for operations will be reduced from 600 AFY for the Approved Project to a maximum of 88 AFY for the Modified Project.

This reduction in groundwater use for the Modified Project would therefore reduce the potential effects on nearby well owners or on the Palo Verde Groundwater Basin. With the Conditions of Certification contained in the Final Decision which fully mitigated the BSPP groundwater use, the Modified Project will not have a significant impact on groundwater.

An updated water mass balance diagram demonstrating water use during operations was not available at the time of this Petition and will be provided under separate cover.

5.2.2.3 Wastewater

The following paragraphs demonstrate that the impacts associated with the Modified Project on sanitary wastewater, construction wastewater, and process wastewater systems are reduced and less than significant with the implementation of the existing Conditions of Certification.

5.2.2.3.1 Sanitary Wastewater

The Modified Project would require fewer workers during construction and operation than would the Approved Project, so lower demands would be imposed on sanitary systems. The Modified Project, like the Approved Project, would utilize temporary portable toilets during construction prior to the installation of a septic tank and leach field.

5.2.2.3.2 Construction Wastewater

Wastewater generated during construction would consist of equipment washwater but would no longer include piping and vessel hydrostatic test water.

5.2.2.3.3 Process Wastewater

The Modified Project will no longer construct the 8-acres of evaporation ponds are each power block because the power blocks have been eliminated. However, water treatment facilities will be located in the central portion of the site to produce high quality water for panel washing activities. The wastewater from treatment of the groundwater will be discharged into evaporation ponds that may take up to 8 acres. The evaporation ponds will be constructed in accordance with the Commission Final Decision which includes the Waste Discharge Requirements (WDRs) from the Colorado River Basin Regional Water Quality Control Board.

5.2.3 Compliance With LORS

In the Commission Final Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. The same conclusion can be made for the Modified Project as there are neither changed circumstances nor new LORS applicable to the Modified Project since the Final Decision.

There are also no “Waters of the United States” on the BSPP site and, therefore, federal wetland permitting is not required under Section 404, and a 401 Water Quality Certification is not required either for the Approved Project or the Modified Project. See Appendix E.

5.2.4 Conditions of Certification

Minor modifications to the some of the Conditions of Certification are necessary to remove any reference to HTF is required. Additionally once the Preliminary Grading Design is completed, it may result in the need to revise Conditions of Certification **SOIL&WATER-11, 12, 13, 14, and 15.** No other modifications to the Conditions of Certification are required to accommodate the Modified Project.

5.3 CULTURAL RESOURCES

This section describes and compares the potential impacts to cultural resources between the Modified Project and the Approved Project. As demonstrated below in all cases, the Modified Project's potential environmental impacts are less than those identified in the Commission Final Decision for the Approved Project.

5.3.1 Summary of Project Changes Related to Cultural Resources

As described in Section 2 of this Petition, STA is proposing to replace all of the solar thermal facilities with PV. The four power blocks including the cooling tower will be eliminated. The PV layout will be constructed in eight 125 MW phases instead of four solar thermal power plants generating 250 MW each.

As detailed in Section 2 of this Petition, the footprint for the Modified Project will be entirely within the footprint of the Approved Project, except for the possible addition of two private parcels that are now owned by PVSI or under purchase-option contract to PVSI. The first two properties encompass 160 acres located in the center of the BSPP Project Site, and are known as the Strait/Murphy Properties. The second addition is located in the southern portion of the site, encompasses approximately 160 acres, and is known as the Porter Property. PVSI has a purchase-option agreement to purchase the Porter Property.

A cultural survey was conducted in 2010 for the Strait/Murphy properties. The Porter Property has not been surveyed. The results of the Strait/Murphy survey is summarized below.

All linear facilities will not change from the Final Decision as a result of the switch to PV technology. Within the original project footprint, the originally proposed drainage structures will not be installed because the BSPP site no longer needs to the intensive grading necessary to accommodate the solar trough technology. As described in Section 2 of this Petition, the grading necessary to accommodate either the fixed tilt or single access tracking PV systems is considerably less than that required for the original BSPP, which will allow much of the storm water from runoff events to flow through the site with minimal drainage structures.

5.3.2 Summary of Strait/Murphy and Porter Property Surveys

The Strait/Murphy Properties total 160 acres and are located in the middle of the project area. They were surveyed for both archaeology and the built environment in 2010 (AECOM letter report, May 11, 2010). The methodologies followed were the same as

for the original field survey. No cultural resources were located on the property either in the 2009 Class I literature review or in the field inventories. Historic isolated finds were recorded.

The Porter Property is a 120 acre private parcel located on the south end of the main project area. It has not been surveyed except where the Approved Project CEC survey buffer runs along the north ½ of the western boundary, the northern boundary and the eastern boundary. This buffer survey encompassed about 200 x 6780 feet (~31 acres). Approximately 14 historic isolated finds were located within or immediately adjacent to the buffer area. The Class I literature review (February 11, 2009) showed a 1977 linear survey crossing the property, for a proposed alignment of the Palo Verde-Devers Transmission Line, and no cultural resources were located in this corridor. This survey covered perhaps 200 x 3,000 feet (~14 acres). Black Creek Road, a dirt road, crosses the property from northwest/southeast.

5.3.3 Changes in Environmental Impacts

5.3.3.1 Original Footprint

Within the original footprint, blading and construction activities will still occur. Blading will be significantly less for the Modified Project. The Approved Project required the removal of up to seven feet of sediments in order to completely level the ground surface for the solar trough construction. The technology for PV, for the Modified Project, does not require a completely level project area, but will require some blading. Due to the reduced blading and depending on the Modified Project PV layout and design, there is the potential to avoid some smaller archaeological sites. This possibility will be evaluated during the design phase.

The buried gas line will no longer be necessary for this project, reducing subsurface/surface impacts for 10 miles.

For visual effects, the Modified Project will not have the power blocks with the 120-foot-tall cooling tower. The height for the solar troughs was approximately 24 feet, whereas the PV units will only be approximately 9 feet. Facility lighting will still be shielded and oriented to reduce night time illumination.

5.3.3.2 Strait/Murphy Properties

There were no archaeological sites recorded on these parcels. The Conditions for Certification established for the Approved Project will apply to project activities occurring within this parcel.

5.3.3.3 Porter Property

Very little cultural resource survey has been done on this parcel, but it is assumed that a Class III archaeological survey will be conducted for the Modified Project. Any cultural resources located during that survey are expected to be similar to those that have been recorded for the Approved Project. Two small surveys have been conducted on this land, and no archaeological sites were identified. The property is topographically indistinctive, with Pleistocene-age bajada remnants of desert pavement. The closest archaeological site is the pebble quarry, CA-RIV-3419, about 2,000 feet to the east. Data recovery occurred on this site for the Approved Project (AECOM letter report, April 11, 2011; submitted to CEC on April 12, 2011). The closest historic archaeological sites are close to the property line to both the north and east. These include SMB-H 180, 181, 182, 183, 184, 185, 194 and 195. All of these are historical refuse scatters dating to WWII DRC/C-AMA or prospecting/ranching. Isolated finds of historic artifacts were located on this property in the buffer survey which demonstrates the likelihood of other historic refuse scatters occurring on this parcel. The Conditions for Certification established for the Approved Project will apply to any resources or project activities that are found or located within this parcel.

In summary, a 160 acre parcel requires survey which could result in additional archaeological sites. They are not expected to be unique or unusual, and will fall into the same categories as has been located in the project area. Mitigation and monitoring measures will apply the same to this parcel as to the rest of the Modified Project. In other respects, there will be reductions in effects for visual, subsurface (less blading and no gas pipeline), reduced water use, and some smaller sites within the solar array area may be avoidable. Therefore, there will be no increase in effects to cultural resources from the Modified Project, and they are likely to be reduced.

5.3.4 Compliance With LORS

In the Commission Final Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. Finding 3 at page 395-196 of the Final Decision states:

> With implementation of the Conditions of Certification below, the BSPP will conform to all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision.

There are no new LORS that would affect the Commission's finding. The BLM's Record of Decision for the EIS did state that the conditions for approval for the right-of-way

grant for the project included compliance with the NHPA section 106 requirements and the Programmatic Agreement (PA).

However, since the project includes the possible addition of the private properties and the technology is changing, BLM has indicated that it will amend the PA to accommodate the new "undertaking." Under Stipulation XI for the PA, Amendments to the Agreement, BLM will notify all consulting parties and initiate a 30 day period of consultation on the amendment. With an amendment, the Modified Project will be under the jurisdiction of the PA.

The PA also has Stipulation IV. E. "Where additional identification and evaluation efforts are required due to changes in the project and the APE, the BLM and Energy Commission shall ensure that cultural resources located in the APE are identified and evaluated for the NRHP and the CRHR pursuant to Stipulation III of this agreement." Stipulation III, Identification and Evaluation, describes the methods to conduct field investigations.

The Commission is an invited signatory for the PA. The PA includes language to address CEC's concerns and involve them at all steps for identification, evaluation and assessment of effects for the project.

5.3.5 Conditions of Certification

According to the Final Decision, the adoption and implementation of the Conditions of Certification CUL-1 through CUL-18 would put the Approved Project in conformity with all applicable LORS. For the Modified Project, PVSI recommends that no modifications be made to any Conditions of Certification.

LITERATURE CITED

May 11, 2010 AECOM letter report; Blythe Solar Power Project, Riverside County, California Additional Surveys.

5.4 GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

This section describes the portions of the Modified Project that may affect the analysis, rationale, conclusions, and Conditions of Certification contained in the Commission Final Decision for the Approved Project as it relates to geological and paleontological resources.

5.4.1 Summary of Project Changes

The Modified Project removes the deeper foundations that would have been required within the power blocks for each of the four units of the Approved Project. No other aspect of the Modified Project is relevant to the analysis of geological or paleontological resources.

5.4.2 Changes in Environmental Impacts

The only change in environmental impacts to geological and paleontological resources is a reduction in the potential to discover paleontological resources for the Modified Project due to elimination of the deeper foundation excavations associated with the Approved Project.

5.4.3 Compliance With LORS

There are no differences in the LORS analysis between the Modified Project and the Approved Project. LORS relating to the design of the Modified Project as contained in the Final Decision would ensure the Modified Project is designed to minimize impacts to and from geologic hazards.

Similarly, there are no specific LORS designed to protect paleontological resources that would be applicable to the Modified Project in a manner different than would be applicable to the Approved Project.

5.4.4 Conditions of Certification

No changes to Conditions of Certification in the areas of Geological or Paleontological Resources are necessary for the Modified Project.

5.5 SOIL RESOURCES

This section describes the portions of the Modified Project that may affect the analysis, rationale, conclusions, and Conditions of Certification contained in the Commission Final Decision for the Approved Project as it relates to soil resources.

5.5.1 Summary of Project Changes

As described in Section 2.8.3.2, the grading for the Modified Project is less intensive than the grading for the Approved Project. Although the Modified Project may include 320 acres of new private land, no different soil types than those analyzed for the Approved Project will be encountered.

5.5.2 Changes in Environmental Impacts

The only change in environmental impact to soil resources is a reduction in the potential soil loss due to grading activities, and therefore the Approved Project's soil loss calculations will be more than those anticipated for the Modified Project.

5.5.3 Compliance With LORS

There are no specific LORS designed to protect soil resources that would be applicable to the Modified Project in a manner different than would be applicable to the Approved Project. Therefore the analysis contained in the Final Decision should remain unchanged for the Modified Project.

5.5.4 Conditions of Certification

No changes to Conditions of Certification in the area of Soil Resources are necessary for the Modified Project.

Section 6 LOCAL IMPACT ASSESSMENT

The following sections provide a description of the modifications proposed to the BSPP as they may affect the assumptions, rationale, and Conditions of Certification in the Commission Final Decision. As discussed in Section 2 of this Petition, PVSI has not yet selected the exact combination of fixed tilt and single access tracking PV modules for the site. Such selection will be made as part of the final design of the BSPP. However, where there are differences between the two systems, PVSI has included a comparison of each for the Commission to consider a "worse-case" for each technical area. Ultimately the selection of either fixed-tilt or tracking PV systems or a combination of both systems will not affect: the maximum or peak amount of construction and operation workers and associated traffic; the overall socioeconomic impacts; the amount of noise generated during construction or operation; or the overall visual impact of the site.

6.1 LAND USE

As described in below impacts of the Modified Project to land use are expected to remain the same as those of the Approved Project.

6.1.1 Summary of Project Changes Related to Land Use

The only change proposed by the Modified Project that is relevant to land use is the possibility of including two private parcels within the BSPP site. The Strait-Murphy Property is owned by PVSI and encompasses approximately 160 acres in the center of the site. PVSI also has an option to purchase the Porter Property (160 acres) which is located at the southern border of the site near the permitted transmission gen-tie line. .

6.1.2 Changes in Environmental Impacts

Both parcels of private land are designated Open Space-Rural by the Riverside County General Plan and are zoned W-2-10. As the Commission found in the Palen Solar Power Project, this zoning and general plan designation are consistent with the development of a solar facility.[5] Therefore, since the land use is consistent there are no land use impacts associated with the addition of these two private parcels within the Modified Project.

6.1.3 Compliance With LORS

In its Commission Final Decision, the Commission concluded that the Project is consistent with all applicable LORS. There are no new LORS that would be applicable to the Modified Project other than the zoning and general plan designation addressed above. By submitting this Petition to the Commission, PVSI subjects the Modified Project to the exclusive siting jurisdiction of the California Energy Commission[6]. Section 25500 provides:

> The issuance of a certificate by the commission shall be in lieu of any permit, certificate, or similar document required by an state, local or regional agency, or a federal agency to the extent permitted by federal law, for such used 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.

[5] Palen Solar Power Project (09-AFC-7) Final Commission Decision, Land Use page 9
[6] Public Resources Code 2550.1 (c) applies the entire chapter of the Public Resources Code to a facility that makes a Petition for Amendment.

Therefore compliance with the Commission's Petition For Amendment process will satisfy all land use related LORS applicable to the possible addition of the two private parcels.

6.2 TRAFFIC AND TRANSPORTATION

The following sections discuss the Modified Project's impacts to traffic and transportation as compared to the Approved Project.

6.2.1 Project Changes Related to Traffic and Transportation

The following aspects of the Modified Project would affect the analysis and Conditions of Certification for Traffic and Transportation.

- The construction traffic is slightly less for the Modified Project;
- The operation traffic is reduced significantly for the Modified Project; and
- The BSPP will no longer have solar trough mirrors that the Commission determined interfered with airport operations at the Blythe Airport.

6.2.2 Changes in Environmental Impacts

6.2.2.1 Construction Traffic

The Modified Project has a slightly reduced peak construction workforce. However, the reduction in workforce is not enough to warrant reduction of any of the requirements contained in the Final Decision designed to reduce impacts during the construction period.

6.2.2.2 Operations Traffic

The operations workforce is proposed to be reduced from 221 workers for the Approved Project to between 20 and 30 for the Modified Project. Therefore, traffic impacts associated with this workforce are less than those identified in the Final Decision.

6.2.2.3 Blythe Airport

The Final Decision identified potential effects on the Blythe Airport due to upward thermal plumes from the cooling towers and due to glint and glare of the reflective surface of the mirrors during low sun angle hours. First, the Modified Project will no longer require cooling towers and therefore upward thermal plumes have been eliminated. Second, since the PV panels are not as reflective as mirrors and are distant from the Blythe Airport, glint and glare should no longer be an issue for pilots using the

Blythe Airport. Additionally, the Commission should note that Riverside County recently permitted a solar PV project on the Blythe Airport property itself.[7]

6.2.3 Compliance With LORS

In its Final Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. As with the Approved Project, the Modified Project would comply with all applicable LORS, and no new or additional LORS have been identified.

6.2.4 Conditions of Certification

Since the Modified Project will not have an effect on the Blythe Airport for reasons discussed in Section 6.2.2 above, PVSI recommends that Conditions of Certification **TRANS-7, TRANS-9** and **TRANS-10** be deleted as unnecessary.

[7] On December 10, 2010 Riverside County Board of Supervisors agreed to lease 829 acres of Blythe Airport Property to NRG for construction and operation of a PV solar facility.

6.3 SOCIOECONOMICS

At the time of submittal of this Petition For Amendment the capital costs to develop, construct and operate the BSPP as a PV project were not sufficiently defined in order to perform the modeling necessary to quantify the potential economic benefits to Riverside County and particularly residents within the City of Blythe. While the analysis should not undermine any of the assumptions and rationale contained in the Commission Final Decision, PVSI has commissioned the analysis be performed. This analysis will be submitted under separate cover.

However, it should be noted that the Commission Final Decision, at pages 493-494 made the following findings:

1. A large labor pool within a two-hour commuting distance is available for construction and operation of the project.

2. Over the 69-month construction period, an average of approximately 604 daily construction workers, with a peak daily workforce of 1004, will be required depending on the month and phase of development.

3. The project will hire about 221 permanent, full-time employees from the local area for project operations.

4. The project will not cause an influx of a significant number of construction or operation workers to permanently relocate to the local area.

5. There is an adequate supply of hotels/motels and rental properties within the project vicinity to accommodate workers who stay in the area temporarily during the week and commute to their homes on the weekend.

6. The project will not result in significant adverse effects on local employment, housing, schools, public utilities, parks and recreation, law enforcement, or emergency services.

These findings are based on a construction and operation workforce much larger than proposed by the Modified Project. Therefore, the Modified Project will not alter the ultimate findings contained in the Commission Final Decision.

6.4 NOISE AND VIBRATION

This section describes the portions of the Modified Project that may affect the analysis, rationale, conclusions, and Conditions of Certification contained in the Commission Final Decision for the Approved Project as it relates noise and vibration.

6.4.1 Summary of Project Changes

The Modified Project removed the power blocks which were the source of operational noise and vibration analyzed by the Commission in its Final Decision. Construction related noise is also expected to be less as the concrete batch plant has been eliminated.

6.4.2 Changes in Environmental Impacts

Construction noise from the Modified Project is expected to be the same as the Approved Project. There are no new pieces of equipment or methods of construction that were not analyzed previously for the Approve Project.

Operational noise, however, is expected to be considerably less since there will no longer be a steam turbine, a generator and associated piping.

In addition, PVSI has a purchase option to acquire the property (Porter Property) which is the closest residential receptor. There are no other residential receptors close enough to the BSPP site to be affected by noise or vibration.

6.4.3 Compliance With LORS

The only noise-related LORS applicable to the Modified Project are the same as those that would be applicable to the Approved Project. The Modified Project will comply with all applicable noise-related LORS as enforced by the Conditions of Certification.

6.4.4 Conditions of Certification

Because the Modified Project will not generate significant noise during operations and because there are no sensitive receptors near the project, Conditions of Certification **NOISE-4, NOISE-5** and **NOISE-7** should be deleted.

6.5 VISUAL RESOURCES

As described below impacts of the Modified Project to visual resources are expected to be less than or equal to those of the Approved Project.

6.5.1 Summary of Project Changes Related to Visual Resources

Changes proposed in the Modified Project that are relevant to visual resources include:

- Elimination of the Power Blocks for all four units including the 120 foot cooling towers;
- Elimination of the solar trough mirrors which are 24 feet tall; and
- Installation of PV modules on either a fixed mounting system or a single axis tracking system that would enable the module to track the sun.

6.5.1 Changes in Environmental Impacts

The Commission Final Decision ultimately found that the Approved Project, even with mitigation, would still result in significant direct, indirect and cumulative impacts. The Modified Project will lessen those impacts because it will result in less glint and glare, will eliminate taller structures and the PV modules will be significantly less visible since they will be about a third of the height of the original solar trough mirrors.

The visual simulations for the Modified Project were not complete at the time of filing of this Petition. When complete they will be submitted under separate cover. However, for every KOP we anticipate that the visual impact will be less than the Approved Project, although not likely to be considered less than significant from all KOPs.

6.5.2 Compliance With LORS

There are no specific visual related LORS applicable to the Modified Project.

6.5.3 Conditions of Certification

No modifications to the Conditions of Certification are necessary for the Modified Project.

Section 7 POTENTIAL EFFECTS ON PROPERTY OWNERS

The Commission's Power Plant Siting Regulations require a Petition For Amendment to include 1) a discussion of how the modification affects the public; 2) a list of property owners potentially affected by the modification; and 3) a discussion of the potential effect on nearby property owners, the public and the parties in the application proceedings.

The Modified Project would not affect the public differently than the Approved Project. As described in every technical area evaluated in Sections 3, 4, 5 and 6 of this Petition, impacts of the Modified Project are either the same or less than the Approved Project. In addition to reducing impacts, the Modified Project would still result in the overall public benefits described in the Commission Final Decision.

A list of the adjacent property owners potentially affected by the Modified Project is provided in Appendix G.

Section 8 CONCLUSIONS AND RECOMMENDED FINDINGS

PVSI recommends that the Commission approve this Petition For Amendment with the Conditions of Certification changes proposed. The Petition would enable the construction and operation of the world's largest PV solar plant. The use of PV technology, in every technical area, either reduces impacts or results in impacts that are the same as the original BSPP.

The Commission originally made override findings for the BSPP accepting some impacts in exchange for the benefits of the project. The underlying rationale for those findings remains unchanged. Therefore, the Petition should be approved.

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

APPLICATION FOR CERTIFICATION FOR THE *BLYTHE SOLAR POWER PLANT PROJECT*

Docket No. 09-AFC-6

PROOF OF SERVICE
(Revised 8/27/10)

APPLICANT
Alice Harron
Senior Director of Project Development
*1111 Broadway, 5th Floor
Oakland, CA 94607
harron@solarmillennium.com

Elizabeth Ingram, Associate Developer, Solar Millennium, LLC
*1111 Broadway, 5th Floor
Oakland, CA 94607
ingram@solarmillennium.com

Carl Lindner
AECOM Project Manager
1220 Avenida Acaso
Camarillo, CA 93012
carl.lindner@aecom.com

Ram Ambatipudi
Chevron Energy Solutions
150 E. Colorado Blvd., Ste. 360
Pasadena, CA 91105
rambatipudi@chevron.com

Co-COUNSEL
Scott Galati, Esq.
Marie Mills
Galati/Blek, LLP
455 Capitol Mall, Suite 350
Sacramento, CA 95814
sgalati@gb-llp.com
mmills@gb-llp.com

Co-COUNSEL
Peter Weiner
Matthew Sanders
Paul, Hastings, Janofsky & Walker LLP
55 2nd Street, Suite 2400-3441
San Francisco, CA 94105
peterweiner@paulhastings.com
matthewsanders@paulhastings.com

INTERESTED AGENCIES
Calfornia ISO
e-recipient@caiso.com

Holly L. Roberts, Project Manager
Bureau of Land Management
Palm Springs-South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262 Office
CAPSSolarBlythe@blm.gov

INTERVENORS
California Unions for Reliable Energy (CURE)
c/o: Tany A. Gulesserian,
Elizabeth Klebaner
Marc D. Joseph
Adams Broadwell Joseph & Cardozo
601 Gate Way Boulevard,
Suite 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com
eklebaner@adamsbroadwell.com

ENERGY COMMISSION
KAREN DOUGLAS
Chairman and Presiding Member
kldougla@energy.state.ca.us

ROBERT WEISENMILLER
Commissioner and Associate Member
rweisenm@energy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud@energy.state.ca.us

Alan Solomon
Siting Project Manager
asolomon@energy.state.ca.us

Lisa DeCarlo
Staff Counsel
ldecarlo@energy.state.ca.us

Jennifer Jennings
Public Adviser's Office
e-mail service preferred
publicadviser@energy.state.ca.us

*indicates change

DECLARATION OF SERVICE

I, Marie Fleming, declare that on June 28, 2012, I served and filed copies of the attached **PALO VERDE SOLAR I, LLC'S PETITION FOR AMENDMENT**, dated June 28, 2012. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[http://www.energy.ca.gov/sitingcases/solar_millennium_blythe]

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

_____sent electronically to all email addresses on the Proof of Service list;

_X__ by personal delivery;

_X__ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_X___ sending an original paper copy and one electronic copy, via personal delivery, to the address below (***preferred method***);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-6
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Marie Fleming