

**DOCKET**

**09-AFC-8C**

DATE MAR 26 2012

RECD. MAR 28 2012

March 26th, 2012

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

**Subject: Genesis Solar, LLC's Petition for Genesis Solar Energy Project  
Docket No. (09-AFC- 8)**

Dear Mr. Veerkamp,

On behalf of Genesis Solar, LLC, I am pleased to submit this Petition for Amendment for the Genesis Solar Energy Project (GSEP) (09-AFC-8). The changes being presented in the Amendment were discussed in a meeting with the California Energy Commission on March 22<sup>nd</sup>, 2012. We are confident that the requested changes are minor and insignificant.

There are several reports that provide detailed documentation of the additional surveys that were conducted to support this Amendment:

- The Class III Cultural Resources Report will be submitted under confidential cover to the CEC as is required for cultural reports.
- The Biological Resources Technical Memorandum will be submitted under separate cover.
- The Air Modeling Report will be submitted under separate cover.

We appreciate your review and consideration of this Amendment. Please let us know if there questions or requests for clarification on any issues.

Sincerely,



Scott A. Busa  
Executive Director

# **Genesis Solar Energy Project Eastern Riverside County, California**

## **Amendment (09-AFC-08)**

Submitted to the:

**California Energy Commission**

Prepared By:



**TETRA TECH EC, INC.**

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Lakewood, CO 80228

for

**Genesis Solar, LLC**

**March 2012**

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**Attachments**

Attachment A. Modification to Equipment Descriptions and Conditions

## ABBREVIATIONS AND ACRONYMS

AFC	Application for Certification
ATC	Authority to Construct
BETL	Blythe Energy Transmission Line
BLM	Bureau of Land Management
CDFG	California Department and Fish and Game
CEC	California Energy Commission
cm	centimeter
CRHR	California Register of Historical Resources
CRS	Colorado River Substation
FDOC	Final Determination of Compliance
FSEIR	Final Supplemental Environmental Impact Report
ft.	feet
FWS	U.S. Fish and Wildlife
Genesis Solar	Genesis Solar, LLC
gen-tie	generation tie
GSEP	Genesis Solar Energy Project
I-10	Interstate-10
kV	kilovolt
LGIA	Large Generation Interconnection Agreement
LORS	laws, ordinances, regulations and standards
MDAQMD	Mojave Desert Air Quality Management District
MW	megawatt
NRHP	National Register of Historic Places
NTP	Notice to Proceed
Project	Genesis Solar Energy Project
ROW	right-of-way
RTU	remote terminal unit
SCE	Southern California Edison
SLR	single lithic reduction
SoCal Gas	Southern California Gas Company
SSC	Species of Special Concern

## 1.0 INTRODUCTION

In August of 2009, Genesis Solar, LLC (Genesis Solar) a wholly owned subsidiary of NextEra Energy Resources, LLC, submitted an Application for Certification (AFC) to the California Energy Commission (CEC) for the Genesis Solar Energy Project (GSEP or Project). The CEC certified the Project in its Final Decision dated September 29, 2010, Docket Number 09-AFC-08 (Final Decision or License).

The GSEP is licensed as a nominally rated 250-megawatt (MW) solar thermal power generating facility located in Riverside County, California, between the community of Desert Center and the City of Blythe. The GSEP is located on land managed by the Bureau of Land Management (BLM). The Project Disturbance Area, which includes both permanent and temporary disturbance, will be approximately 1,819.5 acres, and includes approximately 1,727 acres for the Plant Site and approximately 70 acres for the Linear Facilities. The Plant Site includes the solar arrays, power blocks, power generating equipment, support facilities, and evaporation ponds. The Linear Facilities include a transmission line and an access road to serve the transmission line, natural gas pipeline, and a main access road connecting the GSEP Plant Site to the Wiley's Well Interchange off of I-10 (Figure 1).

In addition to the CEC's Final decision, the Project received its Right-of-Way (ROW) Grant from BLM in November, 2010 and Notice to Proceed (NTP) to construct Phase I from both the CEC and BLM in January 2011. Genesis Solar received its Final NTP from the CEC and BLM for construction of the remainder of the GSEP in September 2011. In addition to the construction of the solar facility itself, the activities that will occur given this final NTP include construction of a gas pipeline, the Generation Tie (gen-tie) line from the Plant Site to the Colorado River Substation (CRS) and access/spur roads along the gen-tie line.

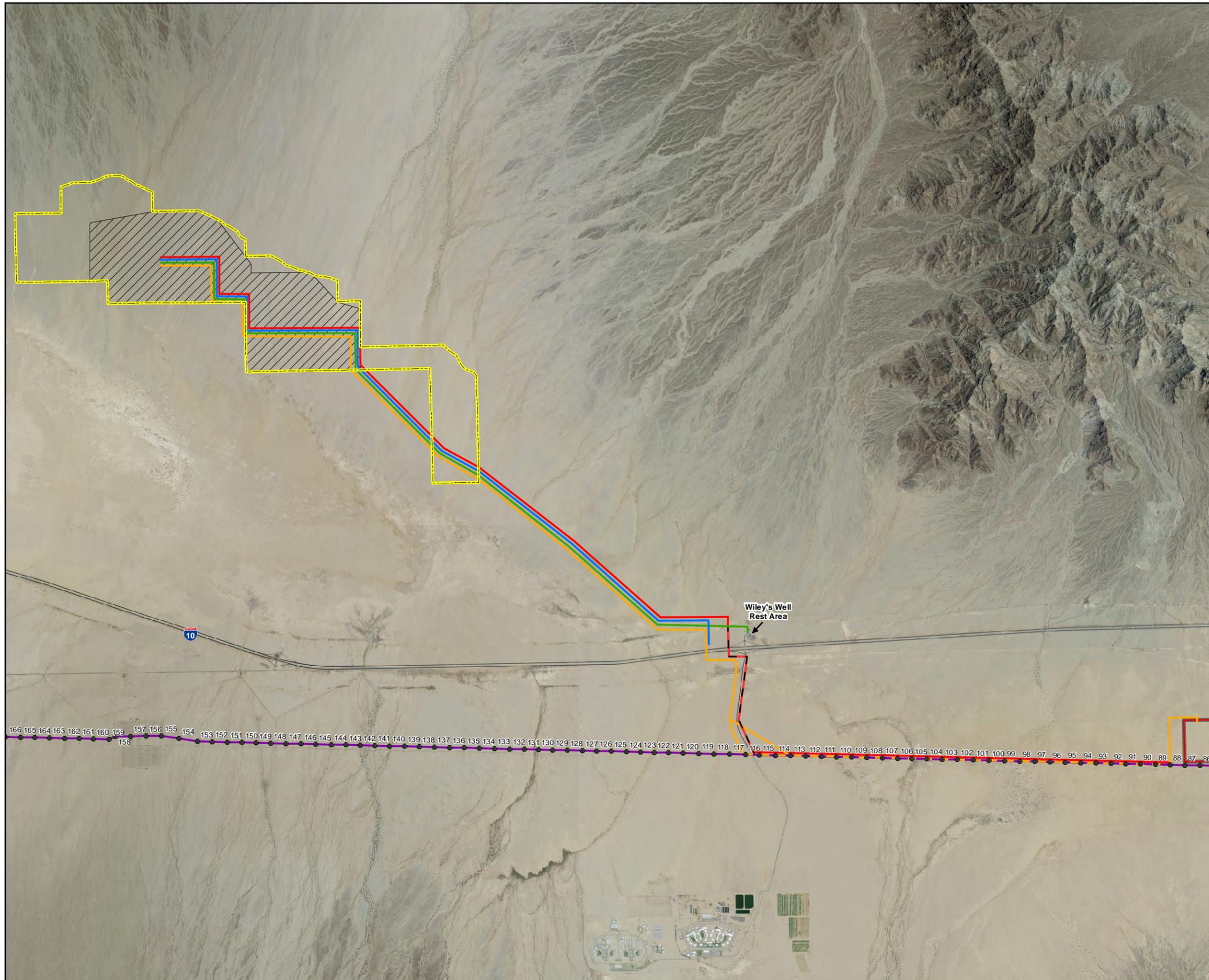
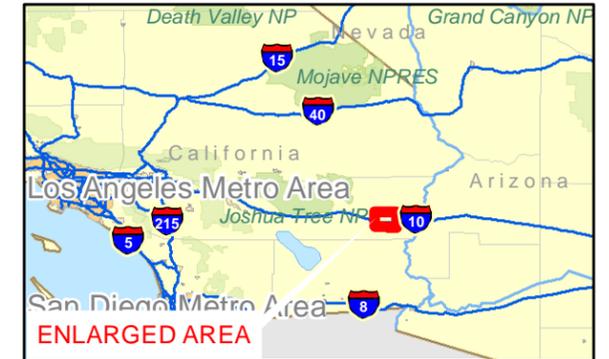
The Air Quality Conditions of Certification contained in the GSEP Final Decision were based on the Final Determination of Compliance (FDOC) issued by the Mojave Desert Air Quality Management District (MDAQMD) on July 20, 2010. On November 4, 2011, the MDAQMD issued a set of nine Authority to Construct (ATC) permits for the Project. All of the permit conditions in the ATC permits were the same as the conditions contained in the FDOC. However, the new ATC permits contained more detailed equipment descriptions than had been in the FDOC. Furthermore, the new MDAQMD ATC permits did not include permits for cooling towers. On February 13, 2012, AECOM filed an Application for Modification of these ATC permits on behalf of Genesis Solar to provide updated equipment description and emissions information based on the equipment actually purchased for the Project.

***In accordance with Title 20 CCR Section 1769, Genesis Solar, LLC hereby files this Petition for Amendment of the GSEP Final Decision (Petition) to reflect:***

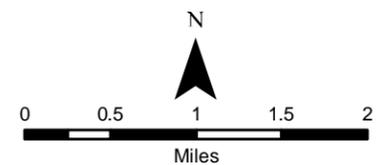
- ***modifications needed to the existing gen-tie line,***
- ***an alternative gen-tie route,***
- ***modifications to the gas line,***
- ***modifications necessary due to the new location of SCE's Colorado River Substation, and***
- ***modifications to conform the Commission Decision to permits issued by MDAQMD, along with updates to the equipment descriptions.***

# Genesis Solar, LLC

## GENESIS SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CALIFORNIA



- Blythe Energy Project Transmission Line
- Blythe Energy Project Transmission Line Structure
- Transmission Interconnect
- Genesis Transmission Interconnect on Existing BETL Poles
- Gas Line
- Access Road
- Distribution Line/Redundant Communication Line
- Redundant Communication Line in Existing ROW
- Projec Requested ROW
- Genesis Plant Site
- Previously Poposed Colorado River Substation (SCE)



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

**FIGURE 1  
ORIGINAL GSEP LAYOUT**



This Petition discusses the proposed modifications and demonstrates consistency with the applicable laws, ordinances, regulations and standards (LORS). Additionally, the Petition demonstrates that the proposed modifications are based upon new information that does not change or undermine the assumptions, rationale, findings, or other basis of the Final Decision.

Section 2 of this Petition includes a discussion of the unforeseen circumstances that have resulted in the need for the modifications, and the proposed options to the existing gen-tie route, and why these changes were not identified prior to issuance of the Final Decision. Section 3 provides an overview of the modifications and the proposed options. Section 4 provides the analysis demonstrating that the proposed modifications will comply with all applicable LORS and will not result in significant environmental impacts. This Section also confirms that changes to Conditions of Certification are not necessary to accommodate the proposed modifications, except for two of the Conditions related to Air Quality. Section 5 contains the required analysis of potential effects on surrounding property owners and the general public.

## **2.0 UNFORESEEN CIRCUMSTANCES RESULTING IN NECESSARY CHANGES**

The proposed modifications to the substation location and gen-tie routes are the result of changed circumstances outside of the control of the Project since the time of the CEC's Final Decision and the BLM's ROW Grant. Unforeseen factors contributed to the need for modifications of the existing linear route and the addition of a few pieces of equipment related to the project interconnection to the CRS. These factors include:

1. Relocation of the CRS
2. Location of the SoCal Gas Station where the GSEP will need to tie into
3. Execution of the Large Generator Interconnect Agreement in August of 2011
4. Changes related to the air quality permits

### **2.1 Relocation of the Colorado River Substation**

Following the issuance of the CEC's Final Decision and the BLM's ROW Grant, Southern California Edison (SCE) changed the location of the CRS. On April 29, 2011 the California Public Utilities Commission staff released the Final Supplemental Environmental Impact Report (FSEIR) in which it recommended that the originally proposed location of the CRS should not be approved. Instead the FSEIR identified two alternatives that are environmentally superior to the original CRS location. In June, 2011 a decision was made to choose the southern alternative. A Record of Decision for the Devers-Palo Verde No. 2 Transmission Line Project confirmed that they will be connecting into the new southern location of the CRS. The new location of the CRS is assumed to be permanent at this time and is being proposed and finalized for other projects in the area.

This unforeseen change has impacted the project in a couple of ways. First, SCE has pushed the commercial operation date for the CRS to August 2013 which is approximately eight months later than originally requested by the GSEP. Second, with the CRS in a position to the south of the gen-tie structures, the gen-tie route approaching the substation will need to be modified. Finally, the interconnection agreement allows for metering and protection equipment that will need to be installed due north of the CRS northern boundary.

## **2.2 Change in Natural Gas Tie-In Location**

In addition to the change in location and timing of construction of the CRS, additional discussions with Southern California Gas Company (SoCal Gas) have resulted in a change to the point of interconnect where the GSEP will tie into the SoCal Gas natural gas pipeline. Because the GSEP will not be a major industrial user of natural gas, SoCal Gas requires GSEP to tie into a Reducer Valve Station for their low pressure line located to the south of Interstate-10 (I-10) and east of Wiley's Well Road instead of a metering station located within the current GSEP ROW (north of I-10 and west of Wiley's Well Road). SoCal Gas will construct, own and operate the pipeline from the reducer station to the metering station within the GSEP ROW north of I-10. This amendment addresses the two possible routes between the Reducer Valve Station and the meter.

## **2.3 Changes to Large Generation Interconnection Agreement**

Given these unforeseen changes, Genesis Solar is requesting approval of modifications to the existing linear route and the addition of equipment required under the Large Generation Interconnection Agreement (LGIA) that was executed in August 2011. Sections 3 and 4 of this petition will provide specific details on the modifications that are being requested and will demonstrate the environmental impacts of each request.

## **2.4 Changes Related to Issuance of the MDAQMD ATC Permits**

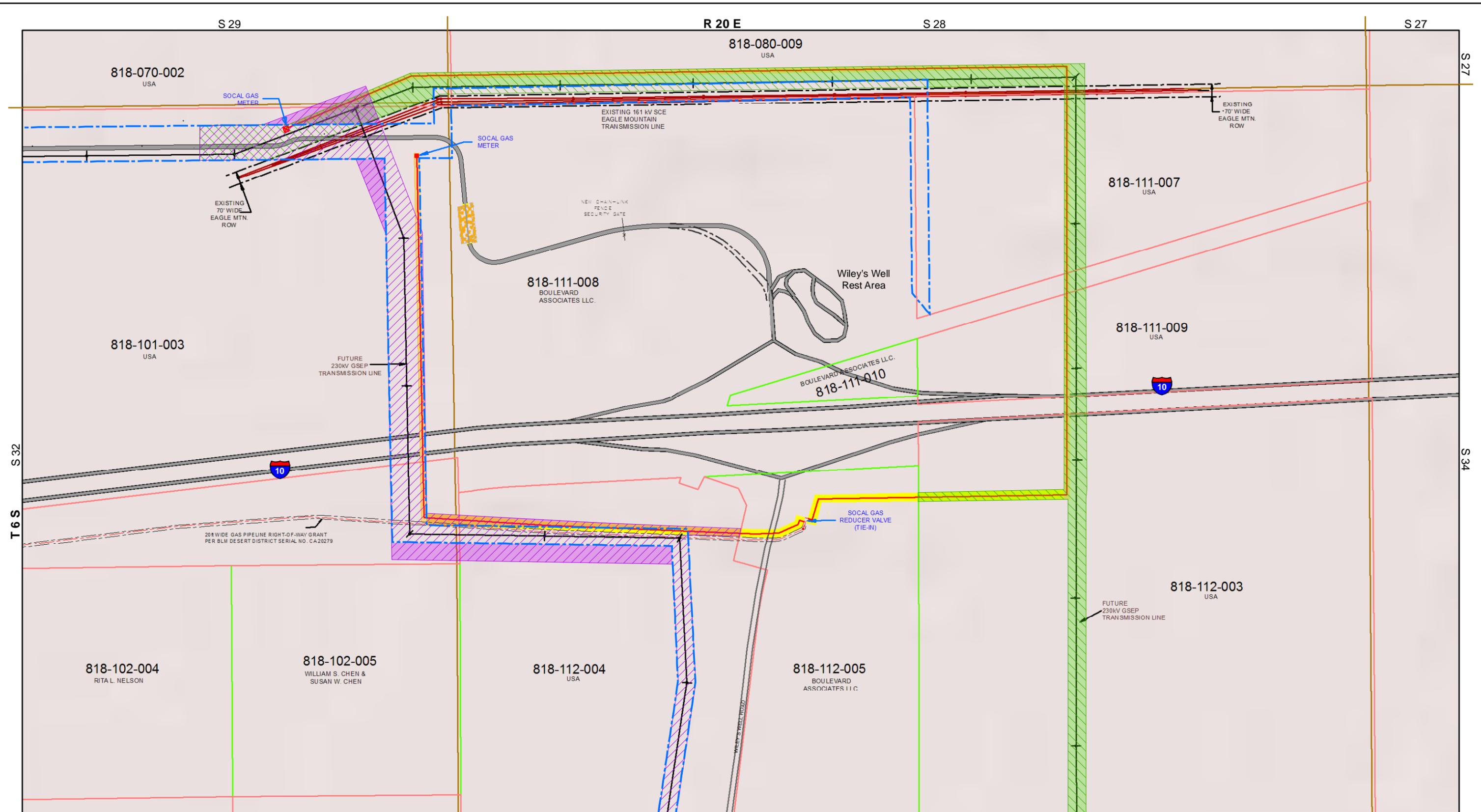
As noted in Section 1, MDAQMD included more detailed equipment descriptions in the ATC permits issued in November of 2011. There were also slight changes to the emissions from some of the engines based on actual manufacturer specifications for the engines selected for the project. In some cases, it was necessary for Genesis Solar to provide additional clarifications regarding the selected equipment and to seek modification to the ATC permits. The changes to the equipment descriptions and emissions are shown in Attachment A.

Additionally, the project originally proposed two very large wet, mechanical draft cooling towers, one for each of the two power units. These towers cooled the circulating water used to condense the steam from the steam turbines. These towers have been replaced with Air Cooled Condensers that do not require water. However, it was determined during the final design of the facilities that two very small package type cooling systems will be needed to remove heat from the Closed Cooling Water Systems.

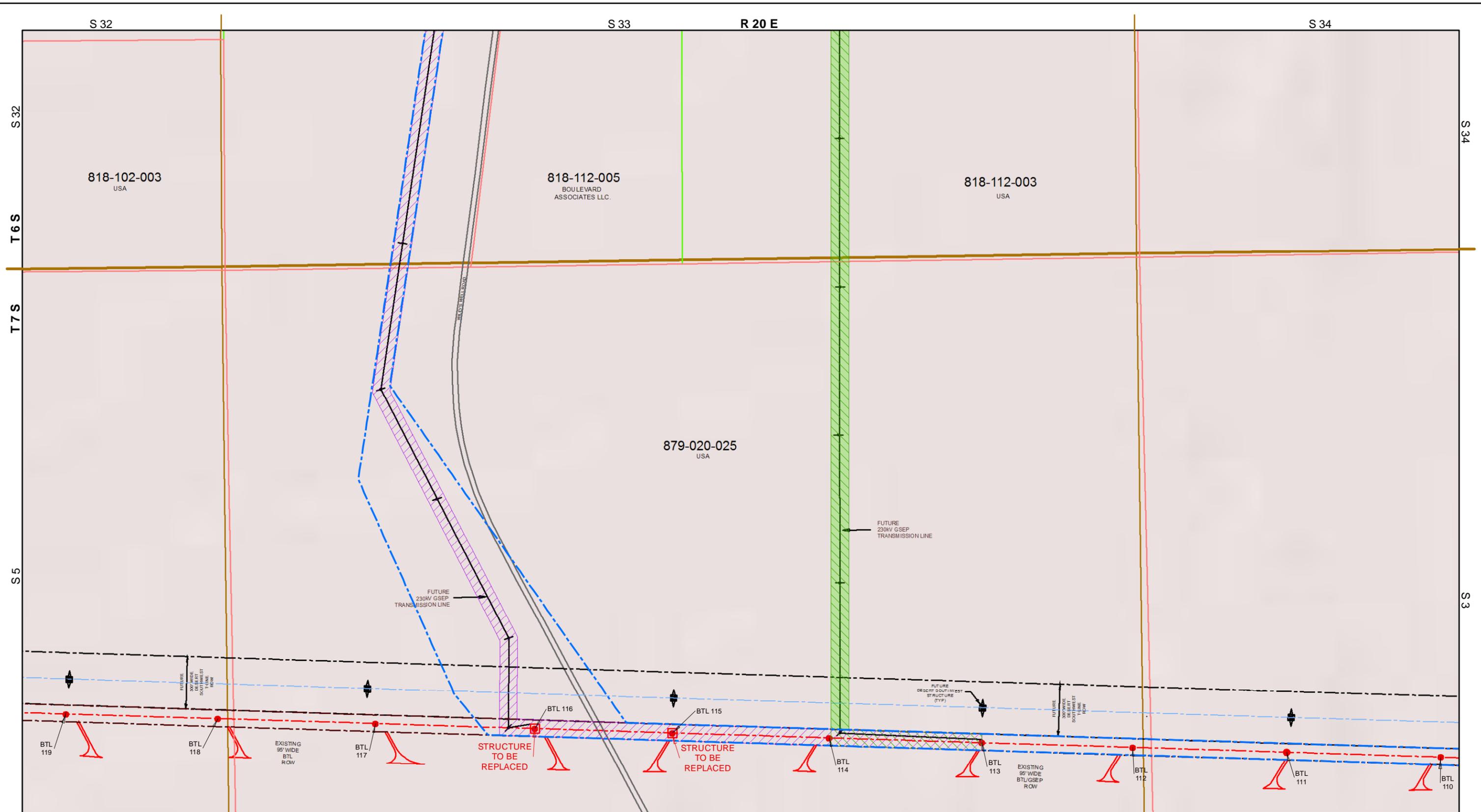
These changes were unforeseen until the project final engineering and equipment procurement was in process.

## **3.0 SUMMARY OF MODIFICATIONS**

Two options for the changes to the alignment of the gen-tie are being proposed in this amendment. Details of the gen-tie routes are presented in three views starting from the area just west of the Wiley's Well rest stop and going to the south east to the CRS. Views 1, 2 and 3 are shown in Figures 2, 3, and 4.



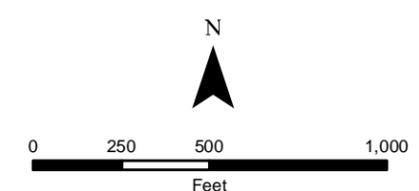
<b>Legend</b>			
—+— Proposed 230 kV GSEP Transmission Line	Permitted Genesis Solar Energy Project Right-of-Way	Private Parcel	N 0 250 500 1,000 Feet
Proposed 30' Wide Gas Easement Inside GSEP Right-of-Way	Genesis Solar Energy Project Right-of-Way -Option A	USA Parcel	
Proposed 50' Wide Gas Easement Outside GSEP Right-of-Way	Option A Right-of-Way Outside of Permitted Right-of-Way	Township/Range Boundary	<b>GENESIS SOLAR ENERGY PROJECT</b> <b>RIVERSIDE COUNTY, CA</b>  <b>FIGURE 2</b> <b>OPTIONS A &amp; B</b> <b>VIEW 1</b>  TETRA TECH INC.
Existing Underground Gas Pipeline	Genesis Solar Energy Project Right-of-Way - Option B	Section Boundary	
	Option B Right-of-Way Outside of Permitted Right-of-Way		Coordinate System: NAD83 California State Plane VI (ft) Sources: ESRI, Holt Group, Tetra Tech



- Legend**
- - - Existing 230kV Blythe Transmission Line
  - + Proposed 230 kV GSEP Transmission Line
  - Existing BTL Structure to Remain
  - ◻ Existing BTL Structure to be Replaced

- ▭ Permitted Genesis Solar Energy Project Right-of-Way
- ▨ Genesis Solar Energy Project Right-of-Way -Option A
- ▨ Option A Right-of-Way Outside of Permitted Right-of-Way
- ▨ Genesis Solar Energy Project Right-of-Way - Option B
- ▨ Option B Right-of-Way Outside of Permitted Right-of-Way

- ▭ Private Parcel
- ▭ USA Parcel
- ▭ Township/Range Boundary
- ▭ Section Boundary

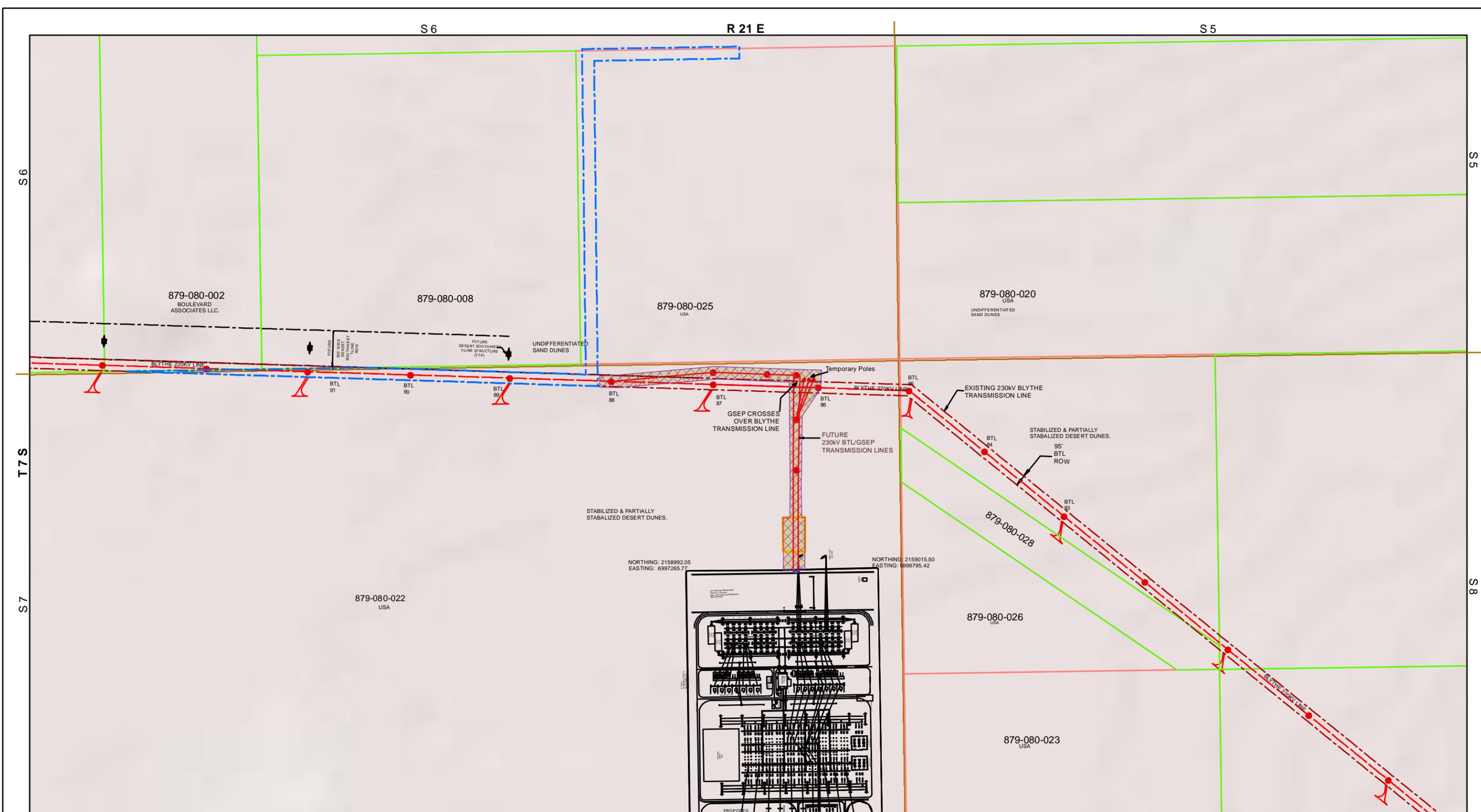


Coordinate System: NAD83 California State Plane VI (ft)  
Sources: ESRI, Holt Group, Tetra Tech

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

**FIGURE 3  
OPTIONS A & B  
VIEW 2**

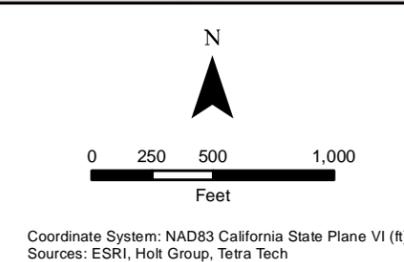




- Legend**
- Existing 230kV Blythe Transmission Line
  - == Blythe Transmission Line Right-of-Way
  - + Proposed 230 kV GSEP Transmission Line
  - - - - Future Desert Southwest 300-foot Wide Right-of-Way
  - Existing BTL Structure to Remain

- Permitted Genesis Solar Energy Project Right-of-Way
- Genesis Solar Energy Project Right-of-Way - Option A
- Genesis Solar Energy Project Right-of-Way - Option B
- Options A & B Right-of-Way Outside of Permitted Right-of-Way

- Private Parcel
- USA Parcel
- Township/Range Boundary
- Section Boundary



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

**FIGURE 4  
OPTIONS A & B  
VIEW 3**

The original gen-tie route, the Option A route, and the Option B route are all very similar in terms of environmental impacts and acreage disturbance. Table 1 below shows a comparison of three routes. Option B has slightly higher impact numbers due to the need for additional poles (approximately 5 more than the original route) and a slightly longer route for the gas line. The gas line disturbance is calculated as a temporary disturbance since the gas line will be buried and the surface will be revegetated.

### **3.1 Changes due to the Relocation of the CRS**

Under the current project license, the gen-tie path from the project site to the point of interconnect assumed that the CRS was located in a position to the north of the GSEP gen-tie. As such, during planning, the portion of the GSEP gen-tie that is co-located on the Blythe Energy Transmission Line (BETL) structures was configured to have the circuits hung on the north side, allowing easy access to separate from the BETL and with the addition of new poles, enter the substation. Since that time, the CRS planned location has been moved to the south of the BETL.

With the move to the south, the GSEP gen-tie will now need to cross over the 230 kV BETL at the point due north of the substation. To do so, the GSEP circuit will come off the BETL structures at Pole 88. A new pole will need to be placed approximately 50 feet (ft.) north of BETL Pole 87. A large turning structure of concrete, wood or steel will then be placed to the north of BETL between poles 87 and 86 (approximately 100 ft. from Pole 86). This double circuit pole will be approx. 130 ft. high and will allow for a perpendicular crossing over the existing BETL. A crossing agreement has been established between Genesis Solar and LS Power, the current owners of the BETL.

After crossing the BETL, the GSEP double-circuited 230 kilovolt (kV) line will run approximately 1600 ft. to the GSEP ring bus. (See Figure 5, View 4 and Figure 6, One Line Diagram). This stretch includes two new double-circuited 230 kV poles and a ring bus/switchyard structure north of the CRS. Inside the ring bus, will be a new, three-breaker 230 kV switchyard (i.e. no voltage transformation) located 100 ft. north of the northern the CRS perimeter wall (pursuant to SCE offset requirements) and aligned (east-to-west) so as to facilitate a connection to CRS 230 kV Bay 7 while minimizing any impediments to future transmission line connections to other CRS 230 kV Bays

The purpose of the ring bus is two-fold: it will contain metering and protection equipment required under the LGIA and it will provide backfeed power to facilitate plant commissioning activities that are necessary due to the delay in the CRS schedule.

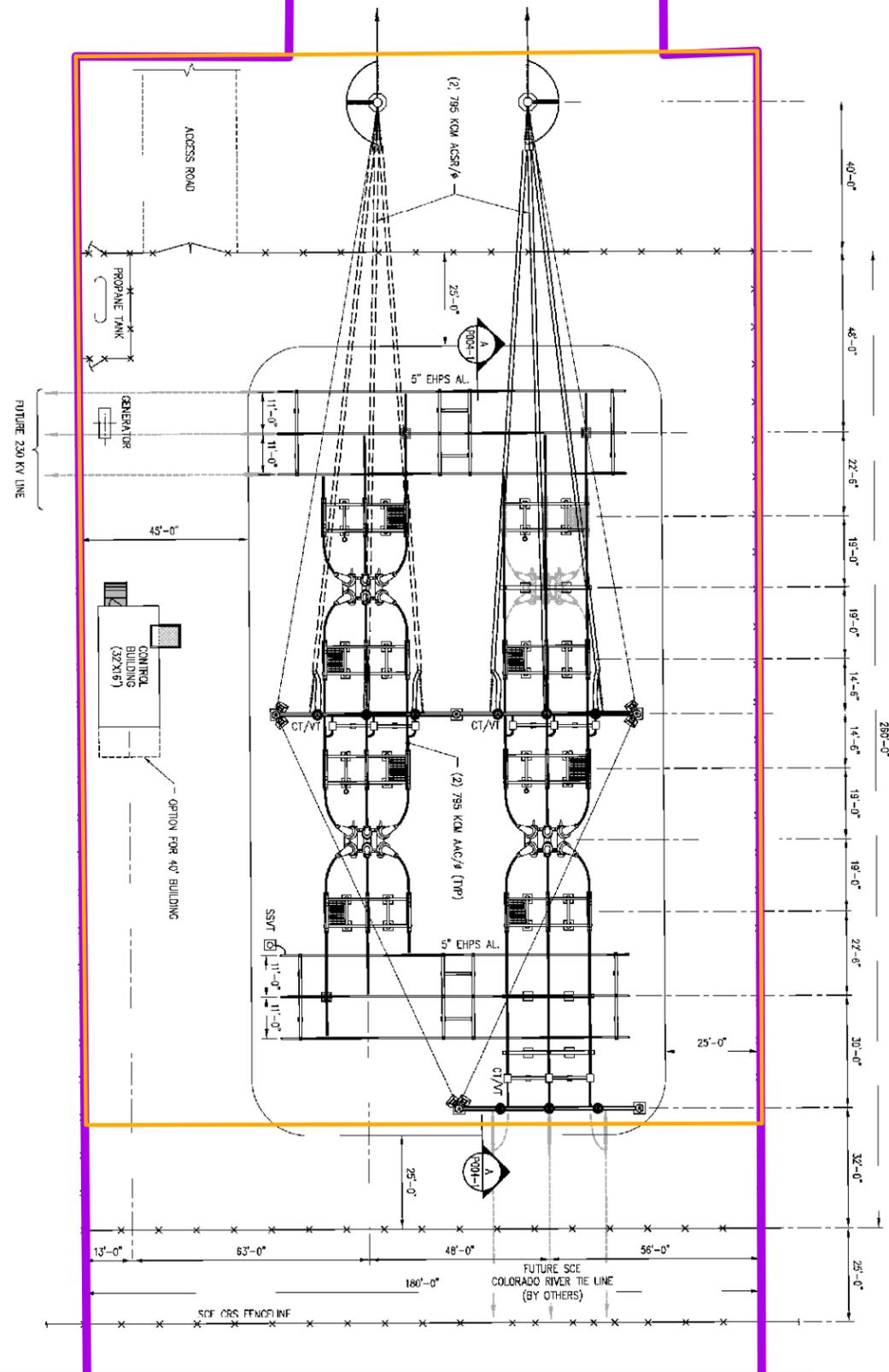
The electrical metering equipment required to measure the output of GSEP will include instrument transformers, megawatt hours-meters, data acquisition equipment, transducers, remote terminal units (RTU), communications equipment, phone lines, and fiber optics. As per the Genesis Power Purchase Agreement, delivered energy from the project shall be measured at the California Independent System Operator revenue meter at the CRS. Since permitting was completed, SCE has completed design work of the CRS which does not allow room for metering or allow for customer owned facilities inside of the SCE substation. Genesis Solar has signed a Large Generator Interconnect Agreement which allows for metering just outside of the SCE substation in a ring bus/switchyard which is the closest practical point to meet the Power Purchase Agreement requirements.

**Table 1. Acres of Temporary and Permanent Disturbance for Linear Facilities**  
(not including Plant Site)

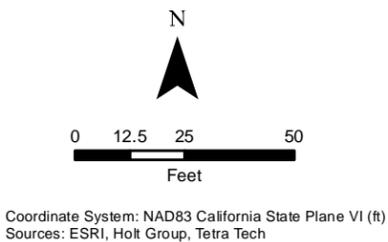
	Original Permitting Gen-tie Disturbance			Option A Disturbance			Option B Disturbance		
	Dimensions (feet)	Quantity	Acres	Dimensions (feet)	Quantity	Acres	Dimensions (feet)	Quantity	Acres
<b>Temporary Disturbance</b>									
<b>Transmission line</b>									
Construction laydown/assembly areas	200 x 200	2	1.83	200 x 200	2	1.83	200 x 100	2	1.83
Conductor pulling area	50 x 140	25	4.02	50 x 140	25	4.02	50 x 140	25	4.02
Pole pad construction area	100 x 100 <sup>1</sup>	64	14.69	100 x 100	67	15.38	100 x 100	69	15.84
<b>Gas Line</b>									
Construction ROW	50 x 6 miles	1	36.36	50 x 6.8 <sup>2</sup>	1	41.21	50 x 7.6 miles	1	46.06
<b>Roads</b>									
Plant Site Access Road	20 x 4.8 miles <sup>3</sup>	1	11.64	20 x 4.8 miles	1	11.64	20 x 4.8 miles	1	11.64
<b>Total Temporary Disturbance</b>			<b>68.54</b>	<b>74.08</b>			<b>79.39</b>		
<b>Permanent Disturbance</b>									
<b>Transmission line</b>									
Transmission Pole Pads	6 x 6	64	0.05	6 x 6	67	.05	6 x 6	69	.06
Spurs to Poles	70 x 12	64	1.23	70 x 12	67	1.29	70 x 12	69	1.33
Substation Expansion	45 acre expansion	1	45	45 acre expansion	1	45	45 acre expansion	1	45
Ring Bus/Switchyard	260 x 180	1	1.58	260 x 180	1	1.58	260 x 180	1	1.58
<b>Roads</b>									
Plant Site Access Road	30 x 4.8 miles	1	17.45	30 x 4.8 miles	1	17.45	30 x 4.8 miles	1	17.45
Gen-tie Access Road <sup>4</sup>	12 x 1.9 miles	1	2.76	12 x 1.9 miles	1	2.76	12 x 2.4 miles	1	3.50
<b>Gas Line</b>									
Gas Line	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total Permanent Disturbance</b>			<b>68.07</b>	<b>68.13</b>			<b>68.92</b>		

**Notes:**

- 1 The 100 ft. x 100 ft. Pole Pad Construction area does not include the 6 ft. x 6 ft. permanent pole pad disturbance or the portion of the spur road that is coincident with the 100 ft. x 100 ft. pole pad construction area.
- 2 Additional .8 miles of gas line disturbance for Option A and additional 1.6 miles of gas line disturbance for Option B.
- 3 The temporary disturbance shown excludes the permanent disturbance for the access road. Plant Site access road is 4.8 miles in length from the proposed SoCal Gas meter to the entrance of the GSEP Plant Site and is the same length for all three options.
- 4 The gen-tie access road will be a two-track gravel road, measuring 12 feet in width. The gen-tie access going along the BETL has NOT been included in this calculation since the access road is already disturbed and constructed.



- Legend**
- Switchyard
  - Additional Right-of-Way to be Requested



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

**FIGURE 5  
GSEP RING BUS/SWITCHYARD  
VIEW 4**



# Desert Center-Blythe Project (TOT 223)

## 500 MW CAPACITY (For SCD analysis)

### LINE DATA\*

Section 1.1: 230 kV Line, 2.15 miles, 1272 ACSR

$Z_1$  (p.u.) = .00034+j.00295

$Z_0$  (p.u.) = .00212+j.00611

Section 1.2: 230 kV Line, 7.56 miles, 2B-1272 ACSR

$Z_1$  (p.u.) = .00062+j.00730

$Z_0$  (p.u.) = .00753+j.02172

Section 1.3: 230 kV Line, 4.92 miles, 2B-1272 ACSR

$Z_1$  (p.u.) = .00041+j.00457

$Z_0$  (p.u.) = .00431+j.01273

Section 1.4: 230 kV Line, 0.28 miles, 2B-1272 ACSR

$Z_1$  (p.u.) = .00002+j.00027

$Z_0$  (p.u.) = .00028+j.00080

\*provided by customer

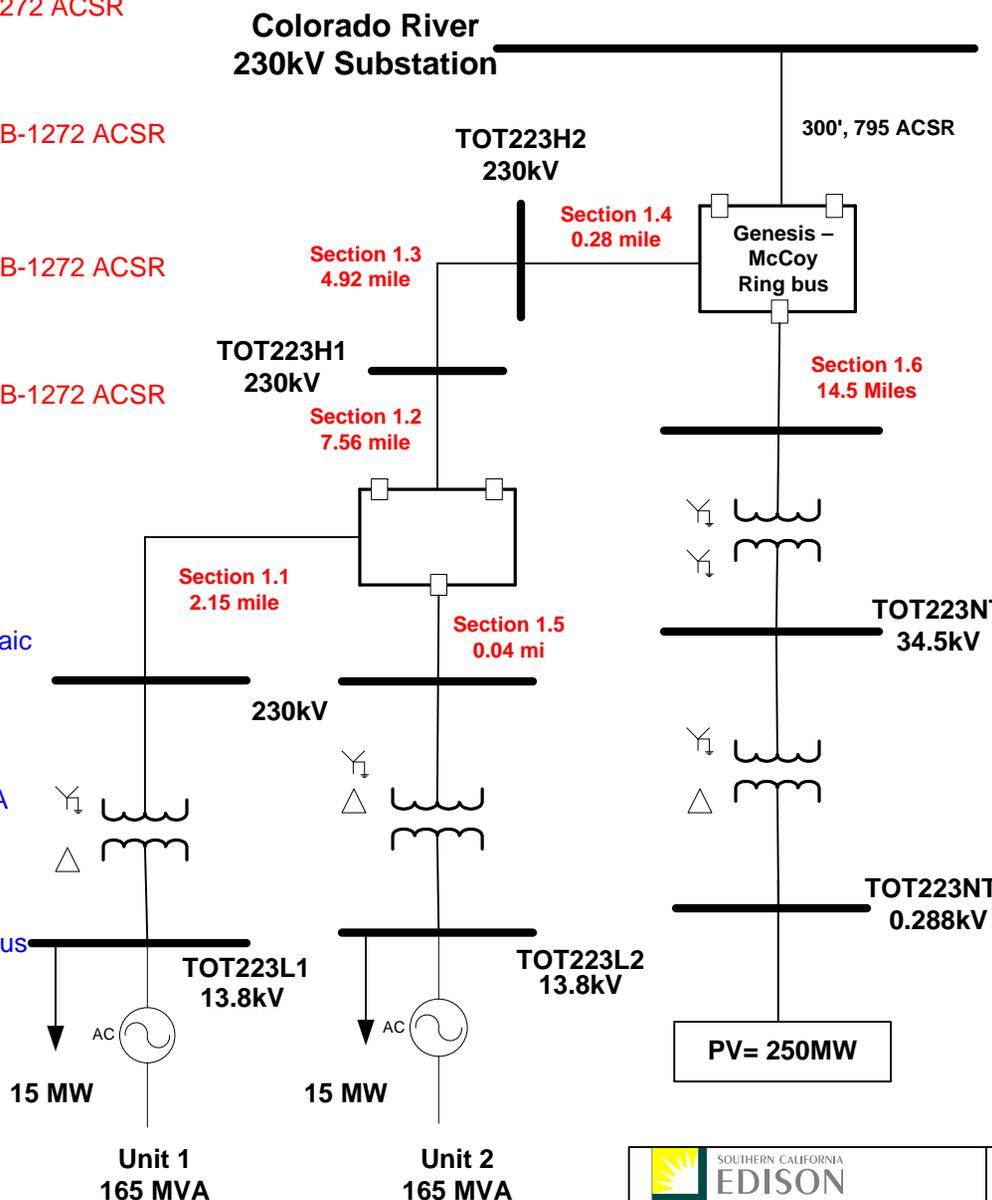
### GENERATOR DATA (McCoy)

Type of Generator: Photovoltaic  
 Total Rated Output: 250 MW  
 Number of units: 428  
 Voltage Rating: 0.288 kV  
 PF: Unity  
 Individual generator Output: 0.584KVA  
 Max Fault Contribution: 1.5X

### GENERATOR DATA

#### Genesis STG's

Type of Generator: Synchronous  
 Total Rated Output: 280 MW  
 Auxiliary Load: 30 MW  
 Net Generation: 140 MW  
 Number of units: 2  
 MVA Rating: 165 MVA  
 Voltage Rating: 13.8 kV  
 PF: .85 PF  
 $X''^1$ : .142  
 $X''^2$ : .149  
 $X''^0$ : Infinite



Genesis STG's

### LINE DATA\*

Section 1.5: 230 kV Line, 0.04 miles

$Z_1$  (p.u.) = .00001+j.00005

$Z_0$  (p.u.) = .00004+j.00011

Section 1.6: 230 kV Line, 14.50 miles, 2B-954 SAC

$Z_1$  (p.u.) = .00147+j.01418

$Z_0$  (p.u.) = .01453+j.04216

\*provided by customer

### Genesis

### MAIN TRANSFORMER DATA (X2):

Rated Voltage: 238/13.8 kV  
 Rated MVA: 96/128/160 MVA  
 Impedance:  
 H-X: 8.5% @ 96 MVA  
 H Winding: Wye Grounded  
 X Winding: Delta

### McCoy

### MAIN TRANSFORMER DATA :

Rated Voltage: 230/34.5 kV  
 Rated MVA: 201/241/290 MVA  
 Impedance:  
 H-X: 8% @ 201 MVA  
 H Winding: Wye Grounded  
 X Winding: Wye Grounded  
 Y Winding: Buried Delta

### STEP UP TRANSFORMER (EQ):

Rated Voltage: 34.5/0.288 kV  
 Rated MVA: 250 MVA  
 Impedance:  
 H-X: 5.75% @ 250 MVA  
 H Winding: Wye Grounded  
 X Winding: Delta

 SOUTHERN CALIFORNIA <b>EDISON</b> <small>An EDISON INTERNATIONAL Company</small>	
ENGINEER	DATE
Haroun Idris	03/14/11

Desert Center-Blythe Project (TOT223)

Figure 6  
One Line Diagram/Ring Bus

The ring bus/switchyard will also serve to accommodate the various breakers, switches, line protection scheme, RTUs and telecommunication paths for the Special Protection Scheme required under the LGIA. The ring bus will support the full interconnection requirements necessitated by the LGIA and will allow GSEP to operate continually, without interruption, as other phases of the interconnection facilities and network upgrades are completed.

In addition to the metering and protection requirements, the ring bus/switchyard will facilitate the delivery of the requisite temporary 230 kV backfeed power to GSEP from the existing BETL. The source of the backfeed power will be a tap off of the BETL. This tap runs from BETL structure 86 and short poles (three poles up to 80 ft. high). The tap will then run south via the newly proposed GSEP structures to the ring bus/switchyard.

The ring bus connection to the GSEP requires the installation of approximately 1,100 ft. of 230 kV transmission line from the ring bus to the existing GSEP/BETL Joint Use (i.e. Double Circuit) Structures. The ring bus/switchyard will measure 260 ft. long and 180 ft. wide and occupy 46,800 square ft. The total permanent disturbance for the ring bus/switchyard will be approximately 1.58 acres.

The source of the backfeed power coming from the BETL requires an agreement between Genesis Solar as the applicant, LS Power as the transmission line owner and SCE as the service provider. Because this arrangement is dependent on the cooperation of two third party entities, and therefore out of Genesis Solar's immediate control, Genesis Solar is including an alternate means to obtain power for plant commissioning through the use of portable generators.

The use of portable, temporary generators will provide an alternate source for supplying the necessary power for commissioning activities if the CRS is not available. These activities will begin in January of 2013 and will initially require 0.5 MW of power. The load requirements will slowly ramp up through the following months peaking at the beginning of July up to approximately 8.5 MWs if no back-feed power is available. The GSEP has access to portable diesel generators ranging in size from 250 kilowatts up to 1.5 MW each. These generators meet the California Air Resources Board requirements for Portable Equipment Registration Program. These diesel generators will be used to supply electrical loads for startup and commissioning activities. Commissioning activities will occur Monday through Saturday on a 10 to 12 hour work schedule. However, as is common during plant commissioning activities, a need for overnight work may be necessary so fractional loads may be required for longer periods and may include Sundays. The diesel generators will be located in the power block area closest to the loads requiring power. The use of diesel generators will be discontinued when a back-feed source and associated downstream switchgear becomes available. Air modeling to evaluate the impacts of using the generators is on-going. The data are being delivered to the CEC under separate cover.

SCE will need to construct a distribution line from north of I-10 south to the CRS to facilitate construction of the CRS. Genesis Solar will also need to pull power off of that distribution line from the west to construct the ring bus.

### 3.2 Changes due to the SoCal Gas Reducer Valve Tie in Location

SoCal Gas is the natural gas service provider in the project area. The company recently determined that the GSEP must receive its requisite gas supply via a tap at a reducer valve station located to the southeast of the Wiley's Well Road I-10 exit interchange. The project team has evaluated two options for routing the natural gas pipeline from the reducer valve location to the project site. The first option (Option A) would be constructed by heading west from the reducer valve station to the existing ROW that was permitted in the Final Decision. The second option (Option B) would be constructed by heading east from the reducer valve station to parallel a newly proposed transmission route. (See Figure 2, View 1.) As gas pipeline options were evaluated, the possibility of an alternative gen-tie route was also evaluated due in part to the gas pipeline, but also due to the engineering of crossing existing transmission lines and tying into the BETL. Each of these options is discussed below.

**Option A.** SoCal Gas will need to construct the pipeline from the reducer valve station located approximately 570 ft. southeast of the I-10 Wiley's Well interchange. The pipeline will have a diameter of 6 inches and will be buried 3 ft. below the soil surface. This pipeline will travel 350 ft. on private land owned by a subsidiary of Genesis Solar's parent company, to the west, crossing under Wiley's Well Road before entering the existing GSEP ROW. The pipeline will travel to the northern side of the GSEP tie-line and parallel existing pipelines in the area. The pipeline will follow the ROW turning north, proceed under I-10 and remain on the east side of the gen-tie ROW until reaching the GSEP gas metering station 1,700 ft. north of I-10 in the current project linear footprint. SoCal Gas will own the gas-line and ROW from the reducer valve to the metering station. The gas-line will be owned by Genesis Solar from the metering station into the GSEP Plant Site. This gas line from the metering station into the Plant Site was previously approved in the CEC Final Decision.

This option is the permitted gen-tie route currently in the CEC Final decision and BLM ROW; however, changes are needed to the ROW to allow the gen-tie to cross the SCE Eagle Mountain 160 kV line and tie into the BETL. Figure 2, View 1 shows the modifications to the ROW necessary to cross the Eagle-Mountain line. SCE requires that non-SCE transmission lines cross their system lines at a 90 degree angle (i.e. perpendicular). The presently-approved ROW does not provide sufficient room to facilitate that crossing. The approved gen-tie route in this area reflects a due-east path from the GSEP Plant Site until the gen-tie crosses over Eagle Mountain line at a 20 degree angle. The GSEP line then continues east within the approved ROW for approximately 540 ft. before turning due south within the approved ROW. The proposed gen-tie route also reflects a due-east path from the GSEP Plant Site to a point approximately 300 ft. west of Eagle Mountain Line. To cross the Eagle Mountain line at a perpendicular angle, the GSEP line will then need to turn east-northeast, paralleling the Blythe-Eagle Mountain line for approximately 675 ft., before turning south-southeast (perpendicular) for approximately 720 ft. to a point within the approved ROW. Two new turning structures will be required to cross the Eagle Mountain line at a perpendicular angle. The GSEP line will then continue south within the approved ROW.

Figure 3, View 2 shows the location of the GSEP gen-tie entering the ROW of the BETL. One turning structure will be needed immediately north of the Desert Southwest ROW to span the future line and connect into BETL. A new pole will need to be added west of BETL pole number 116 to facilitate the connection of the GSEP line to BETL. Because BETL Poles 116 and 115

are currently single circuit, both poles will need to be exchanged for double circuit poles. BETL poles 114 through 88 are already double circuit and the GSEP tie-line will continue along these structures without any additional pole replacements. The GSEP tie-line will exit BETL at Pole 88 as described above in Section 3.1.

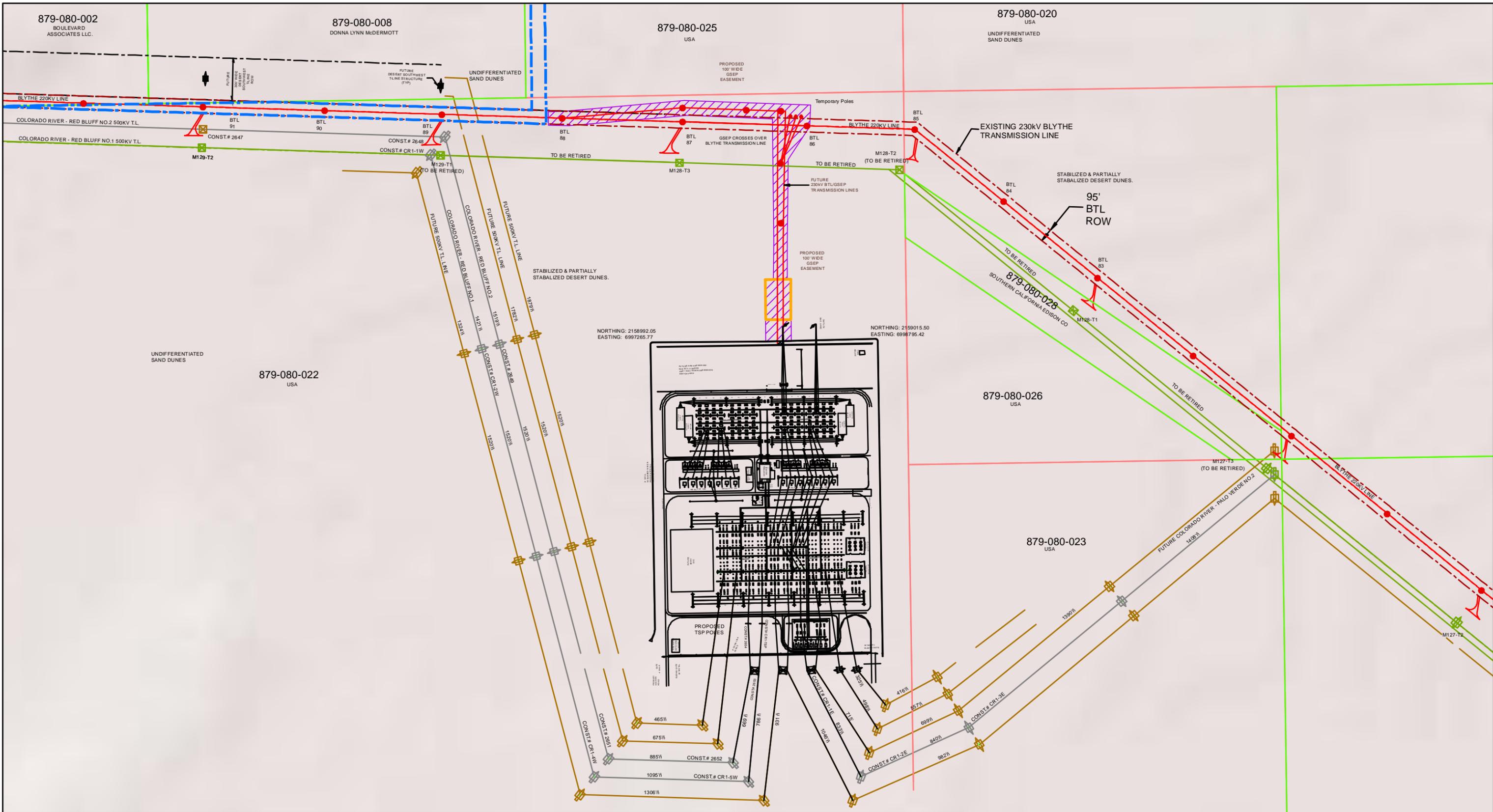
**Option B.** As in Option A, SoCal Gas will also construct the pipeline from the reducer valve station located approximately 570 ft. southeast of the I-10 Wiley's Well interchange. However, for this option, SoCal Gas will construct the pipeline on private land heading east from the reducer valve station. The pipeline will travel for approximately 700 ft. on private land before entering BLM property. The pipeline will travel 950 ft. on BLM land before turning north to coincide with the newly proposed route for the GSEP gen-tie line. The pipeline will be routed north, under I-10, approximately 1,000 ft. east of the Wiley's Well rest area in the proposed gen-tie corridor. The pipeline will continue north crossing under the Eagle Mountain transmission line before turning west. It will then parallel both the Eagle Mountain line and the proposed new GSEP gen-tie line until reaching the metering station within the original GSEP ROW. As in Option A, the pipeline will have a diameter of 6 inches and will be buried 3 ft. below the soil surface.

From the Plant Site, as the GSEP gen-tie line approaches the Eagle Mountain line, the tie line will parallel the eagle mountain 161 kV line and continue north and east of the Wiley's Well rest area. A self-supporting steel turning structure (130 ft. high) will be needed to turn the GSEP gen-tie due south and cross over the Eagle Mountain line between Eagle Mountain pole numbers 124699 and 124700. The gen-tie will then travel due south for 7,900 ft. before crossing the future Desert Southwest line at a perpendicular angle. A new turning structure (130 ft. high) approximately 30 ft. northeast of BETL pole number 114 will be needed to facilitate connecting the gen-tie line to BETL Pole 113 which is double circuited and ready to accept the GSEP circuit. As in Option A, for Option B, the gen-tie line will also exit BETL at Pole 88 as described above in Section 3.1

#### **4.0 ENVIRONMENTAL ANALYSIS**

This section discusses the environmental impacts associated with both Option A and Option B. It is important to understand that impacts and mitigation were already accounted for in the original CEC analysis, and that slight modifications to the gen-tie line as proposed in either Option A or Option B will only be a trade-off from the original impacts. None of the Conditions of Certification will change, except for two of the air quality conditions related to the significant change in size (as well as water use and emissions) of the cooling towers. All of the poles will be designed to blend into the background environment to minimize environmental impact.

The area in general is already disturbed by the presence of transmission lines. Figure 7, Proposed Transmission Lines coming into the CRS, shows the proposed and existing lines. Numerous biological and cultural surveys have been conducted over the last five years throughout the general area. Table 2 lists the recent transmission lines, substation and solar projects in the area that have conducted recent environmental surveys.



- Legend**
- - - Existing 230kV Blythe Transmission Line
  - Blythe Transmission Line Right-of-Way
  - + Proposed 230 kV GSEP Transmission Line
  - - - Existing 500kV SCE DPV-1 Transmission Line
  - Future Desert Southwest 300-foot Wide Right-of-Way
  - Future 500kV SCE DPV-1 Transmission Line
  - Future 500kV Colorado River - Red Bluff Transmission Line
  - Genesis Solar Energy Project Right-of-Way
  - Additional Right-of-Way to be Requested
  - Switchyard
  - Existing BTL Structure
  - Private Parcel
  - USA Parcel

N

0 250 500 1,000  
Feet

Coordinate System: NAD83 California State Plane VI (ft)  
Sources: ESRI, Holt Group, Tetra Tech



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

**FIGURE 7  
PROPOSED FUTURE TRANSMISSION LINES**

TETRA TECH INC.

**Table 2. Recent Projects in the Area**

	Date of Approval of Permits
<b>Transmission Line Projects</b>	
Devers Palo Verde (DPV) 2	November 2009
Blythe Energy Transmission Line (BETL)	2001
Desert Southwest Transmission Line (DSW)	Pending
<b>Substation and Solar Projects</b>	
Colorado River Substation (CRS)	July 2011
Genesis Solar Energy Project (GSEP)	November 2010
Blythe Solar Energy Project (BSEP)	September 2010
McCoy Solar Energy Project (MSEP)	Pending

#### 4.1 Air Quality

The proposed changes to the gen-tie would not be different than the air quality impacts associated with the original gen-tie location.

There is a potential that generators would be needed if the back-feed power cannot be supplied by the LS Power (formerly BETL) transmission line. In that event, (10) 1 MW generators would be needed. A separate air quality analysis is being developed for this scenario and will be delivered separate cover.

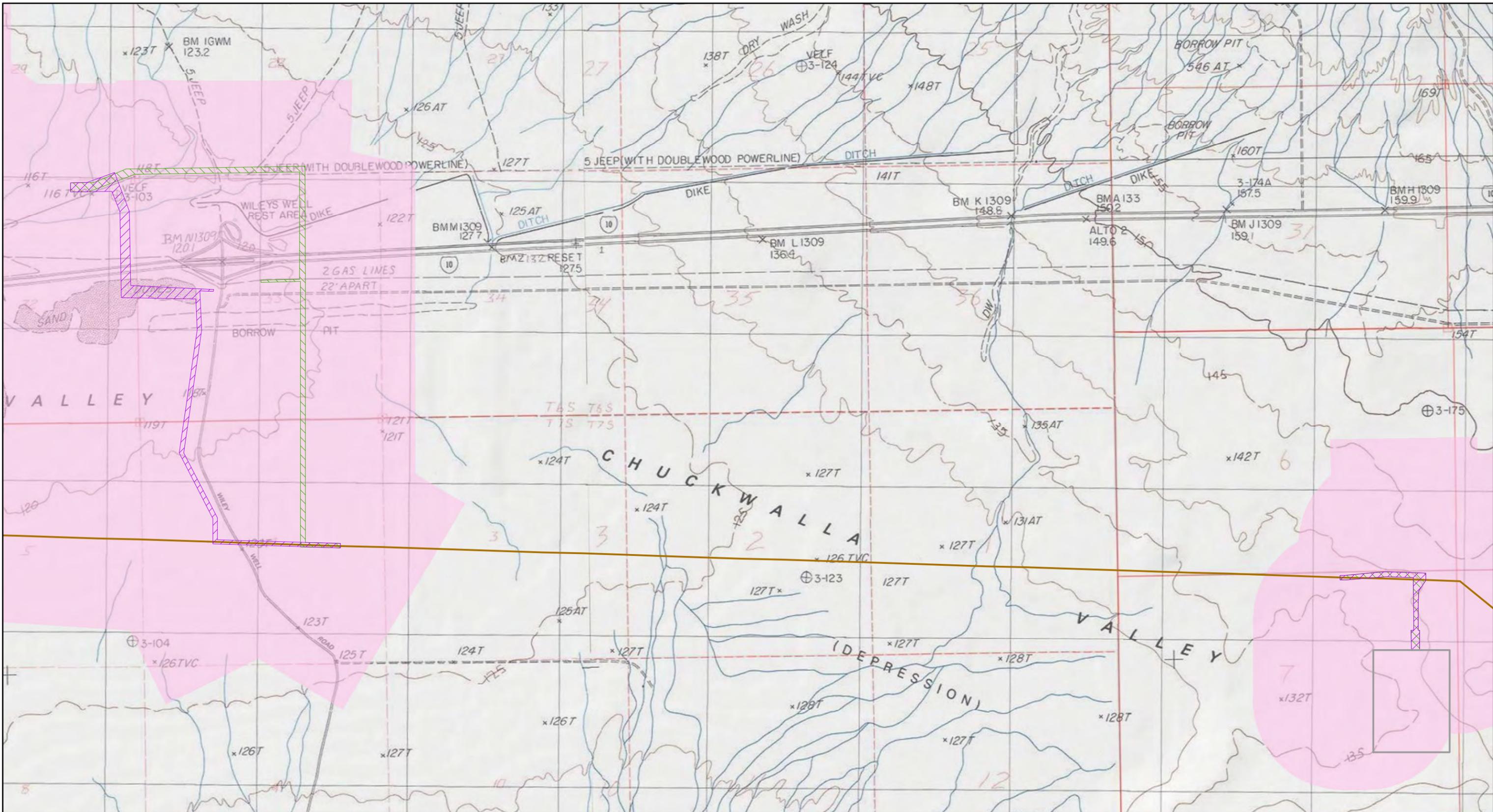
To the extent that the Commission chooses to adopt the changes to the equipment descriptions as issued in the nine new ATC permits and as further modified by Genesis Solar in its application for modification, the changes are listed in Attachment A. In addition, the changes to Condition of Certification AQ-20 that would apply to the two cooling towers are also shown in this attachment. This change represents a significant reduction in the size, and hence the water use and air quality impacts from the wet cooling towers as originally proposed.

#### 4.2 Biological Resources

Biological surveys have been conducted in the area many times over the last few years by Genesis Solar, by other developers and by utility companies. Figure 8 shows the areas that have been surveyed for biological resources. The GSEP has assumed presence for several species and mitigation has been provided in the original CEC application. The slight changes in the gen-tie will not result in new biological species being impacted. There are slight variations in the acreages being impacted between the original gen-tie and Options A and B. (See Table 1.)

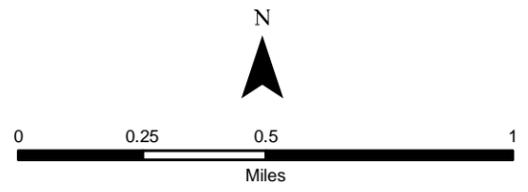
Full biological surveys for the unsurveyed areas along Option A and B were conducted on March 15 and 16, 2012. Two biologists conducted surveys according to U.S. Fish and Wildlife (FWS) desert tortoise protocols (FWS 2009), including buffer surveys at 100-500 feet from the ROW boundary. FWS, California Department and Fish and Game (CDFG), and BLM agreed that conducting surveys starting March 15 was acceptable. Biologists surveyed for all special-status wildlife and plant species concurrently.

No federally or state-listed wildlife species were observed during 2012 surveys; however, biologists observed three desert tortoise (*Gopherus agassizii*) permineralized shell fragments (estimated between 3,000 – 5,000 years old), seven Mojave fringe toed lizard individuals (*Uma*



- Legend**
- Genesis Solar Energy Project Right-of-Way - Option A
  - Genesis Solar Energy Project Right-of-Way - Option B
  - Colorado River Substation
  - Bio Survey Coverage

Existing Blythe Energy Transmission Line  
(Previously Surveyed for Other Projects)



Coordinate System: NAD83 California State Plane VI (ft)  
Sources: ESRI, Holt Group, Tetra Tech

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

**FIGURE 8  
OPTIONS A & B  
BIO SURVEY COVERAGE**



*scoparia*, California Species of Special Concern [SSC]), one inactive burrowing owl burrow (*Athene cunicularia*, SSC), and two inactive desert kit fox (*Vulpus macrotis*, CDFG protected furbearer) natal dens. All species observed and the locations where they were observed were consistent with previous observations, as noted in the *Biological Resources Technical Report for the Genesis Solar Energy Project* (Tetra Tech Inc. and Karl 2009) and *Fall 2009 and Spring 2010 Biological Resources Technical Report* (Tetra Tech Inc. and Karl 2010). The full technical memorandum summarizing the results of the March 2012 surveys is being provided to the CEC under separate cover.

No federally or state-listed plant species were observed during 2012 surveys; however, germination of annual plants was poor to non-existent due to lack of precipitation.

### **Option A**

Option A is a slight variation of the gen-tie line (shown on Figure 2, View 1), where the line will have to cross the existing Eagle Mountain Line at a perpendicular angle. There are no sensitive biological species in this area and it has been surveyed.

Option A will require some additional ROW to the south of the east/west portion of the SoCal Gas easement in order to assure an adequate distance between the proposed gen-tie and the gas line. No biological impacts are expected from this slight modification and request for additional ROW.

Option A will require some additional ROW to the north of the LS (formerly BETL) transmission line just before and after the 90 degree turn to the south towards the CRS (See Figure 4, View 3). This area has been extensively surveyed for biological purposes. No impacts are expected from this request for additional ROW.

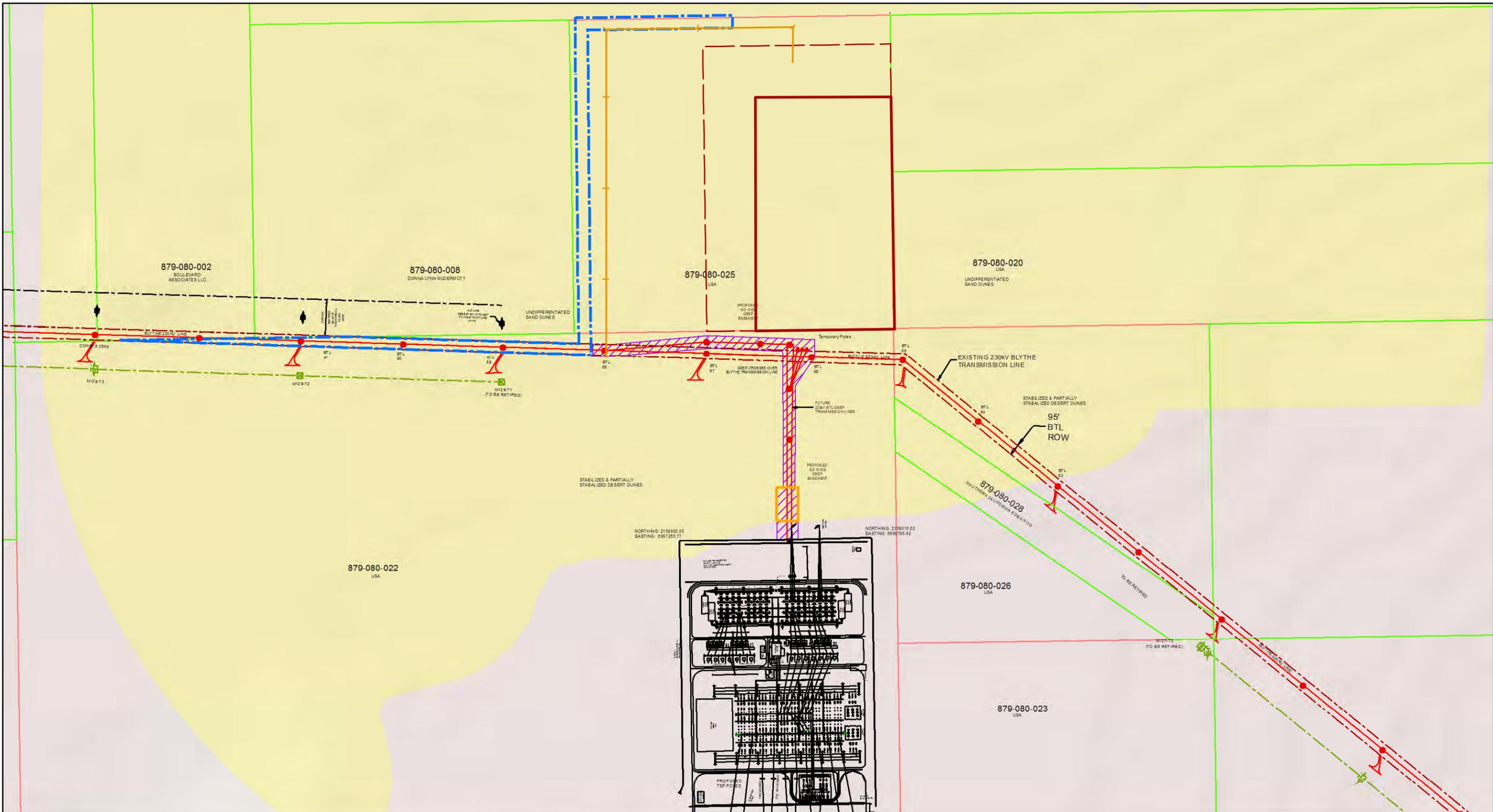
### **Option B**

For Option B, the portion of the gen-tie line running in a north-south direction will traverse over BLM land that was not included in the original ROW. This corridor was recently surveyed. The biological conditions are generally the same as the conditions on the Option A corridor.

Option B will require some addition ROW to the north of the LS Power (formerly BETL) transmission line just before and after the 90 degree turn to the south towards the CRS (See Figure 4, View 3). This is the same configuration as Option A. Again, this area has been extensively surveyed for biological purposes.

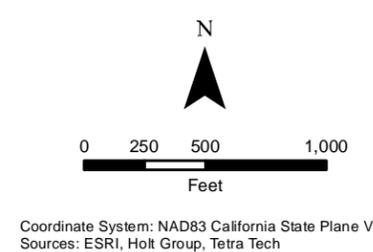
The area south of the BETL is characterized as stabilized and partially stabilized sand dune habitat. The dunes provide habitat for Mojave fringe toed lizards. The ring bus/switchyard is located within the dune area; however it is on the very fringe of the dunes and is marginal dune habitat. Figure 9 shows the boundary area of the sand dune habitat in relation to the ring bus and the CRS.

The ring bus area is 1.58 acres in size and will be fenced with chain link fencing. In general, sand will be able to continue to blow through the ring bus area. The small footprint, combined being on the edge of the sand corridor, makes it a negligible impact to the sand corridor.



- Legend**
- - - Existing 230kV Blythe Transmission Line
  - Blythe Transmission Line Right-of-Way
  - + Proposed 230 kV GSEP Transmission Line
  - - - Future Desert Southwest 300-foot Wide Right-of-Way
  - - - Existing 500kV SCE DPV-1 Transmission Line
  - Genesis Solar Energy Project Right-of-Way
  - Additional Right-of-Way to be Requested
  - Switchyard
  - Existing BTL Structure to Remain
  - Private Parcel
  - USA Parcel

- + Previously Proposed 230 kV GSEP Transmission Line
- Permitted 500kV CRS
- Proposed 230kV CRS Expansion Area
- Sand Transport Corridor (Aspen Environmental, 06-2010)



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

FIGURE 9  
SAND TRANSPORT AREA

### 4.3 Cultural Resources

The proposed change to the gen-tie line would not have an adverse significant impact on cultural resources. The area has been extensively surveyed in the past by Genesis Solar, other developers and utility companies. Figure 10 shows the areas surveyed for cultural resources.

For Option B, the portion of the gen-tie line running in a north-south direction will traverse over BLM land was not included in the original ROW. This corridor was surveyed in March of 2012. The full report has been submitted to the archeologist at BLM. The cultural resource conditions are the same throughout the area.

#### Survey Methodology

Between March 3 and March 6, 2012, Project archaeologists conducted a Class III survey of the gen-tie alignment survey area, plus a 50-foot buffer as required by CEC. Following the guidelines in Section 8110 of the *BLM Manual*, the Class III survey was an intensive pedestrian survey designed to identify all cultural properties locatable from surface and exposed profile indications within the study area defined by the Project disturbance areas and the CEC-required 50-ft. buffer. The survey was conducted by qualified survey teams, led by a qualified crew chief. Native American monitors were present. A maximum survey interval of 15 meters was employed, although crew members frequently walked between transect lines to record isolated artifacts and sites.

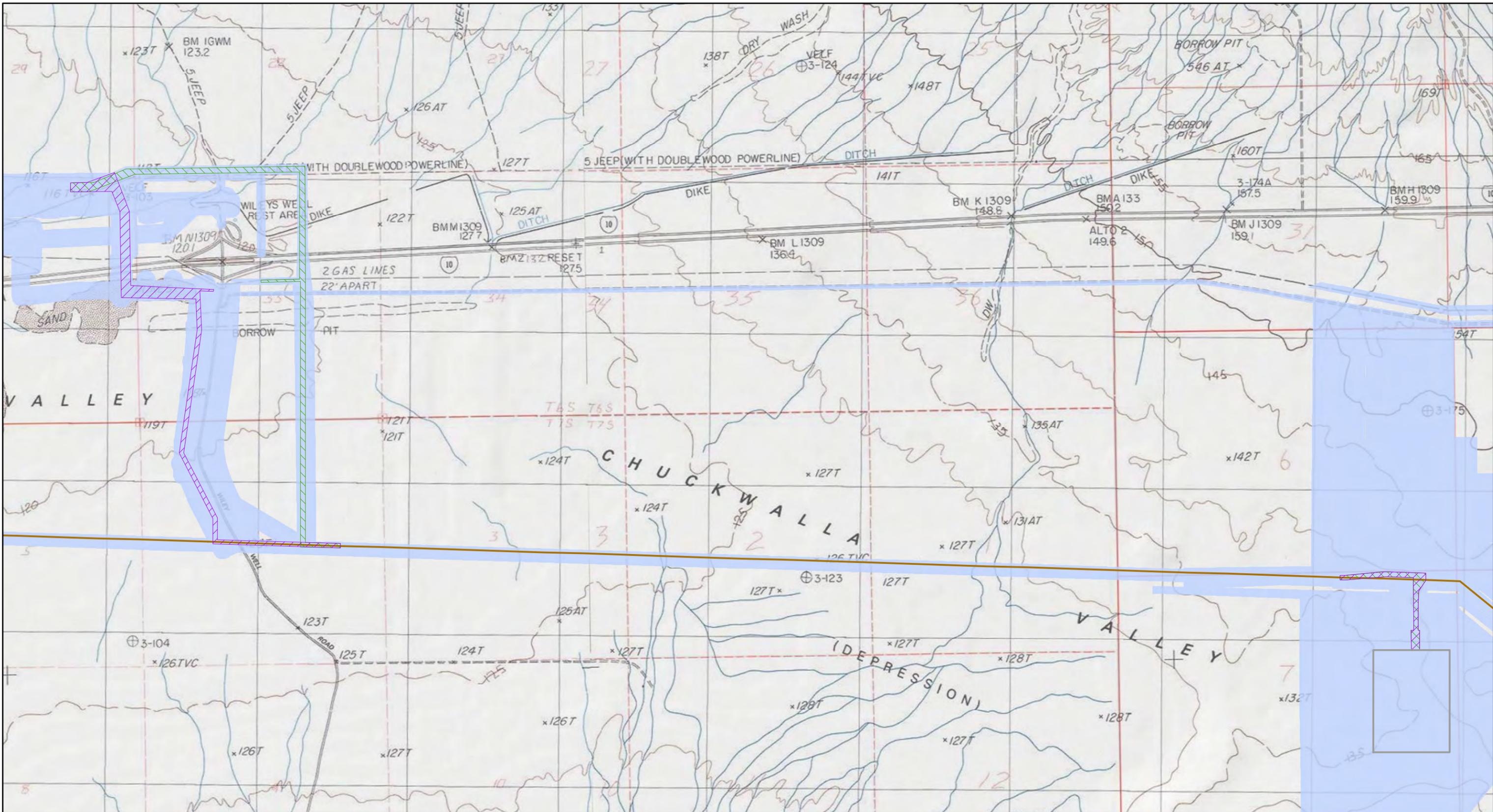
When sites were encountered, field notes were generated and digital photographs were taken. All sites and isolates were recorded using sub-meter GPS units. Data collected in the field was used to create Department of Parks and Recreation 523 A Primary forms. The full Class III Report has been submitted under confidential cover to the CEC.

#### Results

The survey of this area identified four archaeological sites and nine isolated artifacts. Table 3 lists the sites identified during the survey.

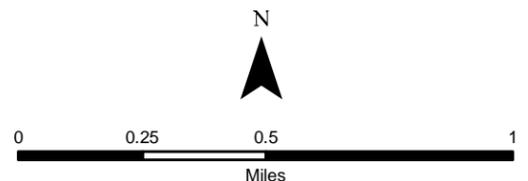
**Table 3. Cultural Sites Identified During the Option B Survey**

Temporary Site Designation	Description	Project Facility
GEN-JW-P-001	Ceramic Scatter	Option B Transmission Line Corridor
GEN-JW-M-002	Emplacement feature, debris scatter, and four widely dispersed flakes	Option B Transmission Line Corridor
GEN-JW-P-003	Single lithic reduction locus	Option B Transmission Line Corridor
GEN-JW-M-004	Emplacement feature and ceramic scatter	Option B Transmission Line Corridor



**Legend**

- Genesis Solar Energy Project Right-of-Way - Option A
- Genesis Solar Energy Project Right-of-Way - Option B
- Colorado River Substation
- Cultural Survey Coverage (Survey Areas Conceptual at This Scale)
- Existing Blythe Energy Transmission Line (Previously Surveyed for Other Projects)



Coordinate System: NAD83 California State Plane VI (ft)  
Sources: ESRI, Holt Group, Tetra Tech

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

**FIGURE 10**  
OPTIONS A & B  
CULTURAL SURVEY COVERAGE



### **GEN-JW-P-001**

GEN-JW-P-001 is a ceramic scatter measuring approximately 5 meters north-south by 3 meters east-west and consisting of approximately 25 sherds. The scatter appears to be the remnants of a small vessel. The ceramic has a coarse-grained quartz temper with a reddish paste; only body sherds were identified. An additional body sherd was identified approximately 1.5 meters northeast of the scatter. It is a plain greyware sherd with a fine-grained temper.

All artifacts appear to be located on the surface. However, the site area contains sandy alluvial deposits and additional sherds may be buried or just below the surface.

GEN-JW-P-001 is recommended not eligible for the National Register of Historic Places (NRHP) under Criteria A-C and not eligible for the California Register of Historical Resources (CRHR) under Criteria 1-3. The site is unevaluated under NRHP Criterion D and unevaluated under CRHR Criterion 4. The ceramic scatter is not representative of the broad patterns of history and is recommended not eligible for the NRHP under Criterion A and the CRHR under Criterion 1. The site contains no evidence that the ceramic scatter is associated with the lives of persons important to the past and is recommended not eligible for the NRHP under Criterion B and the CRHR under Criterion 2. The ceramics identified at the site are commonly found throughout the Colorado Desert and do not represent a distinct style, type, design, or method of construction and is recommended not eligible under NRHP Criterion C and CRHR Criterion 3. Lastly, the site is unevaluated under NRHP Criterion D and CRHR Criterion 4. The site may have the potential to yield information important to prehistory. Furthermore, since the site is located near where the Coco-Maricopa Trail is known to have existed, there is a possibility that the ceramic scatter could be associated with a larger resource. As such, it is currently unevaluated under NRHP Criterion D and CRHR Criterion 4.

### **GEN-JW-M-002**

GEN-JW-M-002 is a multi-component site consisting primarily of historic debris dispersed over a 60 meter by 60 meter area. The site is located among sandy alluvial deposits south of the McCoy Mountains. The majority of the artifacts at the site are located in a concentration measuring 10 feet by 10 feet, including 12 ration and food cans and five clear glass fragments. The site also includes one isolated multi-directionally flaked crypto-crystalline core (A1) north of the can scatter. The core is heavily sand blasted and has light patination. A single emplacement (Feature 1) is located near the western edge of the site. The emplacement is circular and measures approximately 12 feet by 18 feet with an opening to the south. A rotary open can lid was identified near Feature 1. South of the emplacement, there appears to be an additional emplacement with similar dimensions. However, the boundary of this possible emplacement is not well defined because it has been bisected by a large wash and has been overgrown with creosote.

GEN-JW-M-002 is recommended not eligible for inclusion to the NRHP under all Criteria (A-D) and the CRHR under all Criteria (1-4). Temporally diagnostic artifacts were not observed at the site that would demonstrate how it contributes to the broad patterns of history. As such the site is recommended not eligible for inclusion to the NRHP under Criterion A and the CRHR under Criterion 1. There is no evidence that the site is associated with the lives of persons important to the past and is recommended not eligible for inclusion to the NRHP under Criterion B and

recommended not eligible for inclusion to the CRHR under Criterion 3. The site has little potential to yield information important to the past. The artifacts observed at the site are well-represented in the archaeological record (see Keller 2010, Vargas 2010). Also, emplacement features are common in the area and generally do not yield information important to the past without associated artifacts. Recent research into such emplacement features in the area has suggested that they do not contain a subsurface component and generally have important information only if associated diagnostic artifacts are encountered (See Tennyson and Apple 2010, Tennyson 2011). Artifactual material present appears to represent secondary, redeposited materials not directly associated with the emplacements. The prehistoric component of the site consists of a single, non-diagnostic core. The site is recommended not eligible for inclusion to the NRHP under Criterion D and not eligible for inclusion to the CRHR under Criterion 4.

### **GEN-JW-P-003**

GEN-JW-P-003 consists of five flakes and two cores dispersed over a 25 meter north-south by 20 meter east-west area. The site is located among sandy alluvial deposits originating from the McCoy Mountains to the north of the survey area. All artifacts are crypto-crystalline silicate and appear to be a widely dispersed single lithic reduction (SLR) locus. The cores are located at the eastern and western boundaries of the site and the flakes are dispersed between them, slightly to the north. Each core is heavily sand blasted with light patination and at least three flake removals. Of the five flakes, two are smaller tertiary flakes (ranging between 4 centimeters [cm] and 7 cm in size) and three are primary flakes (ranging between 6 cm and 11 cm in size).

Based on the survey of GEN-JW-P-003, the site is recommended not eligible for the NRHP under all Criteria (A-D) and recommended not eligible for inclusion to the CRHR under all Criteria (1-4). SLRs are common features in the immediate area as well as the rest of the Colorado Desert and rarely contain a subsurface component (Tennyson and Apple 2010, Tennyson 2011). Because of their common occurrence, SLRs are unlikely to contribute to the broad patterns of history and the site is recommended not eligible for the NRHP under Criterion 1 and recommended not eligible for the CRHR under Criterion 1. The site is not associated with the lives of individuals important to the past and is recommended not eligible for inclusion to the NRHP under Criterion B and recommended not eligible for the CRHR under Criterion 2. As stated above, SLRs are common in this part of the Colorado Desert and this particular site does not contain any artifacts that are of a distinct style, type, or design. GEN-JW-P-003 is recommended not eligible for inclusion to the NRHP under Criterion C and recommended not eligible for inclusion to the CRHR under Criterion 3. Because SLRs are common and rarely have a subsurface component, the site has limited data potential in general and all data relevant to the past has been recorded during the survey. The site is recommended not eligible for inclusion to the NRHP under Criterion D and is recommended not eligible for the CRHR under Criterion 4.

### **GEN-JW-M-004**

GEN-JW-M-004 is a multi-component site that includes one large circular military emplacement and a prehistoric ceramic scatter measuring 20 meters north-south by 20 meters east-west. The emplacement was located near a large wash and measures 20 feet by 25 feet with an exit

towards the south. Raised berms approximately two feet high were present on the north, east, and west sides of the feature. Five ration cans most likely in secondary depositional locations were identified adjacent to the feature.

The ceramic scatter is located twenty meters north of the emplacement. The scatter appears to be the remains of a large vessel with a fine-grained temper and brown paste. Two large body fragments and one base fragment were identified. The base fragment measures 50 cm by 30 cm. No rim fragments were observed within the scatter.

GEN-JW-M-004 is recommended not eligible for inclusion to the NRHP under Criteria A-C. The emplacement feature is recommended not eligible for inclusion to the NRHP under Criterion D and the prehistoric portion of the site is unevaluated for inclusion to the NRHP under Criterion D. The site is also recommended not eligible for inclusion to the CRHR under Criteria A-C. The historic portion of the site is recommended not eligible for inclusion to the CRHR under Criterion 4 and the prehistoric portion of the site is unevaluated for inclusion to the CRHR under Criterion 4.

GEN-JW-M-004 does not contribute to the broad patterns of history and is recommended not eligible for inclusion to the NRHP under Criterion A and recommended not eligible for inclusion to the CRHR under Criterion 1. There is no evidence that the site is associated with the lives of persons important to the past and is recommended not eligible for inclusion to the NRHP under Criterion B and recommended not eligible for inclusion to the CRHR under Criterion 2. The artifacts recorded at the site do not represent a unique style, type, design, or method of construction/manufacture. As such, the site is recommended not eligible for inclusion to the NRHP under Criterion C and recommended not eligible for inclusion to the CRHR under Criterion 3.

The historic portion of GEN-JW-004 is recommended not eligible for inclusion to the NRHP under Criterion D because emplacement features are common to the area and rarely have any data important to history beyond any associated artifacts (Tennyson and Apple 2010, Tennyson 2011). The prehistoric portion of the site is unevaluated for inclusion to the NRHP under Criterion D and unevaluated for inclusion to the CRHR under Criterion 4 because the ceramic scatter may have the potential to yield information important to prehistory. Furthermore, since the site is located near where the Coco-Maricopa Trail is known to have existed, there is a possibility that the ceramic scatter could be associated with a larger resource. Until questions about the prehistoric component of the site can be answered, a recommendation of eligibility cannot be made.

### **Isolated Finds**

Nine isolated finds were identified in the GSEP survey area. Isolated finds are not considered eligible for the NRHP or CRHR unless they are exceptional (Farmer and Farrell 2011a, Farmer and Farrell 2011b). Table 4 lists the isolated finds identified during the current survey. None of the isolates are recommended eligible for inclusion to the NRHP or CRHR under any criteria.

**Table 4. Isolated Finds**

<b>Isolate Number</b>	<b>Description</b>	<b>Project Facility</b>
GEN-JW-ISO-1001	2 food cans	Option B Transmission Line Corridor
GEN-JW-ISO-1002	2 evaporated milk cans	Option B Transmission Line Corridor
GEN-JW-ISO-1003	1 ration can	Option B Transmission Line Corridor
GEN-JW-ISO-1004	1 food can	Option B Transmission Line Corridor
GEN-JW-ISO-1005	1 greyware pot sherd	Option B Transmission Line Corridor
GEN-JW-ISO-1006	Tested cobble	Option B Transmission Line Corridor
GEN-JW-ISO-1007	Secondary flake (CCS)	Option B Transmission Line Corridor
GEN-JW-ISO-1008	Primary flake (CCS)	Option B Transmission Line Corridor
GEN-JW-ISO-1009	Milled lumber	Option B Transmission Line Corridor

### **Recommendations**

Based on the results of the survey, no additional work is recommended for sites GEN-JW-M-002, GEN-JW-P-003, and the historic portion of GEN-JW-M-004. GEN-JW-P-001 and the prehistoric portion of GEN-JW-M-004 have been recommended eligible for inclusion to the NRHP and the CRHR.

Avoidance is the preferred method of treatment for all cultural resources. However, if avoidance is not feasible, then a project-specific testing program should be developed for those sites within the gen-tie corridor and recommended eligible for inclusion to the NRHP and CRHR that cannot be avoided.

#### **4.4 Geology and Paleontology**

The proposed changes to the gen-tie line would not have an adverse significant impact on the geology or paleontological resources since the disturbance would be in the same geologic unit as the original gen-tie.

#### **4.5 Hazardous Materials**

The proposed changes to the gen-tie would not have an adverse significant impact in the area of hazardous materials, or an increase in the amount to be used over the original gen-tie location.

#### **4.6 Land Use**

The proposed changes to the gen-tie would not change the land use in the area or traverse though an area with a different land use classification. The land in the area is currently undeveloped desert.

#### **4.7 Public Health**

The proposed changes to the gen-tie would not change any conditions related to public health.

#### **4.8 Socioeconomics**

The proposed changes to the gen-tie would not affect socioeconomics and would not increase or decrease the construction workforce.

#### **4.9 Traffic and Transportation**

The proposed changes to the gen-tie would not change any conditions related to traffic or transportation.

#### **4.10 Visual Resources**

The proposed changes to the gen-tie would not create significant visual differences. A key observation point for the project is from I-10. The change to the CRS location (for both Option A and B) removes the substation further from the casual viewer's observation, thereby creating less visual impact.

For Option B, the gen-tie line would cross I-10 to the east of Wiley's Well Road Interchange as opposed to the original crossing located west of Wiley's Well Road Interchange. Similarly, with Option B, the gen-tie will be located on the east side of Wiley's Well Road all the way south to the location of the LS Power (formerly BETL) line as opposed to the original line on the west side of Wiley's Well Road. This visual change is insignificant. There are no residences on either side of the road.

#### **4.11 Waste Management**

The proposed changes to the gen-tie would not change any conditions related to waste management.

#### **4.12 Soil and Water Resources**

The proposed changes to the gen-tie would not change any conditions related to soil or water resources.

#### **4.13 Worker Safety and Fire Protection**

The proposed changes to the gen-tie would not change any conditions related to worker safety or fire protection.

#### **4.14 Transmission System Engineering**

The proposed changes to the gen-tie would not change any conditions related to transmission system engineering.

#### **4.15 Transmission Line Safety and Nuisance**

The proposed changes to the gen-tie would not change any conditions related to transmission line safety and nuisance.

## **5.0 POTENTIAL EFFECTS ON PROPERTY OWNERS AND GENERAL PUBLIC**

The CEC Siting Regulations Section 1769 (a)(1)(1) requires the project owners to address any potential effects the proposed amendment may have on nearby property owners, the public, and parties to the proceeding. There are no residential housing units in the area or nearby.

Since the issuance of the CEC Final Decision, no new property owners have moved within 1,000 ft. of the proposed southern location of the CRS or within 1,000 ft. of the Option A or Option B gen-tie route. The location of the gen-tie route for either Option A or Option B is on BLM administered land, similar to the original gen-tie route. The new location of the gas line tie-in is on private land; however the private land is owned by the Applicant and the use of this land for the gas line is an approved use.

Therefore, the proposed modifications for either Option A or B will not result in new or different effects to existing property owners.

## **6.0 REFERENCES**

- Farmer, Travis Reid and Farrell, Jenna. 2011a. Cultural Resources Monitoring and Mitigation Plan for the Genesis Solar Energy Project (09-AFC-8).
- Farmer, Travis Reid and Farrell, Jenna. 2011b. Historic Properties Treatment Plan for the for the Genesis Solar Energy Project (09-AFC-8).
- Keller, Angela H. 2010. *Cultural Resources Class III Survey Draft Report for the Proposed Blythe Solar Power Project Riverside County, California*. Prepared for Palo Verde Solar 1, LLC, California Energy Commission and U.S. Bureau of the Interior, Bureau of Land Management.
- Tennyson, Matthew, 2011. Evaluation Report for Phase 1B of the Blythe Solar Power Project. Report on file at AECOM San Diego.
- Tennyson and Apple 2010. Evaluation Report for Phase 1A of the Blythe Solar Power Project. Report on file at AECOM San Diego.
- Tetra Tech Inc. and Karl, Alice. 2009. *Biological Resources Technical Report for the Genesis Solar Energy Project*.
- Tetra Tech Inc. and Karl, Alice. 2010. *Fall 2009 and Spring 2010 Biological Resources Technical Report*.
- U.S. Fish and Wildlife (FWS). 2009. Desert Tortoise Protocols.
- Vargas, Benjamin, 2010 *Addendum 1 Cultural Resources Class III Report for the Proposed Blythe Solar Power Project Riverside County, California*. Prepared for Palo Verde Solar I, LLC.

## ATTACHMENT A

### Modification to Equipment Descriptions and Conditions

Since the changes are still in process with the MDAQMD, the text below shows the equipment as contained in the ATC permits issued by MDAQMD, but with the changes requested by Genesis Solar in an application filed on February 13, 2012 and additional information provided on March 22, 2012. The MDAQMD has indicated that they do not see any problems with adopting the changes as proposed, but they are still reviewing these modifications as of the date of this filing. Emissions changes associated with the selection of specific equipment for the generators and fire water pump engines is compared in Table A-1.

#### DESCRIPTION (ATC C011062 and C011063):

HTF ULLAGE SYSTEM AND CARBON ABSORPTION RECLAMATION SYSTEM WITH CARBON FILTER ADSORPTION – SYSTEM (UNIT 1 and UNIT 2) consisting of:

Two carbon adsorption canisters in series parallel with ~~85~~98% control efficiency in each stage with an overall control efficiency of 98%. Canister capacity/dimensions to be provided once determined.

#### Capacity Equipment Description

~~Vertical expansion tanks~~

~~Nitrogen condensing tank~~

HTF Ullage ~~c~~irculation pumps

HTF Ullage discharge pump

HTF Ullage ~~tank (vapors)~~ vessel 1

HTF Ullage vessel 2

Ullage ~~tank~~ cooler 1

Ullage cooler 2

HTF Ullage drain tank ~~vessel~~

HTF reclamation flash ~~tank~~ vessel

~~HTF Waste storage tank~~

~~HTF piping headers~~

Associated piping and components

~~Carbon adsorption beds~~-HTF system vent carbon filter

In addition to these clarifications to the equipment description, we note that one of the clauses (f.) to Condition of Certification AQ-10 appears to have been inadvertently omitted from the Final Decision. This additional item should be inserted (after e.) and read as follows:

- f. Total emissions of benzene to the atmosphere shall not exceed 0.6 lbs/day and 220 lbs/year calculated based on the most recent monitoring results.

**DESCRIPTION (ATC E011066 and E011067):**

DIESEL IC ENGINE, FIRE PUMP #1 ~~(and #2)~~ consisting of:

Year of Manufacture ~~td~~ 2011: USEPA Family Name ~~td~~ BJDXL09.0114: CARB Executive Order ~~td~~: Tier 3 As described or equivalent with prior District approval., One John Deere, Diesel fired internal combustion engine, Model No. ~~JUSH-UFAD98~~ JW6H-UFADF0 and Serial No. ~~td~~, producing ~~345~~ 327 bhp with 6 cylinders at ~~4800~~ 1760 rpm while consuming a maximum of ~~4525~~ gal/hr. This equipment powers a fire pump.

(Note, Genesis previously planned to have two fire pumps, but it has been decided that instead of two diesel fire water pumps, the facility will have one 100% duty electric motor driven fire water pump and one 100% diesel fire water pump as a backup. The diesel pump will be located in the common area and can feed both/either unit as currently designed. Therefore, we have requested that the 2<sup>nd</sup> pump permit (E011067) be cancelled.)

**DESCRIPTION (ATC E011064 and E011065):**

DIESEL IC ENGINE, EMERGENCY GENERATOR consisting of:

Year of Manufacture ~~td~~: 2010 USEPA Family Name ~~td~~: ACPXL32.0ESW CARB Executive Order ~~td~~: Tier 3 As described or equivalent with prior District approval., One Caterpillar, Diesel fired internal combustion engine, Model No. C32 and Serial No. ~~td~~, producing ~~4344~~ 1474 bhp with 12 cylinders at 1800 rpm while consuming a maximum of 72 gal/hr. This equipment powers a Generator.

**DESCRIPTION (ATC B011060 and B011061):**

AUXILIARY BOILER #1 (and #2) consisting of:

~~RRentech Victory Boiler, Model D-type Watertube 3-pass wetback firetube type, Model No. F3-750-S150, Serial Number TBD, low-NOx burner Powerflame Model ~~TDB~~Nova Plus NVC13-G-30, Serial Number TBD rated at a maximum heat input of 30 MMBtu/hr HHV, and flue gas recirculation, (FGR or EGR) operating at 1555% excess air, fueled exclusively on utility grade natural gas or equivalent with prior District approval. Equipment shall use ~~no~~ not more than~~

31,579 cu-ft./hr of fuel. Boiler will be equipped with a stack that is ~~the~~ 47.5 feet high and ~~the~~ 28.5 inches in diameter.

**DESCRIPTION (ATC N011068):**

The Genesis Solar Energy Project was initially proposed with one 2,000 gallon gasoline tank and one 3,000 gallon diesel tank. However, Genesis Solar revised this design to be one 2,000 gallon gasoline tank and one 1,000 gallon diesel tank (in a split tank design).

GASOLINE DISPENSING FACILITY (NON-RETAIL) consisting of:

A) Tanks – Number of Tanks	1 tank with two compartments		
	Tank No.	1	2
1. Material Stored		87U	Diesel
2. Volume Gallons		2,000	<del>3,000</del> <u>1,000</u>
3. Above/UnderGrnd		A	A

Since the volume of the gasoline tank or the fuel dispensing has not been changed, no changes in the VOC emissions for this unit are proposed.

**DESCRIPTION (ATC B011448 and B011449):**

The GSEP was initially proposed to be wet cooled with 7-cell mechanical draft cooling towers, one at each generating unit. However, Genesis Solar revised this design in response to CEC concerns, and is instead installing Air Cooled Condensers (ACCs), also known as dry cooling. In addition to the ACCs, the project will also have two small two cell cooling towers and a raw water cooler. The raw water cooler is exempt from permit. The two evaporative cooling towers will each use 3,450 gpm, with a drift rate of 0.0005% for auxiliary cooling. The maximum total dissolved solids (TDS) of 5,000 ppmv is not being modified.

In order to reflect the significant reduction in the change to the amount of water recirculation, Condition of Certification AQ-20 should be revised as follows:

**AQ-20** The drift rate shall not exceed 0.0005 percent with a maximum circulation rate of ~~94,623~~ 3,450 gallons per minute. The maximum hourly PM10 emission rate shall not exceed ~~2.36~~ 0.043 pounds per hour, as calculated per the written District-approved protocol.

**Verification:** The manufacturer guarantee data for the drift eliminator, showing compliance with this condition, shall be provided to the CPM and the District 30 days prior to cooling tower operation. As part of the Annual Compliance Report the project owner shall include information on operating emission rates to demonstrate compliance with this condition.

In addition, Condition of Certification AQ-23 should be deleted since these small towers have been assumed to operate up to 8,760 hours per year.

**Table A-1: Comparison of Revised\* Annual Emissions**

	Current Annual Emissions (tpy)					Proposed Annual Emissions (tpy)				
	NOx	CO	VOC	PM	SOx	NOx	CO	VOC	PM	SOx
Fire Water Pumps (2)	0.09	0.02	0.002	0.002	0.0003	0.09	0.03	0.004	0.004	0.0003
Emergency Generators (2)**	0.40	0.07	0.009	0.008	0.0003	0.80	0.02	0.002	0.003	0.0008
Cooling Towers and Cooler (3)***	--	--	--	10.36	--	--	--	--	0.37	--
<b>Total Emissions</b>	<b>0.49</b>	<b>0.08</b>	<b>0.011</b>	<b>10.37</b>	<b>0.0005</b>	<b>0.89</b>	<b>0.05</b>	<b>0.005</b>	<b>0.37</b>	<b>0.001</b>

\* Does not include HTF ullage and reclamation systems, auxiliary boilers, gasoline dispensing facility, or maintenance vehicle emissions which remain unchanged.

\*\* "Current" emissions adjusted to reflect Tier 2 engines.

\*\*\* Cooling units not currently listed on ATCs, and "current" emissions are based on the initial GSEP application. For proposed cooling towers, operations of 8,760 hours per year were conservatively assumed.