B. Description of Proposed Project

B.1 Introduction

This section describes the Devers–Palo Verde 500 kV No. 2 (DPV2) Transmission Project Colorado River Substation Expansion (Proposed Project). The Colorado River Substation (CRS) was identified as the Midpoint-DSW Substation as part of the Desert Southwest Transmission Project Alternative in the Final EIR/EIS for the DPV2 project. The substation site was approved by the CPUC in November 2009 as part of the Decision (D.)09-11-007 adopting a Petition for Modification of D.07-01-040) to construct the DPV2 California-only portion. The Midpoint-DSW Substation was described in Section C.4.4 (Desert Southwest Transmission Project Alternative) and addressed in Section E.2.1 (Proposed Project vs. Desert Southwest Transmission Project Alternative) of the DPV2 Final EIR/EIS (October 2006). The DPV2 Final EIR/EIS concluded that the Midpoint Substation and the Midpoint-DSW Substation would be equally environmentally superior (CPUC, 2006)

Following approval of the DPV2 project, several large solar power projects were proposed in the Blythe area. Two of these projects, the Blythe Solar Power Project (BSPP) and the Genesis Solar Energy Project (GSEP), have requested interconnection to the electricity grid at the CRS. As a result, the solar developers and SCE developed a plan to expand the CRS to accommodate increased equipment and allow generation tie lines to be interconnected with the SCE 500 kV transmission system. On November 3, 2010, SCE filed an Application for a Permit to Construct the Colorado River Substation Expansion Project (A.10-11-005).

This section provides a detailed description of the Proposed Project, including facilities and equipment, construction methods and schedule, and operations. The potential environmental effects of the project elements identified and described here are analyzed in Section D. Section B.2 provides a description of the CRS as it was analyzed in the Final EIR/EIS. Section B.3 describes the CRS Expansion and Section B.4 describes the solar projects that are considered to be "connected actions" to the substation expansion. Section B.5 describes Applicant Proposed Measures and Mitigation Measures.

B.2 Description of the CRS as Analyzed in 2006 EIR/EIS

In the DPV2 Final EIR/EIS, the Midpoint-DSW Substation location was identified as an alternative to the proposed DPV2 Midpoint Substation location. CPUC identified the DPV2 Midpoint Substation and the Midpoint-DSW Substation site as environmentally equivalent. In Decision D.09-11-007, the CPUC approved both substation locations, and determined that construction at either location did not trigger the need for additional CEQA review.[1] The CPUC-approved Midpoint-DSW Substation site was ultimately selected by SCE as the location for the CRS. The locations of the Colorado River Substation and the original Midpoint Substation are shown on Figure B-1.

The Midpoint-DSW Substation was assumed to have the same layout as the proposed DPV2 Midpoint Substation, which is described in Section B.3.4.2 (Midpoint Substation) of the Final EIR/EIS. The substation was proposed to be constructed within a rectangular area approximately 1,000 feet by 1,900 feet, resulting in approximately 44 acres of permanent disturbance. The size of the substation has since been expanded, as described in Section B.3.

[1] The authorization in D.09-11-007 was supported by the "Addendum to the Final [EIR]" (February 2009) included as Appendix A in Attachment 2 to the Decision.

The following components were defined for the originally proposed Midpoint Substation and would also be required for the CRS:

- The terminating transmission tower or turning pole would be the tallest structure at the substation, ranging between 50 and 180 feet tall.
- The tallest component in the switchrack, the dead-end, would be approximately 133 feet.
- The switching facilities would be constructed within the substation property. The 500 kV switching station would include buses, circuit breakers, and disconnect switches. The switchyard would be equipped with 108-foot-high dead-end structures.
- Outdoor night lighting would be designed to illuminate the switchrack when manually switched on.
- A new telecommunications facility at the Substation would provide microwave and fiber optic communications needed for protective relaying and Special Protection Systems (SPS).
- Three new microwave paths would be installed, requiring a microwave tower onsite.
- Two fiber optic systems would be installed at the substation as well. The proposed fiber optic systems are between CRS–Buck Boulevard Substation and CRS-Devers-Harquahala.
- A 45-foot-by-70-foot mechanical-electrical equipment room would be installed on the site to house all controls and protective equipment and a telecommunications room.

The original substation design included the loop-in of the Devers–Palo Verde No. 1 Transmission Line (DPV1) and DPV2 transmission lines. In order to accommodate the solar generation interconnection, the expanded substation will include 500/220 kV transformer banks and a 220 kV switchyard. The substation layout is illustrated in Figure B-2 (Substation Layout).

In addition, the DPV2 Midpoint Substation included descriptions of a temporary lay down area covering approximately 5 acres and a permanent 3-mile-long, 24-foot-wide two-lane access road. The sizes of the temporary lay down area and permanent access road have since been expanded, as illustrated in Figure B-3 (Permanent and Temporary Disturbed Areas).

B.3 Description of Expanded Colorado River Substation

B.3.1 Project Location

The CRS would be located on an approximately 160-acre parcel of land located approximately 1.5 miles south of Interstate 10 and 4.75 miles east of Wiley Well Road, in the County of Riverside, California, as shown on Figure B-1. The expanded substation would be generally located in the center of the parcel and cover approximately 90 acres of land, when features both inside and outside of the substation perimeter wall are considered. The approximate center of the CRS area within the perimeter wall would be at 33.59 degrees north and 114.82 degrees west. However, the specific location of the substation may shift as a result of final engineering.

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

B.3.2 Project Components

Figure B-2a and Figure B-2b illustrate the proposed layout and profile of equipment in the expanded CRS. SCE proposes to expand the CRS and construct the following elements.

Colorado River Substation Expansion

SCE would expand the 500 kV substation previously approved as part of the DPV2 CPCN on approximately 45 acres of land, into a full 2240 MVA 500/220 kV substation on approximately 90 acres of land, which includes approximately 77 acres of permanent disturbance within the substation perimeter wall and approximately 13 acres of enhancements (e.g. flood protection berm and stormwater detention basin) outside of the perimeter wall. The expanded substation perimeter would be approximately 1,530 feet by 2,200 feet surrounded by an 8-foot-high wall with barbed wire and razor wire and two gates. The substation would include the 500 kV switchrack, 500/220 kV transformer banks, and a 220 kV switchrack (SCE, 2010d). The terminating transmission towers would be the tallest structures at the substation, ranging between 190 and 220 feet tall.

In addition to the CRS expansion, new components have been included in the substation design. Although the CRS would be an unmanned substation, the substation would include restroom facilities for visitors and maintenance workers (SCE, 2010b). To support these facilities, a septic system and leach field would be installed at the substation site. The septic system would be fully permitted and subject to conditions of the County of Riverside. The location of the septic tank and leach field will be within the footprint of the substation, as determined during more detailed design of the substation.

SCE is also proposing to construct and operate a water well and temporary water storage at the CRS site to provide water for soil conditioning and dust control during construction and for other minor non-potable uses (i.e., lavatory purposes) during long-term substation operations (SCE, 2010b). The proposed water well location is shown in Figure B-4 (Water Well Location). The peak water draw from the well during construction is estimated at 300,000 gallons per day for an approximate period of 4 to 6 months during grading, and approximately 120,000 gallons per day for the remainder of construction (approximately 18 months). During substation operation, up to 750 gallons per month would be pumped from the water well for the minor uses at the substation (i.e., restroom facilities and day-to-day non-potable water needs).

500 kV Transmission Line Interconnection

SCE would loop the two 500 kV circuits and terminate the new Devers-Colorado River (DCR) transmission line into the CRS. This component was already described and approved in the DPV2 Final EIR (see Figure B-18; CPUC, 2006), and therefore it has been included in the modified CPCN and is not analyzed in this SEIR.

Modification of Existing 220 kV Structures

SCE originally proposed that the existing 220 kV structures would be modified to allow the DCR to cross the Buck-Julian Hinds 220 kV transmission line; however, this modification is no longer needed so it is not analyzed in this SEIR.

Electric Distribution Line for Station Light and Power

SCE would construct approximately 3,000 feet of 33 kV overhead distribution line and approximately 1,000 feet of underground distribution line to connect a nearby existing distribution system to the CRS to provide substation light and power. The distribution line for station light and power would extend from an existing 33 kV line (located approximately one-half mile north of the CRS site along an existing east-west access road that extends from Blythe Way (to the east). Extension of this existing 33 kV line to the site would require installation of approximately 20-25 new wood poles and about 3,000 feet of new conductor (between the existing line and the CRS to the south). Access to the poles would be created as the poles are installed by utility vehicles as they progress along the route. The access way would not be graded (drive and crush only), and would remain following line installation for future inspection and maintenance. The new poles would disturb approximately 0.01 acres (roughly 25 square feet) per pole. The exact alignment would be determined during final substation design. Figure B-5 (Proposed Distribution and Telecom), shows a north-south corridor extending north of the site, which represents the general location of the distribution power line extension.

Access Road Improvements

An existing graded, but otherwise unimproved, transmission line access road (approximately 13 feet wide) parallels the existing Devers–Palo Verde 500 kV transmission line between the site and Wiley Well Road. This access road section is approximately 4.7 miles in length. This access road would serve as the substation entrance road and would be improved to a full 24-foot width with a two-foot-wide shoulder on each side, for a total width of approximately 30 feet, including allowances for side slopes and surface runoff control.

Widening and improving this access road would include compacting subsurface soils and placing a four-inch-thick layer of asphalt concrete over a six-inch-thick layer of compacted aggregate base. Given that the existing access road between Wiley Well Road and the CRS site is currently disturbed, the road improvements would result in approximately 10.3 acres of additional permanent disturbance.

Three access driveways will be constructed in order to provide a path from the main access road to the substation site. Two of the access driveways will be permanent, connecting to gates at the southwest and southeast corners of the substation. In addition, a temporary access road will be constructed to provide a route from the main access road to the temporary staging area. The total permanent and temporary disturbance for these three access driveways is approximately 1.3 acres.

Telecommunication System

The DPV2 Final EIR/EIS described the proposed telecommunication (telecom) facilities in Table B-5 and included two fiber optic systems from the Midpoint-DSW Substation (now called CRS) (CPUC, 2006). The Final EIR/EIS states that a new telecommunications facility would be installed at the Midpoint Substation (now CRS) to provide microwave and fiber optic communications needed for the protective relaying and special protection system (SPS). With the approval of the California-only portion of the project, there is a need to provide a telecom link between the CRS and the existing Blythe Service Center (BSC).

The telecom route would include two fiber optic lines, approximately 29,755 feet (5.6 miles) of optical ground wire (OPGW) and approximately 71,633 feet (13.6 miles) of All-Dielectric Self-Supporting (ADSS) fiber optic cable. The telecommunication lines would extend from the CRS, one to the southeast (southeast telecom line) and the second to the north and east (northern telecom line) (see Figures B-1 and B-5). On average, all existing and new overhead structures would be between 25 feet and 65 feet tall.

These routes are preliminary and may change as field surveys occur and the design of the telecommunication system progresses.

- **Southeastern Telecom Line**. The southeast telecom line from the CRS would connect with the BSC. The southeast telecom line would extend from the CRS for about 5.5 miles along the existing DPV1 towers to approximately Tower M123-T1, where it would transition to new and existing poles located along an existing east-west patrol road. It would then be routed to the bottom of the mesa and along existing streets (22nd Avenue to Lovekin Boulevard) in the Palo Verde Valley to the BSC (approximately 14 miles).

  The OPGW would be installed using pulling/splicing sites along the DPV1 right-of-way (ROW). For the portion of the southeast telecom line east of the DPV1 ROW, approximately 100 wood poles would be installed from the DPV1 ROW (about 5 miles southeast of the substation site) until existing poles can be used. The detailed alignment of the southeast telecom line would be defined during the final engineering design.

- **Northern Telecom Line**. The northern telecom line from the CRS would connect with the Buck Substation located to the northeast of the CRS. The fiber optic line would be installed on the same poles as the 33 kV line extension (distribution power line extension) that would be extended to the CRS (from the north). The telecom line would then be installed on existing poles (along an existing access road, Blythe Way, north across I-10 to Hobson Way) to the Buck Substation. Several locations would be installed in underground conduit along the existing roadways. This would not require new poles or additional ground disturbance to previously undisturbed areas.

B.3.3 Project Construction

As part of the permitting process for the BSPP and GSEP, SCE provided the following information regarding construction of the CRS Project (SCE, 2010e).

B.3.3.1 Construction Activities

CRS Expansion

Expansion of the CRS would entail clearing existing vegetation and installing a temporary chain link fence to surround the construction site. The site would be graded in accordance with grading plans approved as part of this project (SCE, 2010e). 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 CRS expansion 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 substation location, it may still be necessary to redirect surface water flow around the north and east sides of the substation. The combined CRS (expansion and original footprint) and the 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 7.4 acres which is included in the total disturbance areas shown on Figure B-3.

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 total permanent disturbance area of the detention basin is approximately 1.7 acres. The final site drainage design would be designed according to applicable standards issued by the County of Riverside.

Table B-1 provides the approximate volume and type of earth materials to be used or disposed of at the CRS Project site (both within the substation wall and the required drainage structures outside/around the substation) as a result of substation expansion. The numbers presented in Table B-1 are preliminary and subject to change as the result of detailed engineering.

Table B-1. Colorado Substation Expansion Site – Ground Surface Improvement Materials and Estimated Volumes

Element	Material	Approx. Volume (cubic yds)[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 Class II aggregate base	1,200 2,800
External Driveway	Asphalt concrete Class II aggregate base	0 0
Substation Rock Surfacing	Rock, nominal 1 to 1-1/2 inches per SCE Standard	15,000

Source: SCE, 2010e.

1 - The material volumes presented in Table 1 are for the expanded Project site work only. Additional material volumes needed for surface improvement of the initial 44-acre Colorado River Substation were already included in the previously approved DPV2 Final EIR/EIS.
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 typically factory fabricated, delivered to the site, and installed by crane. Intersections are cast-in-place concrete.

An approximately 13.4-acre temporary staging area adjacent to the CRS site will be required to facilitate construction of the substation (SCE, 2010a). This represents an increase in the staging area size from the five-acre area that was that originally described in the DPV2 Final EIR/EIS. The staging area would be accessible from the existing access road along the substation site. The final location and size could still shift to reduce or avoid any environmental impacts, and it will be determined as a more detailed substation design is developed. Additional temporary disturbances up to 20 acres around the substation may be required to provide adequate clearances for temporary construction work zones.

During the detailed engineering & design phase, SCE expects to conduct a geotechnical study of the CRS expansion site 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.

After the CRS expansion site is graded, below grade facilities would be installed. Below grade facilities would 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. Above grade installation of substation facilities associated with the substation expansion (i.e., buses, circuit breakers and steel structures) would commence after the below grade structures are in place.

Construction of the substation expansion 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 (SWPPP) prepared for the CRS expansion 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.

Construction of the substation expansion would result in the generation of various waste materials that could 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. Nonhazardous waste would be transported to local authorized waste management facilities. Soil excavated for the substation expansion would either be used as fill or disposed of off-site at an approved licensed facility.

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 restore all areas that were temporarily disturbed by construction of the substation expansion to as close to preconstruction conditions as possible, or, where applicable, to the conditions agreed upon between the BLM 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.

Most pole sites would require minimal site preparation prior to pole installation. The majority of the proposed pole locations would be along the existing SCE ROW or public roads. Sites may require minor grading, leveling, or clearing to accommodate the new poles. Where new access roads would be necessary, pole sites would be cleared and graded at approximately the same time that access roads for the 33 kV line extension are constructed.

During the installation process, crews will use the CRS and Blythe Construction Yards as staging and lay down areas. New wood poles for the distribution light and power/telecom route would be installed in native soil, in holes bored approximately 18 to 24 inches in diameter and 5 to 7 feet deep. Wood poles are normally installed using a Digger Derrick truck. Once the poles have been set in place, bore spoils (material from holes drilled in the soil) would be used to backfill the hole. If the bore spoils are not suitable for backfill, imported clean fill material, such as clean fill dirt and/or pea gravel, would be used. Excess bore spoils would be distributed at each pole site.

The fiber optic cable will use a high density polyethylene smooth wall inner duct that provides protection for and identification of the cable. The fiber optic cable will be installed in the new underground conduit structure consisting of 5” PVC schedule 40 and underground manhole structures.

Fiber optic pulling and splicing sites will be required during installation of the proposed Telecom Route. Fiber optic cable pulling sites typically occur every 6,000 to 10,000 feet and are required at the end and beginning of each cable pull. “Fiber optic cable pulls “are the length of any given continuous cable installation process between two selected points along the overhead or underground structure line. Fiber optic cable pulls are selected, where possible, based on availability of pulling equipment and designated dead-end structures at the ends of each pull, geometry of the line as affected by points of inflection, terrain, and suitability of fiber optic cable stringing and splicing equipment setups. The dimensions of the area needed for stringing setups varies upon the terrain; however, a typical stringing setup is 40-by-60 feet. Where necessary, due to suitable space limitations, crews can work from within a substantially smaller area.

Telecommunications System Installation

Most pole sites would require minimal site preparation prior to pole installation. The majority of the proposed pole locations would be along the existing SCE ROW or public roads. Sites may require minor grading, leveling, or clearing to accommodate the new poles. Where new access roads would be necessary, pole sites would be cleared and graded at approximately the same time that access roads for the 33 kV line extension are constructed.

During the installation process, crews would use the CRS and Blythe Construction Yards as staging and lay down areas. New wood poles for the distribution light and power/telecom route would be installed in native soil, in holes bored approximately 18 to 24 inches in diameter and 5 to 7 feet deep. Wood poles are normally installed using a Digger Derrick truck. Once the poles have been set in place, bore spoils (material from holes drilled in the soil) would be used to backfill the hole. If the bore spoils are not suitable for backfill, imported clean fill material, such as clean fill dirt and/or pea gravel, would be used. Excess bore spoils would be distributed at each pole site.

The fiber optic cable would use a high density polyethylene smooth wall inner duct that provides protection for and identification of the cable. The fiber optic cable would be installed in the new underground conduit structure consisting of 5-inch PVC schedule 40 and underground manhole structures.

Fiber optic pulling and splicing sites would be required during installation of the proposed telecom route. Fiber optic cable pulling sites typically occur every 6,000 to 10,000 feet and are required at the end and beginning of each cable pull. “Fiber optic cable pulls” are the length of any given continuous cable installation process between two selected points along the overhead or underground structure line. Fiber optic cable pulls are selected, where possible, based on availability of pulling equipment and designated dead-end structures at the ends of each pull, geometry of the line as affected by points of inflection, terrain, and suitability of fiber optic cable stringing and splicing equipment setups. The dimensions of the area needed for stringing setups varies upon the terrain; however, a typical stringing setup is 40 by 60 feet. Where necessary, due to suitable space limitations, crews can work from within a substantially smaller area.

B.3.3.2 Estimated Disturbance

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

Table B-2. Project Construction – Estimated Land Disturbance Summary[1]

Construction Activity	Acres Temporarily Disturbed	Acres Permanently Disturbed
CRS Substation Expansion Footprint	—	33.7
Storm Water Detention Basin	—	1.7
Drainage Improvements (Berm)	—	7.4
Permanent Access Driveways	—	1.0
Access Road		10.3
Temporary Staging Area	13.4	—
Temporary Access Road	0.3	—
Temporary Work Zones	20.0	—
Telecom System	0.6–1.02	0.6
Total Acres Disturbed	34.3–34.72	54.7

1 - The land disturbance estimates presented in Table B-2 are for the expanded project site work only. Initial land disturbance for the 44-acre switchyard grading and access road were already included as part of the DPV2 Final EIR/EIS.

The disturbance areas shown in Table B-2 include only the expansion area of the CRS; they do not include the original 44 acres that were considered in the DPV2 Final EIR/EIS. As such the total disturbance area including both permanent and temporary disturbance for the CRS would be approximately 133 acres.

B.3.3.3 Labor and Equipment

The estimated elements, materials, number of personnel and equipment required for construction of the substation expansion are summarized below in Table B-3. The numbers presented in Table B-3 are preliminary and may change as the result of additional detailed engineering.

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

Construction would be performed by SCE construction crews and/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 to 40 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 depend on city permitting, material availability, and construction scheduling.

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 Riverside County and other entities.

SCE current schedule assumes that the CPUC would issue a Notice to Proceed for the proposed CRS in July 2011. Pre-construction compliance would begin in August 2011 and construction would start in October 2011. The substation would be operational in May 2013, which is earlier than SCE's schedule of third quarter 2013 that was included in its PTC application to the CPUC (SCE, 2011a; SCE, 2010d).

Table B-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 (4 people)	10	2 - Survey Trucks (Gasoline)	8
Grading (16 people)	90	1 - Dozer (Diesel)	4
		2 - Loader (Diesel)	4
		3 - Scraper (Diesel)	8
		1 - Grader (Diesel)	3
		3 - Water Truck (Diesel)	8
		2 - 4X4 Backhoe (Diesel)	2
		1 - 4X4 Tamper (Diesel)	2
		1 - Tool Truck (Gasoline)	2
		1 - Pickup 4X4 (Gasoline)	2
Fencing (8 people)	25	1 - Bobcat (Diesel)	8
		1 - Flatbed Truck (Gasoline)	2
		1 - Crewcab Truck (Gasoline)	4
Civil (20 people)	120	1 - Excavator (Diesel)	4
		1 - Foundation Auger (Diesel)	5
		2 - Backhoes (Diesel)	3
		1 - Dump Truck (Diesel)	2
		1 - Skip Loader (Diesel)	3
		1 - Water Truck (Diesel)	3
		2 - Bobcat Skid Steer (Diesel)	3
		1 - Forklift (Propane)	4
		1 - 17-Ton Crane (Diesel)	2 hrs/day for 45 days
		1 - Tool Truck (Gasoline)	3
Mechanical-Electrical Equipment Room (6 people)	120	3 - Carry-all Truck (Gasoline)	3
		2 - Tool Truck (Gasoline)	2
		1 - Stake Truck (Gasoline)	2
Electrical (15 people)	120	2 - Scissor Lifts (Propane)	3
		2 - Manlifts (Propane)	3
		1 - Reach Manlift (Propane)	4
		1 - 15-Ton Crane (Diesel)	3
		1 - Tool Trailer	3
		3 - Crew Trucks (Gasoline)	2
Wiring (10 people)	120	1 - Manlift (Propane)	4
		1 - Tool Trailer	3
Maintenance Crew Equipment Check (4 people)	30	2 - Maintenance Trucks (Gasoline)	4
Testing (4 people)	120	1 - Crew Truck (Gasoline)	3
Asphalting (16 people)	40	2 - Paving Roller (Diesel)	4
		1 - Asphalt Paver (Diesel)	4
		1 - Stake Truck (Gasoline)	4
		1 - Tractor (Diesel)	3
		2 - Dump Truck (Diesel)	3
		2 - Crew Trucks (Gasoline)	2
		1 - Asphalt Curb Machine (Diesel)	3

B.3.4 Operations and Maintenance

The CRS would be an unmanned substation. All structures at the CRS would be inspected annually on the ground to detect problems with corrosion, equipment alignment, or foundations. Routine substation inspection includes inspection of hardware, insulator keys, and conductors. Emergency inspections would occur as necessary.

B.4 Connected Actions

As described in Section B.1, the expansion of the CRS is required in order to allow interconnection generation from the Blythe and Genesis solar facilities. These facilities are approved by the California Energy Commission and Bureau of Land Management. Due to the related nature of the solar facilities and the proposed CRS expansion, they are considered to be part of "the whole of the action" under CEQA. Therefore, the impacts of the solar facilities should be considered by the CPUC in its determination of whether to approve the CRS.

The requirement to consider impacts of related projects stems from CEQA Guidelines, Section 15003(h), which states that "The lead agency must consider the whole of an action, not simply its constituent parts, when determining whether it will have a significant environmental effect." In addition, CEQA Guidelines, Section 15378(a) defines "Project" as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment . . . ."

The CPUC has determined that any projects with approved Power Purchase Agreements (PPA) that require interconnection to the CRS should be analyzed as part of the "whole of the action" in this Supplemental EIR. The CPUC's PPA database was used to define these projects. According to the database, the CPUC has determined that there are two projects that are so closely related to the Proposed Project as to be considered "connected actions" or part of "the whole of the action." Those projects are the BSPP and the GSEP. Each project is briefly summarized below, and the impacts of these projects are summarized in Section D for each environmental discipline. As discussed in Section A.5.2, numerous environmental analyses of these projects have recently been conducted by other agencies. These analyses are incorporated by reference into this Supplemental EIR.

Note that this SEIR also considers cumulative impacts in Section E. This analysis includes projects that are related to the proposed substation analysis because of their location, timing, or resources affected. The projects considered in the cumulative analysis are not contingent upon the substation for their development, but their impacts may combine with those of the expanded substation. These impacts are disclosed in Section E.3.

B.4.1 Blythe Solar Power Project

The description presented here is from the Energy Commission's Decision certifying the project, issued on September 23, 2010 (CEC, 2010g). The full decision and the environmental analysis supporting that decision are available on the Energy Commission's project website at:

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

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

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

The would consist of four adjacent, independent, units of 250 megawatt (MW) nominal capacity each for a total nominal capacity of 1,000 MW. The Project would utilize solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola.

A heat transfer fluid (HTF) is brought to high temperature (750°F) as it circulates through the receiver tubes. The HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced.

The components of the BSPP include the following:

- **Solar Collector Assemblies –** The project's SCAs are oriented north-south to rotate east-west to track the sun as it moves across the sky throughout the day. The SCAs collect heat by means of linear troughs of parabolic reflectors, which focus sunlight onto a straight line of heat collection elements (HCEs) welded along the focus of the parabolic "trough."
- **Parabolic Trough Collector Loop –** Each of the collector loops consist of two adjacent rows of SCAs; each row is about 1,300 feet long. The two rows are connected by a crossover pipe. HTF is heated in the loop and enters the header, which returns hot HTF from all loops to the power block where the power generating equipment is located.
- **Mirrors –** The parabolic mirrors to be used in the project are low-iron glass mirrors. Typical life spans of the reflective mirrors are expected to be 30 years or more.
- **Heat Collection Elements –** The HCEs of the four solar plants are comprised of a steel pipes surrounded by an evacuated glass tube insulator. The steel pipe has a coated surface, which enhances its heat transfer properties with a high absorptivity for direct solar radiation, accompanied by low emissivity. Glass-to-metal seals and metal bellows are incorporated into the HCE to ensure a vacuum-tight enclosure. The enclosure protects the coated surface and reduces heat losses by acting as an insulator.
- **HTF System –** In addition to the HTF piping in the solar field, each of the four HTF systems includes three elements: (1) the HTF heat exchanger, (2) the HTF expansion vessel and overflow vessel, and (3) the HTF ullage system. A heat exchanger would be used to help ensure system temperature stays above 54°F (12°C). The HTF expansion vessel and overflow vessel are required to accommodate the volumetric change that occurs when heating the HTF to the operating temperature. During plant operation, HTF would degrade into components of high and low boilers (substances with high and low boiling points). The low boilers are removed from the process through the ullage system.
- **Solar Steam Generator System –** The steam generated in the SSG is piped to a Rankine-cycle reheat steam turbine. Heat exchangers are included as part of the SSG system to preheat and boil the condensate, superheat the steam, and reheat the steam.
- **Steam Turbine Generator –** The STG receives steam from the SSG. The steam expands through the STG turbine blades to drive the steam turbine, which then drives the generator, converting mechanical energy to electrical energy.

The major components and features of the proposed Blythe Project include 4 separate solar fields and power blocks. Each solar field would have an auxiliary boiler for each unit would be fueled by natural gas. The gas for the entire project would be supplied from a new 10-mile (two miles offsite) up to 10-inch diameter pipeline connected to an existing Southern California Gas main pipeline south of I-10. The BSPP will also include removal of an existing abandoned gas pipeline within the BSPP ROW.

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

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

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

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

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

Linear facilities his includes the site access road, telecommunication line, natural gas pipeline, and transmission line. The site access road and telecommunication line for Unit #1 would be constructed during the first nine months of the construction schedule in conjunction with plant site preparation activities. The natural gas pipeline, electric transmission lines, and telecommunications lines would be constructed during the first 18 months of the construction schedule.

The BSPP facility would be connected to the SCE transmission system at the new Colorado River substation planned by SCE approximately five miles southwest of the Blythe Project site. The proposed generator-tie line would consist of a double circuit 230-kV line. The gen-tie line is expected to proceed generally south from the project site, eventually both crossing I-10 and turning westward to SCE's planned Colorado River substation.

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

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

B.4.2 Genesis Solar Energy Project

The following description of the GSEP is taken from the Energy Commission's Decision, posted on October 12, 2010 (CEC, 2010f). The full decision and the environmental analysis supporting that decision are available on the Energy Commission's project website at:

http://www.energy.ca.gov/sitingcases/genesis_solar/documents/index.html

On August 31, 2009, Genesis Solar LLC, a wholly owned subsidiary of NextEra Energy Resources LLC, submitted an Application for Certification (AFC) to the California Energy Commission to construct and operate an electrical generating plant in Riverside County, California. The proposed GSEP would be a solar electric generating facility using solar parabolic trough technology with a generating capacity of 250 MW.

The project is located approximately 25 miles west of the city of Blythe, California on lands managed by the BLM in the Sonoran Desert. The site would occupy approximately 1,800 acres just north of the Ford Dry Lake and about four miles north of I-10. Located in east central Riverside County, where land use is characterized predominantly by open space and conservation and wilderness areas, the western portion of the county accounts for most of the developed area of the county, including urban areas and agricultural areas. The southeastern corner of the county to the east of the GSEP also contains limited agricultural areas and rural development.

The GSEP will utilize solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is heated to high temperature (750°F) as it circulates through the receiver tubes. The heated HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced. The GSEP will use dry cooling technology (air cooled condenser) to conserve water.

Project Facilities. The GSEP will consist of two, single-unit parabolic trough solar fields (125 MW each) that feed two power blocks having a combined, nominal output of 250 MW. The plant will consist of a conventional steam Rankine-cycle power block, two parabolic trough solar fields, and heat transfer fluid (HTF) and steam generation system, as well as a variety of ancillary facilities, such as conventional water treatment, electrical switchgear, administration, warehouse, and maintenance facilities.

Overall project facilities include the following major components: solar field(s); power blocks; access road from I-10 (Wiley Well exit) to onsite office; office and parking; Land Treatment Unit for bioremediation of HTF-contaminated soil; maintenance buildings and laydown area; and, onsite transmission facilities including switchyard.

Each 125 MW power plant (one for the eastern solar field, and one for the western solar field) consists of: Steam Turbine Generator; Solar Steam Generator heat exchangers; feedwater pumps; deaerator; feedwater heaters; air-cooled condenser; evaporation ponds; natural gas–fired boilers; emergency diesel generator, emergency diesel fire pump, Wet Surface Air Cooler, and, solar thermal collection field.

The GSEP will require two separate units consisting of solar collector assemblies (SCAs) arranged in rows, or piping loops, with four assemblies in each loop. Each SCA will consist of individually mounted mirror modules. The overall site layout is a 250-MW facility, including solar generation facilities, on-site switchyards, administration, operations and maintenance facilities: approximately 1,800 acres. It would also have two 5-acre evaporation ponds.

Project Location. The GSEP site is located approximately 25 miles west of the city of Blythe, California, on BLM-administered lands. The project area is south of the Palen/McCoy Wilderness Area and north of Ford Dry Lake and I-10. The Applicant has been granted a Right-of-Way (ROW) grant with the BLM for approximately 4,640 acres of lands. Construction and operation of the project would disturb a total of about 1,800 acres. As such, any difference between the total acreage listed in the Right-of-Way application (4,640) and the total acreage required for project construction and operation (approx. 1,800) are not be part of the BLM ROW grant.

The area designated within Riverside County's Palo Verde Valley Area Plan occurs to the east of the project and encompasses the developed and agricultural area in eastern Riverside County. The portion of the Palo Verde Valley Area Plan in the vicinity of the GSEP consists mainly of sparsely populated desert and mountain areas. The more populated and agricultural areas occur farther east of the GSEP in the vicinity of Blythe.

Water Usage. The average total annual water usage for each 125 MW power plant is estimated to be about 100 acre-feet per year, or 200 acre-feet per year for the GSEP. Project water for the GSEP will come from pumping groundwater from wells to be installed at the project site. A minimum of two groundwater supply wells will be located near each unit's power block area. These wells will pump groundwater from the Bouse Formation and/or underlying Fanglomerate within the Chuckwalla Valley Groundwater Basin.

Construction. Project construction is expected to occur over a total of 37 months. Construction will require an average of 646 employees over the entire construction period, with labor requirements peaking at approximately 1,085 workers in month 23 of construction. The construction workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and management personnel. Temporary construction parking areas will be provided within the power plant site adjacent to the laydown area. The plant laydown area will be utilized throughout the build out of the two solar units. Construction was planned to begin in the fourth quarter of 2010, with commercial operation commencing in the second quarter of 2013.

While electrical power is to be generated only during daylight hours, GSEP will be staffed 24 hours a day, seven days per week. A total estimated workforce of 40-50 full time employees will be needed once the GSEP is fully operational.

The Applicant expects project construction to take 37 months to complete, with an average workforce of 646 employees and a peak workforce of approximately 1,085 workers in Month 23 of construction. The construction workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. Construction of each 125 MW Unit is expected to take approximately 25 months with each unit being phased by 12 months.

The GSEP will have a moderate sized workforce during operation. Specifically, it is estimated that a permanent workforce of 40 to 50 full time equivalent personnel will be needed to staff the facility 24 hours per day/seven days per week. The facility will be staffed outside of generating hours for maintenance, start-up, and site security.

Transmission Interconnection. The generated electrical power from the GSEP switchyard will be transmitted through a new generation-tie (gen-tie) line originating at a GSEP on-site switchyard and terminating at Southern California Edison's (SCE) planned 230/500 kV Colorado River substation approximately 14 miles to the east. The initial segment of the gen-tie will be approximately 6.5 miles long, running from the GSEP to the Blythe Energy Plant Transmission Line (BEPTL) near I-10. The GSEP line will then share poles with the BEPTL, before connecting to the new substation.

The GSEP switchyard will contain three breakers and three line takeoff structures. It will have space for a future breaker and line takeoff structure. Air insulated structures will be utilized giving the switchyard a size of approximately 270 feet by 400 feet. The switchyard and interconnections will be built for 230 kV and will operate at that nominal voltage. Instrument transformers (current and capacitive voltage transformers) will be included for protection. Shield wires and lightning arrestors will be included to protect substation equipment and personnel against lightning strikes.

The generated electrical power from the project switchyard will be transmitted through a generation-tie (gen-tie) line that will be routed in a southeasterly Right-of-Way (ROW) eventually connecting to the expanded SCE 230/500 kV Colorado River substation via the Blythe Energy Project Transmission Line. Six additional transmission poles will be required to connect GSEP electricity from the BEPTL into the expanded Colorado River Substation.

Transmission reliability impacts and appropriate mitigation have been fully identified in the California Independent System Operator (CAISO) Phase II Interconnection or "cluster" study of 2,200 MW of generation.

B.5 Applicant Proposed Measures and Mitigation Measures

Applicant Proposed Measures (APMs) were identified by SCE in its Certificate of Public Convenience and Necessity (CPCN) Application to the CPUC for DPV2. Tables B-10 through B-18 in Section B.5 of the Final EIR/EIS for the DPV2 project list the APMs for the DPV2 project. SCE committed to implementing these measures in order to reduce the direct and indirect impacts that would result from that Project's activities. The APMs were approved under the Final EIR/EIS and are considered part of the Proposed Project. Therefore, the applicable DPV2 APMs would similarly be implemented for the CRS Expansion Project.

In addition, all mitigation measures previously addressed and approved of in the Final EIR/EIS are considered part of the Proposed Project and would be implemented as described in the Final EIR/EIS. For the purposes of assessing potential impacts of the CRS expansion, approved APMs and mitigation measures are referenced where appropriate in Section C, and new mitigation measures are introduced in instances where existing mitigation would not be sufficient to reduce impacts to a less than significant level.

Figure B-1. Substation Locations

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Figure B-2a. Substation Layout

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Figure B-2b. Substation Profile

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Figure B-3. Permanent and Temporary Disturbed Areas

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Figure B-4. Water Well Locations

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Figure B-5. Proposed Distribution and Telecommunications Lines

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