



TETRA TECH EC, INC.

| |
|----------------------------------|
| DOCKET 09-AFC-8 |
| DATE <u>MAY 19 2010</u> |
| RECD. <u>MAY 21 2010</u> |

May 19, 2010

California Energy Commission
Docket No. 09-AFC-8
1516 9th St.
Sacramento, CA 95814

Genesis Solar Energy Project - Docket Number 09-AFC-8

Docket Clerk:

Enclosed for filing with this letter is one hard copy and one electronic copy of our ***Reasonably Foreseeable Development Scenario: Southern California Edison Colorado River Substation*** for the Genesis Solar Energy Project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tricia Bernhardt', is written over a light blue horizontal line.

Tricia Bernhardt
Project Manager/Tetra Tech EC

cc: Mike Monasmith /CEC Project Manager



143 Union Boulevard, Suite 1010, Lakewood, CO 80228-1875

Tel 303.988.2202 Fax 303.980.3539

www.tteci.com



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
GENESIS SOLAR ENERGY PROJECT**

Docket No. 09-AFC-8

PROOF OF SERVICE
(Revised 5/12/10)

APPLICANT

Ryan O'Keefe, Vice President
Genesis Solar LLC
700 Universe Boulevard
Juno Beach, Florida 33408
E-mail service preferred
Ryan.okeefe@nexteraenergy.com

Scott Busa/Project Director
Meg Russel/Project Manager
Duane McCloud/Lead Engineer
NextEra Energy
700 Universe Boulevard
Juno Beach, FL 33408
Scott.Busa@nexteraenergy.com
Meg.Russell@nexteraenergy.com
Duane.mccloud@nexteraenergy.com
E-mail service preferred
Matt Handel/Vice President
Matt.Handel@nexteraenergy.com
Email service preferred
Kenny Stein,
Environmental Services Manager
Kenneth.Stein@nexteraenergy.com

Mike Pappalardo
Permitting Manager
3368 Videra Drive
Eugene, OR 97405
mike.pappalardo@nexteraenergy.com

Kerry Hattevik/Director
West Region Regulatory Affairs
829 Arlington Boulevard
El Cerrito, CA 94530
Kerry.Hattevik@nexteraenergy.com

APPLICANT'S CONSULTANTS

Tricia Bernhardt/Project Manager
Tetra Tech, EC
143 Union Boulevard, Ste 1010
Lakewood, CO 80228
Tricia.bernhardt@tteci.com

James Kimura, Project Engineer
Worley Parsons
2330 East Bidwell Street, Ste.150
Folsom, CA 95630
James.Kimura@WorleyParsons.com

COUNSEL FOR APPLICANT

Scott Galati
Galati & Blek, LLP
455 Capitol Mall, Ste. 350
Sacramento, CA 95814
sgalati@gb-llp.com

INTERESTED AGENCIES

California-ISO
e-recipient@caiso.com

Allison Shaffer, Project Manager
Bureau of Land Management
Palm Springs South Coast
Field Office
1201 Bird Center Drive
Palm Springs, CA 92262
Allison_Shaffer@blm.gov

INTERVENORS

California Unions for Reliable
Energy (CURE)
c/o: Tanya A. Gulesserian,
Rachael E. Koss,
Marc D. Joseph
Adams Broadwell Joesph
& Cardoza
601 Gateway Boulevard,
Ste 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com
rkoss@adamsbroadwell.com

*Tom Budlong
5439 Soquel Drive
3216 Mandeville Cyn Rd.
Los Angeles, CA 90049-1016
tombudlong@roadrunner.com

Californians for Renewable
Energy, Inc. (CARE)
Michael E. Boyd, President
5439 Soquel Drive
Soquel, CA 95073-2659
michaelboyd@sbcglobal.net

OTHER

Alfredo Figueroa
424 North Carlton
Blythe, CA 92225
lacunadeaztlan@aol.com

ENERGY COMMISSION

JAMES D. BOYD
Commissioner and Presiding
Member
jboyd@energy.state.ca.us

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

Kenneth Celli
Hearing Officer
kcelli@energy.state.ca.us

Mike Monasmi
Siting Project Manager
mmonasmi@energy.state.ca.us

Caryn Holmes
Staff Counsel
cholmes@energy.state.ca.us

Robin Mayer
Staff Counsel
rmayer@energy.state.ca.us

Jennifer Jennings
Public Adviser's Office
publicadviser@energy.state.ca.us

I, Tricia Bernhardt, declare that on May 19, 2010, I served and filed copies of the ***Reasonably Foreseeable Development Scenario: Southern California Edison Colorado River Substation*** for the Genesis Solar Energy Project dated May 19, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/genesis_solar].

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:

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

 x by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

 x sending an original paper copy and one electronic copy, mailed and emailed respectively, 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-8
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.

Original Signed By:



Tricia Bernhardt

GENESIS SOLAR ENERGY PROJECT
REASONABLY FORSEEABLE DEVELOPMENT
SCENARIO

SOUTHERN CALIFORNIA EDISON
COLORADO RIVER SUBSTATION

Dated: May 19, 2010

INTRODUCTION

This document is intended to describe Southern California Edison's (SCE's) proposed 230 kV expansion of the already-permitted (but not yet constructed) 500 kV Colorado River Substation (CRS).

Unlike the transmission line that would go from the Genesis Solar Energy Project's (Genesis) power plant to the CRS (often referred to as the "gen-tie"), SCE's CRS is not part of the Genesis project description. Rather, the CRS is an SCE project that SCE would permit, construct, own and operate to serve several projects in the area. However, because the proposed expansion of the CRS is a reasonably foreseeable development scenario, a description of the expansion and any associated potential environmental impacts will be addressed in the NEPA and CEQA-equivalent documents being prepared by the BLM and the CEC for the Genesis project. In Figure A-1, the CRS facilities are presented in one color and the Genesis gen-tie is presented in another color to visually present where the Genesis Gen-tie ends and where SCE's CRS begins. Figure A-2 shows a close up of the CRS boundaries.

This document presents a description of the reasonably foreseeable proposed 230 kV expansion of the CRS including disturbance foot print, the existing environment, and potential environmental impacts. Detailed environmental survey reports will be submitted under separate cover within the next several weeks.

1.0 COLORADO RIVER SUBSTATION EXPANSION PROJECT DESCRIPTION

1.1 PROJECT OVERVIEW:

1.1.1 Description of Project Elements

Southern California Edison (SCE) proposes to construct the Colorado River Substation Expansion (Project) near Blythe in Riverside County, California (Figure 1) to interconnect solar development projects in the Blythe area of the Mohave Desert to SCE's previously approved Colorado River Substation. The Project site was one of three sites analyzed in the Devers – Palo Verde No. 2 500 kV Transmission Line (DPV2) Final Environmental Impact Statement (FEIS)/Environmental Impact Report (FEIR). The site was determined to be environmentally acceptable in the DPV2 FEIS/FEIR and was included in the Certificate of Public Convenience and Necessity (CPCN) issued by the California Public Utilities Commission (CPUC) for the DPV2 Project in CPCN Decision D.07-01-040, dated January 25, 2007.

The following is a summary of the Colorado River Substation Expansion Project components common to multiple solar development projects that are described more fully in this document:

- Colorado River Substation Expansion Project (Project): Expand the 500 kV switchyard, previously approved as part of the DPV2 CPCN on approximately 45 acres of land, into a full 500/220 kV substation on approximately 90 acres of land.

Appendix A of this document contains information specific to the generation tie line for the Genesis Solar Energy Project.

Other related work components specifically associated with the previously approved DPV2 project are fully described in the DPV2 FEIS/FEIR, and therefore not described in this document, include:

- Colorado River Substation: Construct a new 500 kV switchyard, including appropriate support facilities, on approximately 45 acres of land.
- Transmission Lines: Loop the existing Devers-Palo Verde (DPV) 500 kV transmission line and terminate the new Devers-Colorado River (DCR) transmission line into the Colorado River Substation by adding a total of approximately 2,000 feet of new transmission lines (three lines of approximately 1,000 feet each located side-by-side within a corridor approximately 1,000 feet wide), Modification of existing 220 kV structures: The necessary crossing of the new NextEra Resources Buck-Julian Hinds 220 kV transmission lines by the proposed SCE 500 kV loop-in lines may require modifications. New tubular steel poles (details to be determined during detailed engineering phase) to modify the construction at the crossing location may be needed to replace the existing 220kV poles.
- Distribution Line for Substation Light and Power: Construct approximately 2500 feet of 12 kV overhead distribution line and approximately 1,000 feet of underground distribution line to connect a nearby existing distribution system to the Colorado River Substation to provide substation light and power.

Additional SCE-specific system components exclusively associated with each of the solar development interconnections to the Project are presented in separate Appendices to this Project Description.

This Project Description and the land disturbance estimates are based on planning level assumptions. Additional details would be clarified following completion of detailed engineering, identification of field conditions, labor availability, equipment, and compliance with applicable environmental and permitting requirements. The numbers presented in Table 1 are preliminary and subject to change as the result of detailed engineering.

1.1.2 Approval Process and Approving Public Agencies

Solar development projects have been proposed in the vicinity of Blythe, located on primarily government land under the jurisdiction of the Bureau of Land Management (BLM). The solar development projects would interconnect with SCE's regional transmission system via 220 kV gen-tie lines from each solar project to the Project, where they would connect to SCE's bulk

transmission system via SCE's previously approved Colorado River Substation, DPV and DCR 500 kV transmission lines. SCE would construct and own the Project.

Each solar developer will submit an Application to the BLM for a Right-of-Way Grant for their specific solar project. If approved, the BLM will issue a Record of Decision and a Notice to Proceed allowing construction of the proposed solar development project under the administration of the BLM. Each solar developer may also submit a separate Application-For-Certification (AFC) to the California Energy Commission (CEC) for approval to construct their solar development project. The BLM and the CEC have agreed to work cooperatively and conduct joint National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) reviews of the solar development projects, including the solar developers' substations and the Project. Prior to approval of the Project, the BLM and CEC will have a joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) prepared by a third-party environmental consultant which analyzes the environmental impacts associated with each proposed solar development project.

The CPUC will participate as a Reviewing Agency in the CEQA review of the Colorado River Substation Expansion Project's components summarized in Section 1.1.1. It is anticipated that the BLM, the CEC, and the third party environmental consultant will work closely with the CPUC to ensure the Project is in compliance with CEQA.

Other permits may also be required from other federal agencies (e.g. Federal Communication Commission, Federal Aviation Administration, etc.), state agencies (e.g. California Department of Transportation, Department of Toxic Substances Control, South Coast Air Quality Management District, etc.) and local agencies (e.g. Riverside County, cities and local fire departments, etc.) for the construction and operation of the proposed substation expansion.

1.1.3 Duration of Construction Activities and Projected Operation Date

Construction of the Project elements identified in this document is expected to start in the fourth quarter of 2011 and would proceed through the projected substation operating date of approximately May 2013.¹

1.2 PROJECT LOCATION:

1.2.1 Regional and Local Location

The Project (Figure 1) would be located on an approximately 140 acre parcel of land located approximately 1.5 miles south of Interstate 10 and 4.75 miles east of Wileys Well Road, in the County of Riverside, California. The Project would be generally located in the eastern portion of the parcel. The approximate center of the Project would be at 33.59 degrees north and 114.82 degrees west. However, the specific location of the substation may shift up to 700 ft. to the west staying with the area encompassed by environmental surveys.

¹ Proposed operating date and construction timeline is still under development and subject to regulatory approval timeline, Large Generator Interconnection Agreement execution and other matters.

1.2.2 Substation Site Land Use

The proposed Project site is on a BLM-owned parcel that would be granted for use by SCE. The proposed location for the Project is designated Open Space-Rural in the Riverside County General Plan. Portions of the County's eastern half are located within a Specific Area Plan boundary however; the proposed Project site is included in the Eastern Riverside County Areas that are not located within an Area Plan. The proposed Project site as well as the surrounding area is zoned Open Space-Rural (OS-RUR). Single-family residential uses are permitted at a density of one dwelling unit per 20 acres.

1.3 SUBSTATION DISCUSSION:

1.3.1 Introduction

SCE proposes to construct the Project to interconnect the proposed solar development project(s) to SCE's previously approved Colorado River Substation, DPV and DCR 500 kV transmission lines. The 500 kV transmission lines will connect to the Project by looping the lines into the previously approved Colorado River Substation. A 220 kV gen-tie line(s) would be extended from the solar development project(s) to the Project and associated expansion.

1.3.2 Substation Design and Equipment

The Project along with the approved Colorado River Substation would be an initial 1120MVA 500/220kV substation measuring approximately 1,600 feet by 2,400 feet enclosed area to loop the DPV and DCR 500kV lines and provide for the solar developers' 220 kV gen-tie line position(s). The substation and Project will be surrounded by a wall with two gates.

1.3.2.1 Development Plan

The Project Plan is presented in Figure 2.

1.3.2.2 Electric and magnetic fields (EMF)

A NEPA analysis does not commonly include a discussion of potential environmental impacts from electric and magnetic fields (EMF) due to the lack of a consensus among scientists that EMF exposure poses a risk to human health. Nor are there any CEQA standards regarding the analysis of potential human health risks caused by EMF exposure. However, the EIS prepared for this project is expected to contain a discussion of EMF to accommodate the public's interest and concern regarding potential human health effects related to EMF exposure from transmission lines.

Although there are no NEPA or CEQA standards regarding the analysis of potential human risks associated with EMF exposure, the CPUC reviewed and updated its EMF policy in 2006 (CPUC Decision 06-01-042) for California's regulated electric utilities. This policy decision update reaffirmed the finding that state and federal public health regulatory agencies have not established a direct link between exposure to EMF and human health effects, and that the existing "no-cost and low-cost" precautionary-based EMF policy should be continued for electrical facilities. As the electrical infrastructure is upgraded in California, measures to reduce magnetic fields will be incorporated into the project design in accordance with the California

EMF Design Guidelines for Electrical Facilities, CPUC Decision 93-11-013 and CPUC Decision 06-01-042. Furthermore, the design of the proposed substation and transmission lines will incorporate “no-cost and low-cost” measures such as placing major substation electrical equipment away from the substation property lines to reduce magnetic fields. These measures would be documented in a project specific Field Management Plan.

1.3.3 Substation Construction

1.3.3.1 Grading and Drainage

The Project would be prepared by clearing existing vegetation and installing a temporary chain-link fence to surround the construction site. The site would be graded in accordance with approved grading plans. The area to be enclosed by the proposed substation perimeter wall would be graded to a slope that varies between one and two percent and compacted to 90 percent of the maximum dry density.

The Project site is located east of the Chuckwalla Dunes area and shows evidence of surface storm water runoff through the proposed site. While no designated Blue-line streams are located within the Project, it may still necessary to redirect surface water flow around one side of the substation. The combined Colorado River Substation and Project’s northern boundary may need to be protected from surface runoff by the installation of a berm designed to direct the flow around both sides of the substation pad. These drainage improvements would potentially disturb an area approximately 80 feet wide around three sides of the fenced in substation, resulting in a total permanent disturbance area of approximately 20 acres.

Internal surface runoff would be directed towards a detention basin located at the south end of the substation. The basin would measure approximately 120 feet by 200 feet occupying approximately one-half acre and would be enclosed by an 8-foot high chain-link fence and one 20-foot wide double drive gate.

The final site drainage design would be subject to the conditions of the grading permit obtained from the County of Riverside.

Table 1 provides the approximate volume and type of earth materials to be used or disposed of at the Project site (within the substation wall and the required drainage structures outside/around the substation).

**TABLE 1
COLORADO SUBSTATION EXPANSION SITE - GROUND SURFACE
IMPROVEMENT MATERIALS AND ESTIMATED VOLUMES**

| Element | Material | Approximate Volume (yd³) ⁽¹⁾ |
|---|-----------------|---|
| Site Cut ⁽²⁾ | Soil | 190,000 |
| Site Fill ⁽²⁾ | Soil | 190,000 |
| Waste Removal (export) | Soil/Vegetation | 20,000 |
| Substation Equipment Foundations | Concrete | 10,000 |
| Equipment and cable trench excavations ⁽³⁾ | Soil | 10,000 |

| | | |
|-------------------------------|--|--------|
| Cable Trenches ⁽⁴⁾ | Concrete | 200 |
| Internal Driveway | Asphalt concrete | 1,200 |
| | Class II aggregate base | 2,800 |
| External Driveway | Asphalt concrete | 0 |
| | Class II aggregate base | 0 |
| Substation Rock Surfacing | Rock, nominal 1 to 1-1/2 inch per SCE Standard | 15,000 |

- (1) The material volumes presented in Table 1 are for the 45 acre Project site work only. Additional material volumes needed for surface improvement of the 45 acre Colorado River Substation are included in the previously approved DPV2 FEIS/FEIR.
- (2) The design concept would be intended to balance the earthwork quantities, utilizing any site cut material as site fill material, where feasible.
- (3) Excavation "spoils" would be placed on site during the below-ground construction phase and used to the extent possible for the required on-site grading.
- (4) Standard cable trench elements are factory fabricated, delivered to the site and installed by crane. Intersections are cast-in-place concrete.

The numbers presented in Table 1 are preliminary and subject to change as the result of detailed engineering.

1.3.3.2 Staging Areas

Additional temporary land disturbance (up to approximately 10 acres) adjacent to the Project may be necessary for temporary equipment storage and material staging areas associated with construction efforts.

1.3.3.3 Geotechnical Studies

Prior to the start of construction, SCE expects to conduct a geotechnical study of the Project site and the transmission line routes that would include an evaluation of the depth to the water table, evidence of faulting, liquefaction potential, physical properties of subsurface soils, soil resistivity, slope stability, and the presence of hazardous materials.

1.3.3.4 Below Grade Construction

After the Project site is graded, below grade facilities would be installed. Below grade facilities include a ground grid, underground conduit, trenches, and all required foundations. The design of the ground grid would be based on soil resistivity measurements collected during the geotechnical investigation conducted prior to construction.

1.3.3.5 Equipment Installation

Above grade installation of substation facilities associated with the Project (i.e., buses, circuit breakers and steel structures) would commence after the below grade structures are in place.

1.3.3.6 Hazards and Hazardous Materials

Construction of the Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. All hazardous materials would be stored, handled and used in accordance with applicable regulations. Material Safety Data Sheets would be made available at the construction site for all crew workers.

The Storm Water Pollution Prevention Plan prepared for the Colorado River Substation and Project would provide the locations for storage of hazardous materials during construction, as well as protective measures, notifications, and cleanup requirements for any incidental spills or other potential releases of hazardous materials.

1.3.3.7 Waste Management

Construction of the Project would result in the generation of various waste materials that can be recycled and salvaged. Waste items and materials would be collected by construction crews and separated into roll off boxes at the materials staging area. All waste materials that are not recycled would be categorized by SCE in order to assure appropriate final disposal. Non-hazardous waste would be transported to local authorized waste management facilities.

Soil excavated for the Project would either be used as fill or disposed of off-site at an approved licensed facility.

1.3.3.8 Post-Construction Cleanup

Any damage to existing roads as a result of construction would be repaired once construction is complete, in accordance with local agency requirements.

Following completion of construction activities, SCE would also restore all areas that were temporarily disturbed by construction of the Project to as close to preconstruction conditions as possible, or, where applicable, to the conditions agreed upon between the landowner and SCE. In addition, all construction materials and debris would be removed from the area and recycled or properly disposed of off-site at local authorized waste management facilities. SCE would conduct a final inspection to ensure that cleanup activities were successfully completed.

1.3.3.9 Land Disturbance

Table 2 provides a preliminary estimate of temporary and permanent land disturbance related to construction of the Project (outside the substation fence and the required drainage structures outside/around the Project). The numbers presented in Table 2 are preliminary and subject to change as the result of detailed engineering.

**TABLE 2
PROJECT CONSTRUCTION
ESTIMATED LAND DISTURBANCE SUMMARY ⁽¹⁾**

| Construction Activity | Acres Temporarily Disturbed | Acres Permanently Disturbed |
|------------------------------|------------------------------------|------------------------------------|
| Substation Grading | - | 45.0 |
| Drainage/Side Slopes | - | 20.0 |
| Access Road | - | - |
| Staging Area | 10.0 | - |
| Total Acres Disturbed | 10.0 | 65.0 |

- (1) The land disturbance estimates presented in Table 2 are for the 45 acre Project site work only. Initial land disturbance for the 45 acre switchyard grading and access road are included as part of the DPV2 FEIS/FEIR.

1.3.3.10 Construction Equipment and Labor

The estimated elements, materials, number of personnel and equipment required for construction of the Project are summarized below in Table 3 below. The numbers presented in Table 3 are preliminary and subject to change as the result of additional detailed engineering.

In addition to the information provided in Table 3, a temporary office trailer and equipment trailer may be placed within the proposed construction area during the construction phase of the Project.

Construction would be performed by either SCE construction crews or contractors, depending on the availability of SCE construction personnel at the time of construction. Contractor construction personnel would be managed by SCE construction management personnel. SCE anticipates a minimum of approximately 25 construction personnel working on any given day. SCE anticipates that crews would work concurrently whenever possible; however, the estimated deployment and number of crew members would be dependent upon city permitting, material availability, and construction scheduling. For example, electrical equipment (such as substation MEER, wiring, and circuit breaker) installation may occur while transmission line construction proceeds.

Construction activities would generally be scheduled during daylight hours in accordance with applicable noise abatement ordinances. In the event construction activities need to occur on different days or hours, SCE would obtain variances as necessary from appropriate jurisdiction where the work would take place.

TABLE 3
PROJECT EQUIPMENT AND LABOR ESTIMATES (PRELIMINARY)

| Activity and number of Personnel | Number of Work Days | Equipment and Quantity | Duration of Use (Hours/Day) |
|----------------------------------|---------------------|---|---|
| Survey (2 people) | 10 | 2-Survey Trucks (Gasoline) | 8 |
| Grading (8 people) | 60 | 1-Dozer (Diesel) 2-Loader (Diesel) 1-Scraper (Diesel) 1-Grader (Diesel) 2-Water Truck (Diesel) 2-4X4 Backhoe (Diesel) 1-4X4 Tamper (Diesel) 1-Tool Truck (Gasoline) 1-Pickup 4X4 (Gasoline) | 4 4 3 3 2 2 2 2 2 |
| Fencing (4 people) | 25 | 1-Bobcat (Diesel) 1-Flatbed Truck (Gasoline) 1-Crewcab Truck (Gasoline) | 8 2 4 |

| Activity and number of Personnel | Number of Work Days | Equipment and Quantity | Duration of Use (Hours/Day) |
|---|----------------------------|--|--|
| Civil (8 people) | 90 | 1-Excavator (Diesel) 1-Foundationauger (Diesel) 2-Backhoes (Diesel) 1-Dump truck (Diesel) 1-Skip Loader (Diesel) 1-Water Truck (Diesel) 2-Bobcat Skid Steer (Diesel) 1-Forklift (Propane) 1-17TonCrane (Diesel) 1-Tool Truck (Gasoline) | 4 5 3 2 3 3 3 4 2 hours/day for 45 days 3 |
| MEER (6 people) | 60 | 1-Carry-all Truck (Gasoline) 1-tool truck (Gasoline) 1-Stake Truck (Gasoline) | 3 2 2 |
| Electrical (10) people) | 120 | 2-Scissor Lifts (Propane) 2-Manlifts (Propane) 1-Reach Manlift (Propane) 1-15 ton Crane (Diesel) 1-Tool Trailer 3-Crew Trucks (Gasoline) | 3 3 4 3 3 2 |
| Wiring (6 people) | 90 | 1-Manlift (Propane) 1-Tool Trailer | 4 3 |
| Maintenance Crew Equipment Check (2 people) | 30 | 2-MaintenanceTrucks (Gasoline) | 4 |
| Testing (2 people) | 90 | 1-Crew Truck (Gasoline) | 3 |
| Asphalting (6 people) | 40 | 2-Paving Roller (Diesel) 1-Asphalt Paver (Diesel) 1-Stake Truck (Gasoline) 1-Tractor (Diesel) 1-Dump Truck (Diesel) 2-Crew Trucks (Gasoline) 1-Asphalt Curb Machine (Diesel) | 4 4 4 3 3 2 3 |

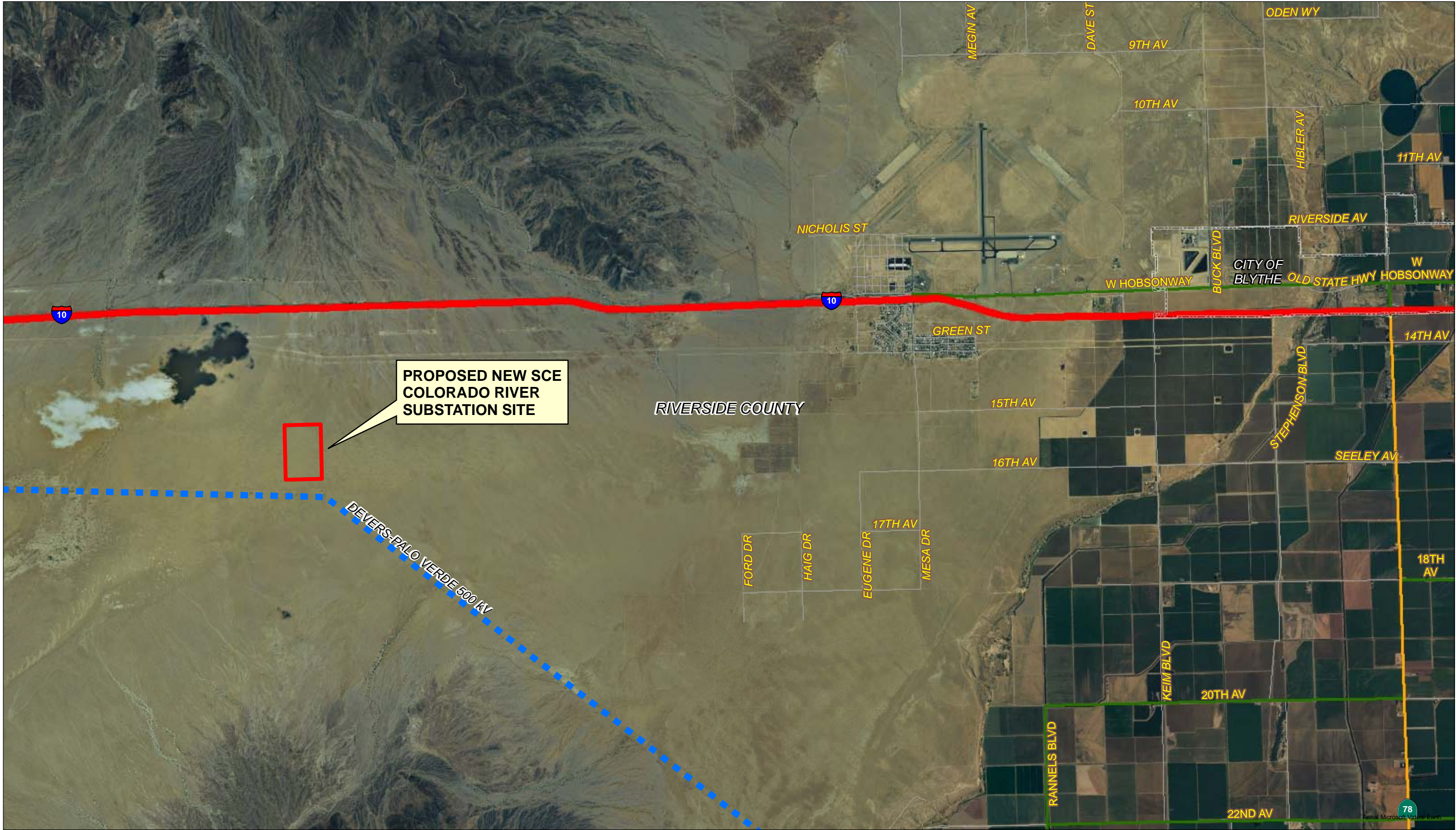


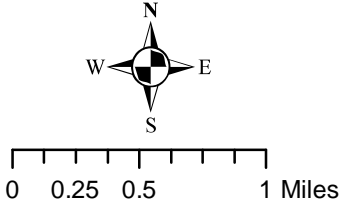
FIGURE 1
PROPOSED NEW SCE COLORADO RIVER
SUBSTATION SITE

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.
© Real Properties - Survey and Mapping.

Thomas Bros. Maps is a registered trademark of Rand McNally & Company. Reproduced with permission granted by Rand McNally & Company.
© Rand McNally & Company. All rights reserved.

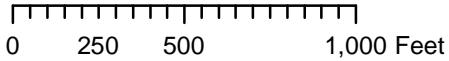
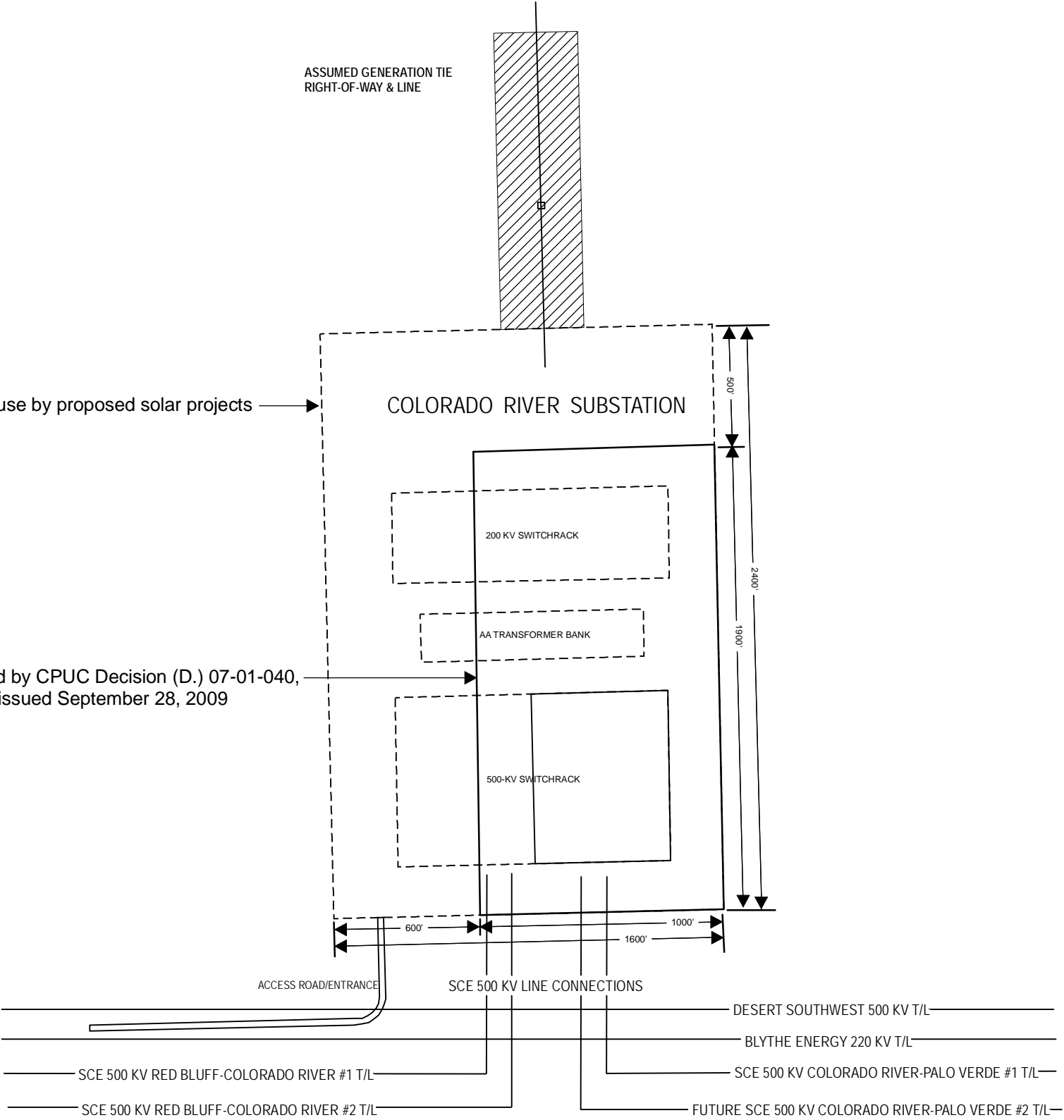
Legend

| | | | | | |
|--|---|--|------------------------|--|------------------------|
| | Proposed Red Bluff Substation Sites | | Freeways (TBM, 2008) | | Minor Road (TBM, 2008) |
| | Existing 500kV Transmission Lines (SCE, 2009) | | Highways (TBM, 2008) | | Railroad (TBM, 2008) |
| | | | Major Road (TBM, 2008) | | |



Parcel identified for use by proposed solar projects

Approved by CPUC Decision (D.) 07-01-040,
issued September 28, 2009



COLORADO RIVER SUBSTATION
SITE DEVELOPMENT PLAN

THIS LAYOUT EXHIBIT IS BASED ON PLANNING LEVEL ASSUMPTIONS.
THE EXTRACT DETAILS WOULD BE DETERMINED FOLLOWING COMPLETION OF PRELIMINARY AND FINAL ENGINEERING,
IDENTIFICATIONS OF FIELD CONDITIONS, AND COMPLIANCE WITH APPLICABLE ENVIRONMENTAL AND PERMITTING REQUIREMENTS.



FIGURE 2
PROPOSED NEW SCE COLORADO RIVER
SUBSTATION SITE
DEVELOPMENT PLAN

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.
© Real Properties - Survey and Mapping.



APPENDIX A

PROJECT DESCRIPTION OF THE GENERATION INTERCONNECTION

FROM

**NEXTERA ENERGY'S PROPOSED FORD DRY LAKE/GENESIS SOLAR ENERGY
PROJECT**

TO

**SOUTHERN CALIFORNIA EDISON'S PROPOSED COLORADO RIVER
SUBSTATION**

1.0 PROJECT DESCRIPTION OF THE GENERATION INTERCONNECTION FROM THE END OF THE GEN-TIE FROM NEXTERA ENERGY'S PROPOSED FORD DRY LAKE/GENESIS SOLAR ENERGY PROJECT TO SOUTHERN CALIFORNIA EDISON'S PROPOSED COLORADO RIVER SUBSTATION

1.1 PROJECT OVERVIEW

1.1.1 Description of Project Elements

NextEra Energy Resources, LLC (Developer) proposes to construct, own, and operate the Ford Dry Lake/Genesis Solar Energy Project (Project). The Project site is located north of I-10 approximately 25 miles west of the city of Blythe, California, on lands managed by the Bureau of Land Management (BLM) in an unincorporated area of Riverside County, California (Figure 1). The project consists of two solar thermal electric generating facilities with a nominal net electrical output of 125 megawatts (MW) each for a total net electrical output of 250 MW. The project will utilize solar parabolic trough technology to generate electricity. The two 125MW solar thermal electric generating facilities will connect to a 220kV switchyard constructed by the Developer at the Project site.

The Developer proposes to construct a 220 kV generation interconnection transmission line from the Developer's switchyard at the Project site to the Southern California Edison (SCE) regional transmission grid at SCE's proposed Colorado River Substation near Blythe (Figure A-1)). The following is a summary of the generation interconnection components:

- **Generation Tie Line Connection:** SCE would connect the Developer-built 220kV generation tie line (gen-tie) into the Colorado River Substation by installing the last span of conductor between the 220kV switchrack and the first Project transmission line structure north of the substation.
- **Telecommunications Facilities:** The Developer would utilize optical ground wire (OPGW) on the interconnection generation tie-line and would terminate the fiber optics cables inside the Project substation. SCE would install the last span of fiber optics cable between the 220kV switchrack and the first Project transmission line structure north of Colorado River Substation. SCE would make the final terminations to associated communications equipment installed inside both SCE's Colorado River Substation and the Project's substation.

1.1.2 Duration of Construction Activities and Projected Operation Date

Subject to execution of a Large Generation Generator Agreement (LGIA) between SCE, the Developer, and the California System Independent System Operator (CAISO), construction of the interconnection facilities identified in Section 1.1.1 are expected to occur in the first quarter of 2013.

1.1.3 220 kV Generation Tie-line Extension Design

The proposed Colorado River Substation design includes bringing the final span from the Project 220 kV gen-tie line into the switchrack, just north of the Colorado River Substation (see Figure A-2). There would be a single-circuit lattice steel (LST) or tubular steel pole (TSP) structure just north of the Colorado River Substation for the connection of the Project gen-tie line to a 220 kV position inside the Colorado River Substation.

While the Project 220 kV gen-tie line would initially carry 250 MW, the TSPs or LSTs are expected to be designed for maximum future load, potentially utilizing 2B-1590 kcmil “Lapwing” Aluminum Conductor Steel Reinforced (ACSR) conductor. SCE would work with the Developer to determine what conductor would be installed.

The first structure constructed by the Developer would be located just north of the Colorado River Substation and would be a dead end structure. SCE would work with the Developer to integrate final design. SCE would construct, own, operate, and maintain the final span of the circuit from the substation dead end structure to the tower connection at the first Project structure (See Figure A-2).

1.1.4 Gen-tie Transmission Line Construction

1.1.4.1 Construction of 220kV Gen-tie Transmission Structure(s)

The construction of the 220kV gen-tie structure to the north and west of the Colorado River Substation would be the responsibility of the Developer.

1.1.4.2 Wire Stringing of 220 kV Conductor

Wire-stringing includes all activities associated with the installation of conductors. This activity includes the installation of primary conductor and overhead ground wire (OHGW), vibration dampeners, weights, spacers, and suspension and dead-end hardware assemblies. Insulators and stringing sheaves (rollers or travelers) are typically attached during the steel erection process.

A standard wire-stringing plan includes a sequenced program of events starting with determination of wire pulls and wire pull equipment set-up positions. Advanced planning by supervision determines circuit outages, pulling times, and safety protocols needed for ensuring that safe and quick installation of wire is accomplished.

Wire-stringing activities would be conducted in accordance with SCE specifications, which is similar to process methods detailed in Institute of Electrical and Electronics Engineers Standard (IEEE) 524-2003, Guide to the Installation of Overhead Transmission Line Conductors.

Wire pulls are the length of any given continuous wire installation process between two selected points along the line. Wire pulls are selected, where possible, based on availability of dead-end structures at the ends of each pull, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing

equipment setups. In some cases, it may be preferable to select an equipment setup position between two suspension structures. Anchor rods would then be installed to provide dead-ending capability for wire sagging purposes, and also to provide a convenient splicing area.

To ensure the safety of workers and the public, safety devices such as traveling grounds, temporary grounding grid/mats around stringing equipment, guard structures, and radio-equipped public safety roving vehicles and linemen would be in place prior to the initiation of wire-stringing activities.

The following four steps describe the wire installation activities utilized by SCE:

- Step 1: Sock Line, Threading: Typically, a lightweight sock line is passed from structure to structure, which would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a particular set of spans selected for a conductor pull.
- Step 2: Pulling: The sock line would be used to pull in the conductor pulling cable. The conductor pulling cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. A piece of hardware known as a running board would be installed to properly feed the conductor into the roller; this device keeps the bundle conductor from wrapping during installation.
- Step 3: Splicing, Sagging, and Dead-ending: After the conductor is pulled in, the conductor would be sagged to proper tension and dead-ended to structures.
- Step 4: Clipping-in, Spacers: After the conductor is dead-ended, the conductors would be secured to all tangent structures; a process called clipping in. Once this is complete, spacers would be attached between the bundled conductors of each phase to keep uniform separation between each conductor.

The dimensions of the area needed for the stringing setups associated with wire installation are variable and depends upon terrain. For this project, SCE estimates that an area of 150 feet by 500 feet (1.72 acres) would be optimal for tensioning equipment set-up sites. An area of 150 feet by 300 feet (1.03 acres) would be optimal for pulling and equipment set-up sites; however, crews can work from within slightly smaller areas when space is limited. Each stringing operation would include one puller positioned at one end and one tensioner and wire reel stand truck positioned at the other end.

For stringing equipment that cannot be positioned at either side of a dead-end transmission structure, field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension.

The puller and tensioner set-up locations require level areas to allow for maneuvering of the equipment. When possible, these locations would be located on existing level areas and existing roads to minimize the need for grading and cleanup. The final number and locations of the puller and tensioner sites would be determined during detailed engineering for the Proposed Project and the construction methods chosen by SCE or its Contractor.

An overhead ground wire (OHGW) for shielding would be installed on the transmission line. The OHGW would be installed in the same manner as the conductor; it is typically installed in conjunction with the conductor, depending upon various factors, including line direction, inclination, and accessibility.

1.1.4.3 Land Disturbance

Table A-1 below provides an estimate of temporary and permanent land disturbance areas related to construction of the gen-tie transmission lines. The numbers presented in Table A-1 are preliminary and subject to change as the result of detailed engineering.

**TABLE A-1
COLORADO RIVER SUBSTATION
GEN-TIE TRANSMISSION LINE CONSTRUCTION – LAND DISTURBANCE**

| Project Feature | Site Quantity | Disturbed Acreage Calculation (L x W) | Acres Disturbed During Construction | Acres Temporarily Disturbed | Acres Permanently Disturbed |
|--|----------------------|--|--|------------------------------------|------------------------------------|
| Install New 220 kV Gen-Tie Span to Switchrack (1) | 1 | 150' x 300' | 1.03 | 1.03 | 0.00 |
| TOTAL ESTIMATED DISTURBED ACRES (2) | | | 1.03 | 1.03 | 0.00 |
| Notes to Table B-1: | | | | | |
| 1. Structure construction work, including foundation installation, structure assembly & erection is the responsibility of the Developer, and is therefore not described here. All disturbance herein is solely for the installation of the final SCE-owned span between the final structure and the substation 220kV switchrack. This work would require only temporary disturbance area to set up wire stringing and pulling equipment. | | | | | |
| 2. The disturbed acreage calculations are estimates based upon SCE's preferred area of use for the described project feature, the width of the existing right-of-way, or the width of the proposed right-of-way and, they do not include any new access/spur road information; they are subject to revision based upon final engineering and review of the project by SCE's Construction Manager and/or Contractor awarded project. | | | | | |
| Note: All data provided in this table is based on planning level assumptions and may change following completion of more detailed engineering, identification of field conditions, availability of material, and equipment, and any environmental and/or permitting requirements. | | | | | |

TABLE A-2
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
INSTALL NEW 220 KV TRANSMISSION LINE GEN-TIE
COLORADO RIVER SUBSTATION PROJECT

| WORK ACTIVITY | | | | ACTIVITY PRODUCTION | | | |
|---------------------------------------|-----------------------|--------------------|----------------------------|---------------------|---------------------------|---------------------------|------------------------------|
| Primary Equipment Description | Estimated Horse-Power | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (Days) | Duration of Use (Hrs/Day) | Estimated Production Per Day |
| Install Conductor & GW (1) | | | | 20 | 2 | | 0.1 Circuit Miles |
| 1-Ton Crew Cab Truck, 4x4 | 300 | Diesel | 2 | | 2 | 8 | |
| Wire Truck/Trailer | 350 | Diesel | 2 | | 2 | 2 | |
| Dump Truck (Trash) | 350 | Diesel | 1 | | 2 | 2 | |
| Rough Terrain Crane | 350 | Diesel | 1 | | 2 | 2 | |
| 22-Ton Manitex | 350 | Diesel | 2 | | 2 | 8 | |
| 30-Ton Line Truck | 350 | Diesel | 4 | | 2 | 6 | 0.37 Mile/Day |
| Static Truck/Tensioner | 350 | Diesel | 1 | | 2 | 6 | |
| Sock Line Puller | 300 | Diesel | 1 | | 1 | 6 | |
| Bull Wheel Puller | 525 | Diesel | 1 | | 1 | 6 | |
| 580 Case Backhoe | 120 | Diesel | 1 | | 2 | 2 | |
| Lowboy Truck/Trailer | 500 | Diesel | 2 | | 2 | 2 | |

Crew Size Assumptions:

| |
|--|
| #1 Conductor & GW Installation = one 20-man crew |
|--|

1.1.5 Telecommunication System Description

A telecommunication system would be required in order to provide monitoring and remote operation capabilities of the electrical equipment at the Project Substation, and transmission line protection. To provide this system, SCE would build the following (subject to confirmation with Developer for the OPGW):

- Line protection, Supervisory Control and Data Acquisition (SCADA) and telecommunications circuit from the Project Substation to the Colorado River Substation and Devers Substation on an optical system utilizing optical ground wires (OPGW) on the 220 kV gen-tie line.
- SCE would construct a duct bank from the Colorado River Substation mechanical-electrical equipment room (MEER) to the new transmission tower of the solar Developer's 220kV generator tie line. The duct bank from the MEER

would contain one five inch duct. The trench would be dug 36 inches deep and 18 inches wide. The conduit would be laid in and then covered with slurry. The slurry would be covered with soil that came from the excavation. The total length of the duct is approximately 1,000 feet.

1.1.5.1 Land Disturbance

Table A-3 provides a preliminary estimate of temporary and permanent land disturbance related to installation of the telecommunication system between the Colorado River Substation and the Project Substation. The numbers presented in Table A-3 are preliminary and subject to change as the result of detailed engineering.

**TABLE A-3
COLORADO RIVER SUBSTATION –
NEXTERA FORD DRY LAKE/GENESIS SOLAR ENERGY PROJECT
SUBSTATION
TELECOMMUNICATION SYSTEM CONSTRUCTION –
ESTIMATED LAND DISTURBANCE**

| Construction Activity | Acres Temporarily Disturbed | Acres Permanently Disturbed |
|---|------------------------------------|------------------------------------|
| Duct from Colorado River Substation telecom vault to first 220kV tower outside station ⁽¹⁾ | 0.03 | - |
| Total Acres Disturbed | 0.03 | - |

(1) 1,000 feet long by 1.5 feet wide trench.

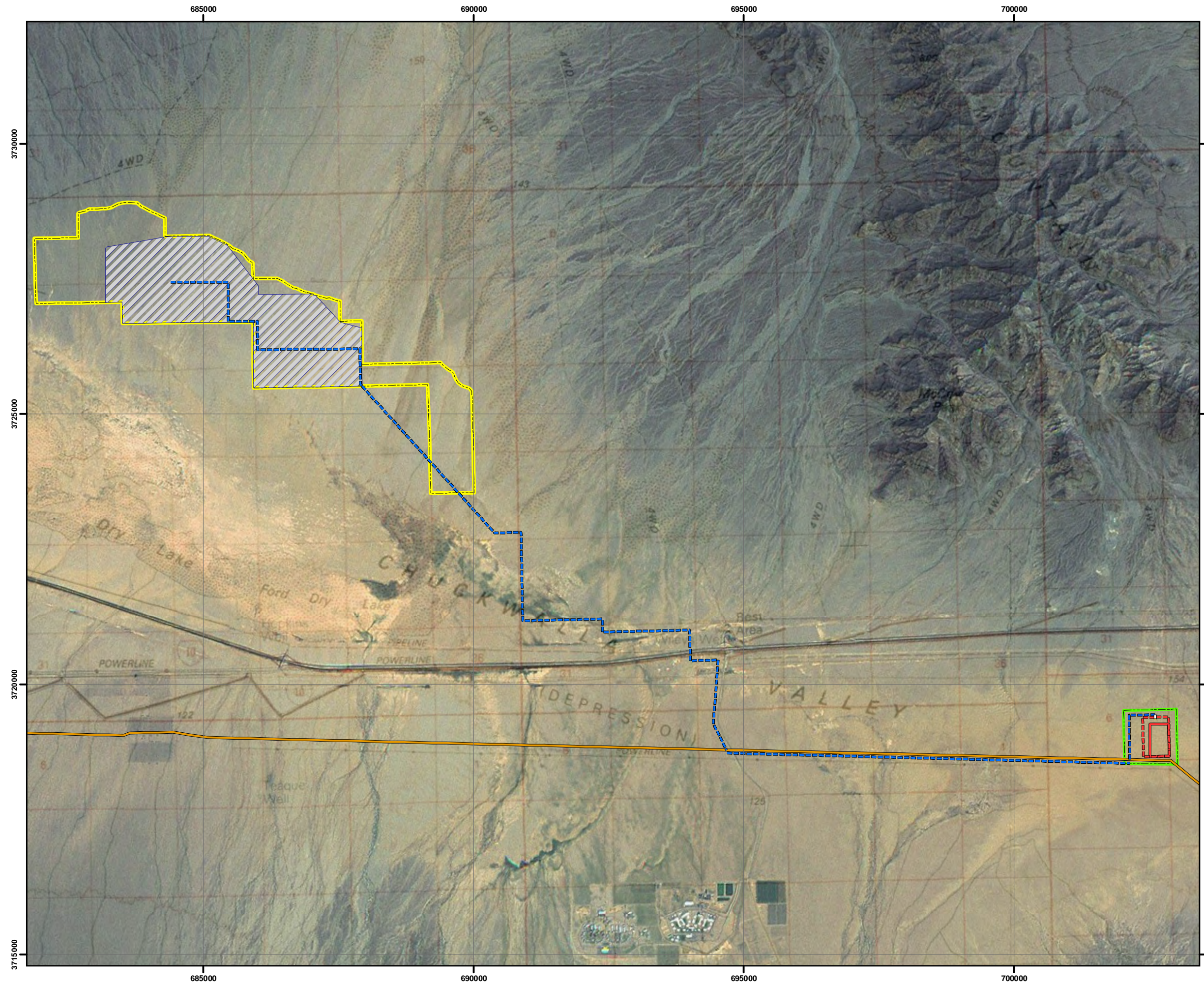
1.1.5.2 Construction Equipment and Labor

See Table A-4 for the construction workforce and type of equipment expected to be used in constructing the proposed telecommunications facilities. The numbers presented in Table A-3 are preliminary and subject to change as the result of detailed engineering.

**TABLE A- 4
COLORADO RIVER SUBSTATION –
NEXTERA FORD DRY LAKE/GENEIS SOLAR ENERGY PROJECT
SUBSTATION
TELECOMMUNICATION SYSTEM CONSTRUCTION
EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY**

| Construction Activity | Number Of Personnel | Number Of Days | Equipment Requirements |
|--------------------------------------|----------------------------|-----------------------|--|
| Trench Construction | 5 | 4 | 2-crew trucks (gas/diesel) 1-backhoe (diesel) 1-stakebed truck (diesel) 1-concrete mixer (diesel) |
| Underground Fiber Cable Installation | 5 | 2 | 1-crew trucks (gas/diesel) 2-line trucks (diesel) |
| Telecommunications Installation Crew | 2 | 10 | 2-vans (gas) |

Figure A-1



GENESIS SOLAR, LLC

**GENESIS SOLAR ENERGY PROJECT
RIVERSIDE COUNTY,
CALIFORNIA**



Legend

- Existing Blythe Energy Transmission Line
- Genesis Generation Tie Line
- Genesis Project Site
- Facility Footprint
- Proposed 230kv Expansion Area
- 500kv Footprint Permitted By CPUC In 2009
- Spring 2010 Biological Resources Survey Area

Notes:

(a) UTM Zone 11, NAD 1983 Projection.

(b) Source data: ESRI, TTEC, Alice Karl & Assoc.

**GENESIS GENERATION TIE IN
COLORADO RIVER SUBSTATION**


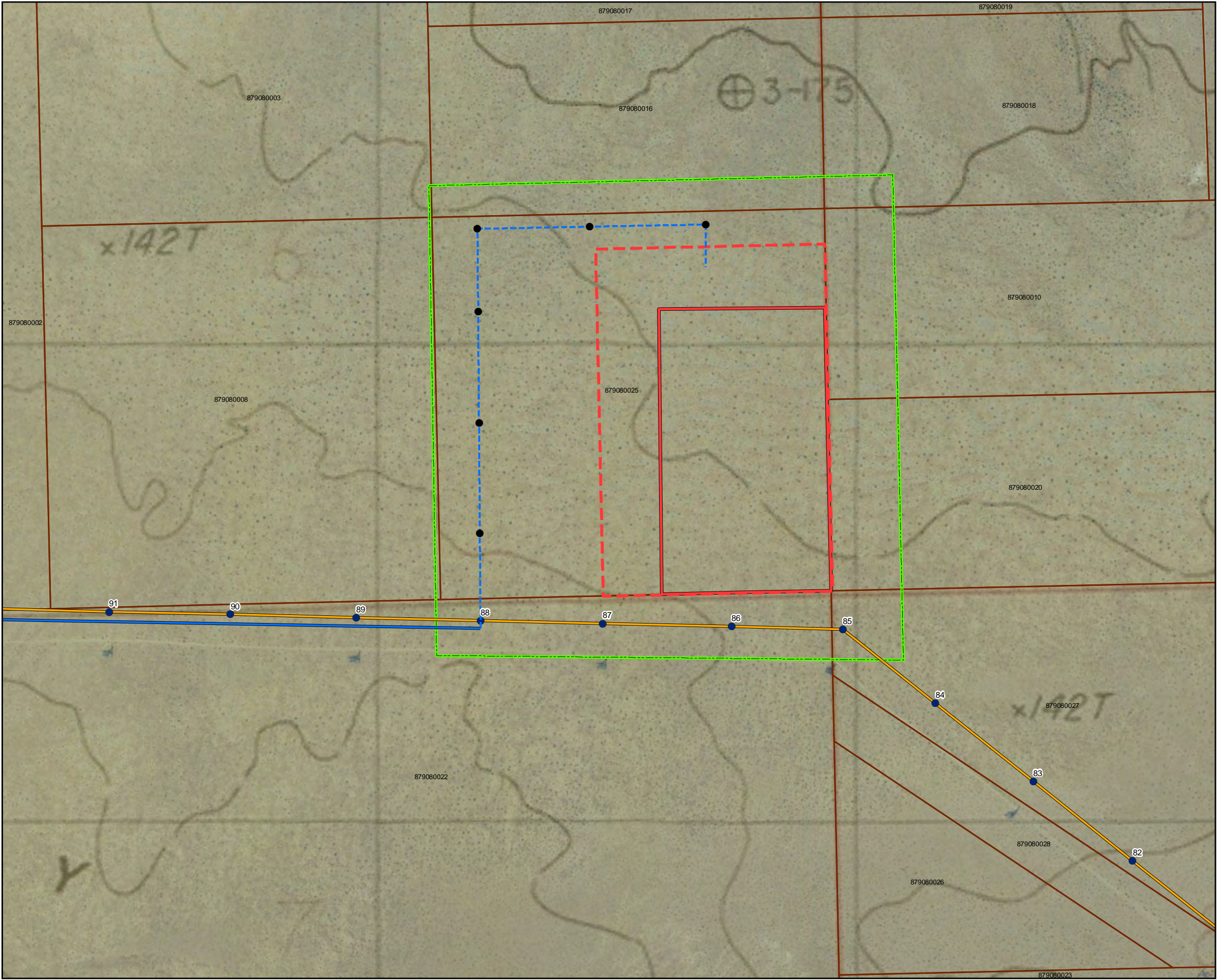
 **TETRA TECH** EC, INC.

Figure A-2



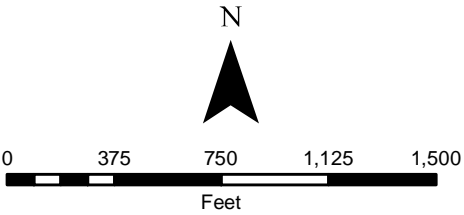
GENESIS SOLAR, LLC

**GENESIS SOLAR ENERGY PROJECT
RIVERSIDE COUNTY,
CALIFORNIA**



Legend

- Additional Generation Tie Line W/ 6 Additional Generation Tie Poles
- Existing Blythe T-line
- Remainder Of Genesis Generation Tie Line
- Spring 2010 Biological Resources Survey Area
- Parcels
- SCE CO River Substation (CRS)**
 - 500kv Footprint Permitted By CPUC In 2009
 - Proposed 230kv Expansion Area



Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, TTEC, Alice Karl & Assoc.

**COLORADO RIVER SUBSTATION
DETAIL**

