Attachment 6

Related Projects

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ATTACHMENT 6 - RELATED PROJECTS

2.1 Introduction to Related Projects

A project may produce a significant effect on the environment if any of a number of conditions are met. As defined under CEQA, a significant effect on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project. CEQA requires that, in evaluating a project's potential effects, both direct (primary) effects which are caused by the project and which occur at the same time and place and indirect (secondary) effects which are caused by the project and which are later in time or farther removed in distance but are still reasonably foreseeable be analyzed. An EIR shall also discuss cumulative impacts when the project's incremental effect is "cumulatively considerable." Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The State CEQA Guidelines provides two separate methodologies for the identification of other related projects that, in combination with the proposed projects, could result in significant cumulative environmental effects. As indicated therein, the agency is authorized to use either: (1) list of reasonably anticipated probable future project approach (i.e., list of past, present, and reasonably anticipated probable future projects producing related or cumulative impacts; or (2) summary of projections approach (i.e., summary of projections contained in an adopted general plan or related planning document or in a prior environmental document which has been adopted or certified describing or evaluating regional or areawide conditions contributing to the cumulative impact). Based on the nature of the proposed projects, the Lead Agency has elected to utilize the list of reasonably anticipated probable future projects approach.

The list of probable future projects shall be limited to those "producing related or cumulative impacts" (14 CCR 15130[b][1][A]). In recognition of the specific characteristics of the proposed projects, the list of other probably future projects includes not only identified public and private projects located in reasonably proximity to the projects' various component parts but also: (1) other Commission-licensed hydropower projects; (2) projects that may be directly or indirectly linked to the proposed projects based on eligibility under the State's RPS; (3) energy project ahead of LEAPS in the generation interconnection queue (Application Queue); (4) identified localized or system–wide upgrades that are or may be required to the existing electrical transmission system; (5) other electrical generation and/or transmission projects, facilities, and system-upgrades that might be developed by other entities within the projects' implementation schedule; and (6) other projects affecting or potentially affecting the proposed facility sites.

2.2 Probable Future Projects

2.2.1 Other FERC-Licensed Pumped Storage Hydropower Projects[1]

The Applicant has not identified any Commission-licensed pumped storage projects that could result in significant cumulative environmental effects (as defined above) with the Applicant's Project.

2.2.2 Renewable Energy Projects

The CEC notes that the "acceleration of renewable development under the RPS has highlighted the role of transmission in renewable energy resource development."[2]

With regards to the eligibility of hydropower facilities to quality for RPS, with the passage of Senate Bill 107[3] (SB107), generation from hydroelectric projects larger than 30 MW cannot be reported by the publicly owned utilities (POUs) as eligible renewable energy.[4]

As specified in the CEC's "Renewable Portfolio Standard Eligibility Guidebook, Seventh Edition": "Pumped storage hydro must: (1) meet the RPS eligibility requirements for conduit hydroelectric, small hydroelectric, or incremental hydroelectric facilities as more fully described in the Renewables Portfolio Standard Eligibility Guidebook, and (2) The electricity, or energy resource, used to pump the water qualifies as RPS-eligible. (The amount of energy that may qualify for the RPS is the amount of electricity dispatched from the pumped storage facility.)[5]

Existing or reasonably foreseeable renewable resources located within the southern California area include both wind (San Gorgonio and Tehacaphi) and geothermal (Imperial Valley). As reported by the CAISO,[6] projected renewable energy resources available to or potentially accessed by the LEAPS and TE/VS Interconnect projects are outlined in Table 1-2 (Development of New Renewable Resources in the Southern California Area).

2.2.3 Projects Ahead of LEAPS in the Large-Generator Interconnection Queue

An interconnection request, submitted in accordance with the Commission's standard large-generator interconnection procedures (LGIP) and in accordance with the Commission's tariff, constitutes an application to interconnect a new generating facility or to increase the capacity of or make a material modification to the operating characteristics of an existing generating facility that is interconnected with the transmission provider's transmission system. Application Queue position means the order of a valid interconnection request, relative to all other pending valid interconnection requests, that is established based upon the date and time of receipt of

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1/ The following discussion focuses only on pumped storage hydroelectric projects and is not offered as being inclusive of all proposed, pending, or approved hydroelectric facilities located throughout the State. Since there are no existing river systems within the southern California area conducive to the development of run-of-the-river facilities, there exists no reasonable probability that those projects could result in cumulative environmental effects.

2/ California Energy Commission, Accelerated Renewable Energy Development, Draft Staff White Paper, 100-04-003D, July 30, 2004, p. 61.

3/ Senate Bill 107 (Simitian and Perata), Chapter 464, Statutes of 2006.

4/ *Op. Cit*., 2006 Integrated Energy Policy Report Update, Committee Final Report, p. 12.

5/ California Energy Commission, Renewable Portfolio Standard Eligibility Guidebook, Seventh Edition, CEC-300-2013-005-CMF, April, 2013, p. B–9.

6/ Shirmohammadi, Dariush, CAISO South Regional Transmission Plan for 2006, Presentation at CEC Intermittency Analysis Project, Energy Commission Staff Workshop, August 15, 2006, p. 17.

the valid interconnection request by the transmission provider. Transmission providers shall assign a queue position based upon the date and time of receipt of the valid interconnection request. The Application Queue position of each interconnection request determines the order of performing the interconnection studies and the cost responsibility for the facilities necessary to accommodate the interconnection request. The higher the queue position, the earlier the request was placed in the queue relative to other later interconnection requests.

Table 1-2
DEVELOPMENT OF NEW RENEWABLE RESOURCES IN THE SOUTHERN CALIFORNIA AREA

Year	Resource Type	Tehachapi	Salton Sea
2010	Wind	4,500 MW	-
	Geothermal	-	445 MW
	Solar	-	300 MW
2015	Wind	4,500 MW	-
	Geothermal	-	1,600 MW
	Solar	-	900 MW
2017	Wind	6,000 MW	-
	Geothermal	-	2,000 MW
	Solar	-	900 MW

Source: California Independent System Operator

The CAISO has assigned Application Queue positions, reflecting the requirements of FERC Order 2003-C for LGIP, applicable to generating facilities that exceed 20 MW. As indicated on the CAISO's Application Queue (dated October 26, 2006), the LEAPS project was listed as Queue Position 72, indicating that there were 71 other projects that submitted valid interconnection requests prior to the CAISO's acceptance of the LEAPS request.

Based on the CAISO's Deliverability Phase IIB results, LEAPS project (Application Queue 72) passed the CAISO deliverability test. Under the CAISO's standard modeling assumptions, this means that the energy from the pumped storage project is deliverable to the load centers in southern California without limitation. The ramification of the 100 percent deliverability is that the LEAPS project's full generation capacity can be counted towards resource adequacy capacity requirements of the load-serving entities (LSEs).

2.3 Network Upgrades

Based on studies conducted by SCE and SDG&E, a number of network upgrades have been identified which are predicted, either in whole or in part, by the additional power flows attributable to the proposed projects. Because the need for those improvements may or may not predicted solely by the proposed projects and because their implementation could occur prior to and independent of the proposed projects, each of those network upgrades are or may be part of the proposed projects or may constitute related activities which will be undertaken either by the Applicant or by one or more investor-owned utilities.

2.3.1 Southern California Edison - Interconnection Facilities Study and Large-Generator Interconnection Agreement[7]

SCE's "Interconnection Facilities Study," dated November 30, 2006, concluded that the present SCE transmission system is not adequate to support the proposed power flows associated with the LEAPS project. Base-case overloads were identified on several SCE transmission lines. The new generation would trigger one single-contingency overload (Etiwanda-Vista 220 kV T/L) and aggregate six pre-existing single-contingency and double-contingencies caused by early interconnections placed ahead of the LEAPS project in the present Application Queue.[8] The analysis further identified four 500 kV, 21 220 kV, and 21 115 kV locations where the LEAPS project caused an increase on the three-phase short-circuit duties of 0.1 kA or more and indicated that all circuit breakers at those locations be evaluated. Each of the anticipated overloads, whether predicated by the proposed projects or as a result of those additional facilities placed higher in the Application Queue, and improvements associated with SCE's proposed solutions to those overloads are identified below.[9]

- Etiwanda-San Bernardino 220 kV transmission line. Eliminate the existing line-to-ground clearance restrictions to restore the line conductor rating to N=2480, N-1=2850, and N-2=3350A and replace two 1200A disconnect switches at Etiwanda with 3000A rated to support 60 percent of highest contingency load of 3093A or 1855A.
- San Bernardino-Vista 220 kV transmission line. Upgrade the line by replacing 2-1033KCMIL ACSR conductors with new 2-1590KCMIL ACSR rated N=3230, N-1=3710, and N-2=4360A and replace four 2000A disconnect switches at each San Bernardino and Vista (total of 8) with 3000A rated to support 60 percent of highest contingency load of 3745A or 2250A.
- Etiwanda-Vista 220 kV transmission line. Replace 2000A wave trap at Etiwanda with 3000A rated and N-2 rating of 3210A to support the highest contingency load of 3071A.
- Lugo-Vincent No. 1 500 kV transmission line. Line is adequate (no upgrades required).
- Lugo-Vincent No. 2 500 kV transmission line. Line is adequate (no upgrades required).
- Mira Loma-Vista 220 kV transmission line. Line is adequate (no upgrades required).

As further indicated in the Draft SCE-LGIA, interconnection customer's interconnection facilities shall consist of one interconnection position in the interconnection customer's 500 kV

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[7]/ To the extent that these upgrades become part of the proposed projects or become the projects' obligations rather than network upgrades conducted by SCE and deemed not to be reimbursable by the Applicant, these upgrades are part of the projects description and not related projects herein. Since these improvements may be undertaken directly by SCE or by others (based on flows produced by earlier projects on the Application Queue) or may constitute responsibilities of the Applicant based on the power flows associated with the proposed projects, these transmission system upgrades have been included in this EIR both as components of the projects description and again as related projects herein.

[8]/ The analysis determined that the LEAPS project would trigger contingency overloads on the Camp Pendleton 230 kV phase shifter transformer. This transformer is not an SCE facility and was not included in SCE-IFS.

[9]/ The following improvements do not differentiate between those that are required to accommodate the combined LEAPS and TE/VS Interconnect projects versus those that would be required to accommodate only the LEAPS project or only the TE/VS Interconnect project.

switchrack, using double bus-double breaker configuration, two 500 kV circuit breakers, associated meters, metering equipment, protective relays disconnects, associated 500 kV generation tie-line (Lake-LEAPS 500 kV generation tie-line), and appurtenant facilities.

PTO's interconnection facilities at the Northern (Lake) switchyard shall include the following: (1) install one dead-end structure (108-feet high by 90-feet wide); (2) install three 500 kV CCVT potential devices; (3) install three 500 kV surge arresters; (4) install three 500 kV 4000A wave traps and line tuners; (5) install three line tie-downs with 2-2156KCMIL ACSR conductors; (6) install dual communication channels on separate routes to support the line protection relays on the new Lake-LEAPS 500 kV T/L; one of the communication channels will be provided by installing OPGW on the new 500 kV transmission line; (7) install new light-wave and channel equipment to support Lake-LEAPS 500 kV T/L protection, SCADA and applicable SCE voice and data requirements; (8) construct approximately six miles of new ADSS fiber optic cable to extend existing SCE fiber optic cable from either the Elsinore or Skylark substations to the LEAPS generating facility; the combined (existing + new) fiber optic cable provides the required alternate route between Lake substation and the LEAPS generating facility; (9) install the following relay protection devices for the Lake-LEAPS gen-tie line protection (a) two GE C60 breaker management relays, (b) one SEL-311L line current differential (digital F.O. channel), (c) one GE L90 line current differential (digital F. O. channel), (d) install one GE D60 directional comparison pilot relaying (digital F.O./MW channel), (e) install one RFL 9745 tele-protection channel DTT (digital F.O. channel), (f) install one RFL 9745 tele-protection channel DTT (M/W channel), (g) install one 32/64 digital fault recorder, (h) install one Ethernet service drop, and (h) install one SEL-2030; (10) install one RTU at Lake substation to monitor the typical bulk power elements such as MW, MVAR, and phase amps at each line and also kV at lines and busses and all circuit breaker status/control, protection relays status and alarms; (11) the RTU will transmit information to the SCE Grid Control Center via the existing Mira Loma Regional Control Center System.

PTO interconnection facilities at the LEAPS generating facility shall consist of the installation of new light wave and channel equipment to support Lake-LEAPS 500 kV generation tie-line protection, SCADA, and applicable SCE voice and data requirements.

PTO's reliability network upgrades at the Northern (Lake) switchyard shall include the following: (1) engineer and construct a new 500 kV interconnection facility to loop the Serrano-Valley 500 kV T/L and provide one 500 kV line position to terminate the Lake-LEAPS 500 kV generation tie-line; (2) install two 500 kV operating buses covering three positions; (3) install three bus dead-end structures (60-feet high by 90-feet wide); (4) install twelve bus dead-end insulator assemblies; (5) install three 500 kV potential devices; (6) install two 270-foot sections of 2-2156 KCMIL ACSR bus conductors (approximately 3,250 feet of conductor); (7) Position 1 (a) install one dead-end structure (108-feet high by 90-feet wide), (b) install three 500 kV - 3000A – 40 kA circuit breakers, (c) install six 500 kV horizontal mounted group operated disconnect switches; two of them equipped with grounding attachments, (d) install six 500 kV bus supports, (e) install three 500 kV CCVT potential devices, (f) install three 500 kV surge arresters, (g) install three 500 kV, 4000A wave traps and line tuners, (h) install three line tie-downs with 2-2156 KCMIL ACSR conductors, (g) install three 660-foot sections 2-2156 KCMIL ACSR bus conductors (approximately 4.000 feet of conductor); (8) Position 2 install one line dead-end structure (108-feet high by 90-feet wide) to terminate the conductors from the Serrano 500 kV T/L at position 2N and cross them over to the structure at position 1S; (9) Position 3 (a) install one dead-end structure (108-feet high by 90-feet wide), (b) install two 500 kV - 3000A – 40 kA circuit breakers, (c) install four 500 kV horizontal mounted group operated disconnect switches; one of them equipped with grounding attachments, (d) install fifteen 500 kV bus supports, (e) install three 500 kV CCVT potential devices, (f) install three 500 kV surge arresters, (g) install three 500 kV, 4000A wave traps and line tuners, (h) install three line tie-downs with 2-2156KCMIL ACSR conductors, (i) install three 660-foot sections 2-2156 KCMIL ACSR bus conductors (approximately 4,000 feet of conductor); (10) Mechanical-Electrical Equipment Room (MEER) install a new 30-foot by 20-foot MEER building to house the following equipment (a) batteries and battery charger, (b) light and power selector switch, (c) light and power panel, (d) A.C. distribution panel, and (e) D.C. distribution panel; (11) Protection Relays (500 kV T/L) install the following relays at each of the two remaining line positions (a) two G.E. C60 breaker management relays, (b) one SEL-311L line current differential (digital F.O. channel), (c) one G.E. L90 line current differential (digital F.O. channel), (d) one G.E. D 60 directional comparison pilot relaying (digital F.O./MW channel), (e) one RFL 9745 tele-protection channel DTT (digital F.O. channel), and (f) one RFL 9745 tele-protection channel DTT (M/W channel); (12) Others (a) install one 32/64 digital fault recorder, (b) install one Ethernet service drop, (c) install one SEL-2030 connected to all three SEL-311L relays; and (13) Other station elements to be Installed (a) install Telecommunications tower and MW dish antenna, (b) install 2,320 linear feet of 8-foot perimeter fence with double barbed wire to cover a 760-foot by 400-foot area, (c) install one 20-foot double door driveway gates, (d) install grounding grid to cover a 766-foot by 406-foot area (3 feet outside the perimeter fence), (e) perform grading and site preparation of a 780-foot by 420-foot area (10 feet outside the perimeter fence), (f) install approximately 2,000 linear feet of 25-foot paved driveway, and (g) install approximately 1,500 linear feet of control cable trench.

PTO's reliability network upgrades at the Serrano substation shall include the following: (1) upgrade the Valley 500 kV line protection as needed to change the line to a new Lake 500 kV T/L; (2) replace the existing LFCB relay with a new SEL-311L line current differential relay and the modification of the existing D60 and L90 relays to change the existing transfer trip schemes from Valley substation to Lake substation, and (3) reconfigure the existing digital channel from Valley substation to Lake substation and the modification of the existing SEL 2030 telecommunications processor with Ethernet to provide connection to the new SEL relay.

PTO's reliability network upgrades at the Valley substation shall include the following: (1) upgrade the Serrano 500 kV line protection as needed to change the line to the new Lake 500 kV T/L; (2) replace the existing LFCB relay with a new SEL-311L line current differential relay and the modification of the existing D60 and L90 relays to change the existing transfer trip schemes from Serrano substation to Lake substation; (3) reconfigure the existing digital channel from Serrano substation to Lake substation and the modification of the existing SEL 2030 telecommunications processor with Ethernet to provide connection to the new SEL relay; and (4) replace six 31.5 kA 115 kV circuit breakers with new 40 kA rated circuit breakes and upgrade six 31.5 kA circuit breakers to 40 kA.

PTO's reliability network upgrades at the Etiwanda generating station shall include the following: (1) replace the 2000A wave trap on the Vista 220 kV line position with 3000A rated wave trap, with N-2 contingency rating of 3210A to support the maximum N-2 line loading of 3071A; (2) replace twenty four 63 kA 220 kV circuit breakers with new 80 kA rated circuit breakers and upgrade the Etiwanda 220 kV switchyard to 80 kA rating; (3) the scope of work for the switchyard upgrade has not been completed at this time; it is, however, expected that, in addition to the work shown above, the following additional upgrades would be required (a) replace 28 220 kV disconnect switches, (b) replace 24 220 kV surge arresters, (c) replace all line and bank vertical risers with tubular conductors, (d) replace all 4/0 CU connectors to the ground grid with new 350 kCMIL ACSR, and (e) install new sections of 350 kCMIL ACSR ground grid and connect to the existing 4/0 CU grid.

PTP telecommunication network upgrades shall include the following: (1) install dual communication channels on separate routes to support the line protection relays on the new Lake-Serrano and Lake-Valley 500 kV T/L; (2) install a new microwave path from Lake substation to the existing Santiago Peak communication site (a) Lake substation install new light wave, microwave (including dish antennas), channel equipment for 500 kV line protection communications tower, fiber optic cable, and DC system, plus new voice and data network infrastructure (operations phones, modem lines, LAN connections to relays, etc.), (b) Serrano substation install new light wave and channel equipment for 500 kV line protection , plus incremental addition of voice and data network infrastructure (rack phones, modem lines, LAN connections to relays, etc.), (c) Valley substation install new light wave and channel equipment for 500 kV line protection, plus incremental addition of voice and data network infrastructure (rack phones, modem lines, LAN connections to relays, etc.), (d) Santiago Peak communications site install new microwave and dish antennas to link Lake substation to Serrano and Valley substations for 500 kV line protection, (e) Mira Loma substation install new light wave equipment to link Lake substation to Serrano substation for 500 kV line protection (i) install dual communication channels on separate routes to support the line protection relays on the new Lake-LEAPS 500 kV generation tie-line (A) install OPGW on the new Lake-LEAPS 500 kV generation tie-line to provide additional communications channel, and (B) Outside plant construction [1] construct approximately six miles of new ADSS fiber optic cable to extend existing SCE fiber optic cable from either the Elsinore or Skylark substations to the LEAPS generating facility; the combined (existing + new) fiber optic cable provides the required alternate route between Lake substation and the LEAPS generating facility, and [2] the communications channels described above will also be used to provide the power management circuits required for the Remote Terminal Units (RTU) to be installed at Lake switchyard and the LEAPS generating facility.

Power system control network upgrades shall include the following: install one RTU at Lake substation to monitor the typical bulk power elements such as MW, MVAR, and phase amps at each line and also kV at lines and busses and all circuit breaker status/control, protection relays status and alarms. The RTU will transmit information to the SCE Grid Control Center via the existing Mira Loma Regional Control Center System.

2.3.2 San Diego Gas and Electric - Interconnection Facilities Study and Large-Generator Interconnection Agreement[10]

SDG&E's "Interconnection Facilities Study," dated December 15, 2006, concluded that the present SDG&E transmission system is not adequate to support the proposed power flows. Each of the anticipated overloads, whether predicated by the proposed projects or as a result of those additional facilities placed higher in the Application Queue, and improvements associated with SDG&E's proposed solutions to those overloads are identified below.[11]

- Gen-tie connection from LEAPS 230 kV transformers into SDG&E's 230 kV swithchyard.
- Installation of a new 230 kV Pendleton swithchyard, including the construction of 4-bays of 230 kV breakers and half-bus design for interconnection with the proposed projects. The switch rack will include 4-line terminals with breakers, 4-tie positions with breakers, 2-bank terminals with breakers, and 2-bank terminals without breakers. The projects also include the installation of a dedicated 230 kV control house with all the required protection, metering, telemetering, Supervisory Control & Data Acquisition System (SCADA) and communication equipment and systems.
- Loop-in of the existing Talega-Escondido 230 kV line.
- Bundle the proposed Pendleton-Talega 230 kV No. 1 line to provide 912 MVA capacity.
- Addition of a second proposed Pendleton-Talega 230 kV line, including the addition of the 230 kV bay positions at the Talega and Escondido substations. The proposed Pendleton-Talega 230 kV portion of this line is to have a capacity of 912 MVA. The proposed Pendleton-Escondido 230 kV No. 2 line is to have a capacity of 456 MVA.
- Upgrade the following breakers from 40 kA to 50 kA: Escondido 50, 684, 688, 6908, 696, and 72 and Penasquitos 665, 666, 667, and 70.

As further indicated in the Draft SDG&E-LGIA, the proposed Southern (Pendleton or Case Springs) 230 kV air-insulated switchyard (AIS) shall include: (1) connection of the LEAPS project's 230 kV phase shifting transformers to SDG&E's 230 kV switch rack; (2) a land right in recordable form that grants perpetual and assignable rights for the switchyard of a size and configuration and otherwise meeting SDG&E's specifications and requirements; (3) the switchyard shall be graded to SDG&E's specifications; (4) a wall or fence that encloses switchyard land and provides for adequate access and working room; (5) 4-bays of 230 kV breaker and half bus design for interconnection with the LEAPS project (the switch rack will include 4-line terminals with breakers, 4-tie positions with breakers, 2-bank terminals with

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[10]/ To the extent that these upgrades become part of the proposed projects or become the projects' obligations rather than network upgrades conducted by SDG&E and deemed not to be reimbursable by the Applicant, these upgrades are part of the projects description and not related projects herein. Since these improvements may be undertaken directly by SDG&E or by others (based on flows produced by earlier projects on the Application Queue) or may constitute responsibilities of the Applicant based on the power flows associated with the proposed projects, these transmission system upgrades have been included in this EIR both as components of the projects description and again as related projects herein.

[11]/ The following improvements do not differentiate between those that are required to accommodate the combined LEAPS and TE/VS Interconnect projects versus those that would be required to accommodate only the LEAPS project or only the TE;VS Interconnect project.

breakers and 2-bank terminals without breakers); (6) all structures and foundations, busses and equipment within switchyard fence; (7) switchyard grounding-grid; (8) a dedicated control house, substation below grade conduits and cables, protection systems, supervisory control and telecommunications equipment, batteries and low-voltage circuits (all the required protection, metering, telemetering, SCADA and communication equipment and systems); and (9) a portion of the conductors and dead-end insulators from SDG&E's switchyard to the projects' transformer dead-end.

The connection from the LEAPS project 230 kV phase shifter transformers into the substation will include: (1) 2- transformer dead end structures; (2) 2-sets of tie down assemblies; (3) 2-230 kV circuit breakers; (4) 2-shared 230 kV breakers; (5) 6-230 kV disconnect switches; (6) transformer dead-end strain insulators; (7) transformer lead conductors; (8) lot-bus support structures; (9) equipment and bus jumpers; (10) ground grid interconnection; and (11) control junction box. The 230 kV switchyard facilities will include: (1) eight element air-insulated breaker and half bus design to include 4-line positions, 4-tie positions and 4-bank positions; (2) required bus, line and transformer dead-end structures; (3) lot-bus support structures: (4) 10-230 kV circuit breakers; (5) 22-disconnect switches; (6) 2-potential transformers; (7) 2-station service transformers; (8) 2-metering units; (9) required line synchronizing potential transformers; (10) ground grid; (11) yard wire race ways; (12) yard junction boxes; (13) lighting; and (14) a block control shelter to house the DC-control power, protection relays, communication equipment, supervisory and data acquisition equipment and metering panels.

The SDG&E-LGIA identified the following additional PTO's reliability network upgrades:

- Loop-in of the existing Talega-Escondido 230 kV line. SDG&E's future Southern (Pendleton or Case Springs) substation will be located near the existing Tower No. 163 (Z322651). The scope of work for the loop-in consists of Tower No. 163 removal, installation of two 230 kV anchor bolted dead-end steel poles and hardware and conductor. Replacement of 69 kV over-stressed breakers at the Escondido and Penasquitos substations. The short-circuit analysis also shows there are ten (10) overstressed breakers that need to be upgraded from 40 kA to 50 kA. Short-circuit constraints require the upgrading of the following breakers at the Penasquitos substation: PQ 665, 666, 667, and 70. Short-circuit constraints require the upgrading of the following breakers at the Escondido substation: ES 50, 684, 688, 6908, and 696.

- Interconnection customer's delivery network upgrades. The thermal analysis performed in the IFS indicates there are two SDG&E transmission line overloads caused solely by addition of the LEAPS project that require mitigation: (1) Talega-Southern (Talega-Pendleton or Talega-Case Springs); and (2) Southern-Escondido (Pendleton-Escondido or Case Springs-Escondido) 230 kV lines.

  The following delivery network upgrades are needed to mitigate these overloads: (1) bundle the existing line of the Talega-Southern (Talega-Pendleton or Talega-Case Springs) 230 kV #1 line to provide 912 MVA capacity; and (2) addition of a second Talega-Southern-Escondido (Talega-Pendleton-Escondido or Talega-Case Springs-Escondido) 230 kV line, including the addition of the 230 kV bay positions at the Talega and Escondido 230 kV substations (the Talega-Southern [Talega-Pendleton or Talega-Case Springs] 230 kV portion of this line is to have a capacity of 912 MVA and the Southern-Escondido [Pendleton-Escondido or Case Springs-Escondido) 230 kV #2 line's capacity will be 456 MVA. Looping the second Escondido-Talega tie-line into the Southern (Pendleton or Case Springs) 230 kV switch rack will require the following additional upgrades at Escondido and Talega substations to accommodate the new terminal additions.

◊ Escondido substation upgrades: (1) relocation and replace bank 71; (2) modify the north and south buses to make room for a new bay addition; (3) install a new 230kV breaker and half bay to include 1-bank, 1-tie, and 1-line positions; (3) lot-support structures as required; (4) 1-230/69kV transformer; (5) 2-230 kV circuit breakers; (6) 5-230 kV disconnect switches; (7) power and control wiring; (8) tie-line protection; (9) metering; (10) SCADA and communication interface; and (11) re-route the existing 12 kV ducts to make room for bank 71.

◊ Talega substation upgrades: (1) install a new 230 kV, breaker and half bay to include 1-line and 1-tie positions; (2) lot-support structures as required; (3) 2-230 kV breakers; (4) 4-230 kV disconnect switches; (5) power and control wiring; (6) tie-line protection; and (7) SCADA and communication interface.

2.4 Development Projects in Reasonably Proximity

A number private-sector developments are proposed on privately owned lands within and surrounding the Project area. The following projects have been or are the subject to separate CEQA documentation prepared by the City of Lake Elsinore or County of Riverside.

- Alberhill Ranch Specific Plan. The 1,853-acre specific plan, bordered by Lake Street on the west and the I-15 (Corona) Freeway on the north, allows for the construction of nearly 4,000 dwelling units and other non-residential uses southeast of the proposed Northern (Lake) substation.
- Alberhill Ranch Country Club Specific Plan. A specific plan has been prepared and is being processed by the County for the 1,432-acre Pacific Clay property. If permitted, the project, located southeast of the proposed Northern (Lake) substation, would result in the introduction of approximately 1,200 dwelling units south of the I-15 (Corona) Freeway and east of Horsethief Canyon.
- East Lake Specific Plan. The Back Basin, intended for flood control and storage below elevation 1263.5-feet AMSL, is under the land-use jurisdiction of the City of Lake Elsinore. The Back Basin is shown on the City’s land-use and zoning maps as the 3,000 acre “Liberty Founders East Lake Specific Plan” (ELSP), as adopted by the City in 1993 and amended in 1999. As approved, the ELSP would allow for the construction of over 5,000 dwelling units and an array of non-residential uses. Recent approved ELSP Amendment No. 6 (John Laing Homes) and ELSP Amendment No. 8 (LUMOS Communities) will result in the imminent development of new residential and non-residential uses wiithin the Back Basin area.
- La Laguna Estates Specific Plan. The 489 acre specific plan area is located west of the intersection of Grand Avenue and Lincoln Street. The project includes 164 acres of single-family use and 24 acres of multi-family use south of the proposed Northern 500 kV transmission line.

- Sycamore Creek Specific Plan. A segment of the proposed Northern 500 kV transmission line traverses or abuts the “Sycamore Creek Specific Plan” (SP No. 256/EIR No. 325), as amended. That 717 acre planning area is located to the west of the I-15 Freeway, south of Temescal Canyon Road, and north and south of Indian Truck Trail (Sycamore Creek Road). Anticipated development includes 1,764 dwelling units, 165.7-acres of open space, and 14.6 acres of commercial use. Construction within the specific plan area is ongoing.
- Tract Map Nos. 22626. With regards to the proposed Ortega Oaks powerhouse site, on April 20, 2004, the County Board of Supervisors approved final Tract Map Nos. 22626 and 22626-1 (Board of Supervisors Agenda Item Nos. 2.15 and 2.16), subdividing the proposed powerhouse site into approximately 100 single-family residential lots. As a result, prior to the Applicant’s receipt of all requisite permits and approvals, the Ortega Oaks property could transition from a vacant property to a tract of new single-family detached homes. Construction within this tract map area has not yet commenced.

2.5 Additional Considerations

2.5.1 Southern California Edison Company

The Project’s ability to provide reliability benefits in light of the shuttering of the San Onofre Nuclear facility is described in Attachment 8 to this PEA.

Futher, SCE has indicated that it is pursuing the development of distribution upgrades in the project area. The upgrade is associated with development of the company’s Alberhill Substation[12]. Objectives of this project include (1) providing added capacity to serve load growth, (2) transfer approximately 300 MW from the Valley substation by 2012, and (3) serve the Lake Elsinore area and western Riverside County. The scope includes constructing a new 500/115 kV substation southwest of the existing Valley substation and looping in the existing Valley – Serrano 500 kV transmission line.

More recently, in a July 15, 2013 PowerPoint[13] prepared in connection with a public meeting on SONGS, the CAISO indicated that SCE’s Alberhill proposal may be part of one or more much larger projects, as is seen in the following side from that PowerPoint[14]:

[12]/ See CPUC Docket A.09–09–022 submitted September 30, 2009.

[13]/ CEC/CPUC Joint Workshop Electricity Infrastructure Issues Resulting from SONGS Closure, ISO 2013 Transmission Plan Nuclear Generation Backup Plan Studies (SONGS), Phil Pettingill, Director, Regulatory Strategy, July 15, 2013.

[14]/ Id. Slide #12.

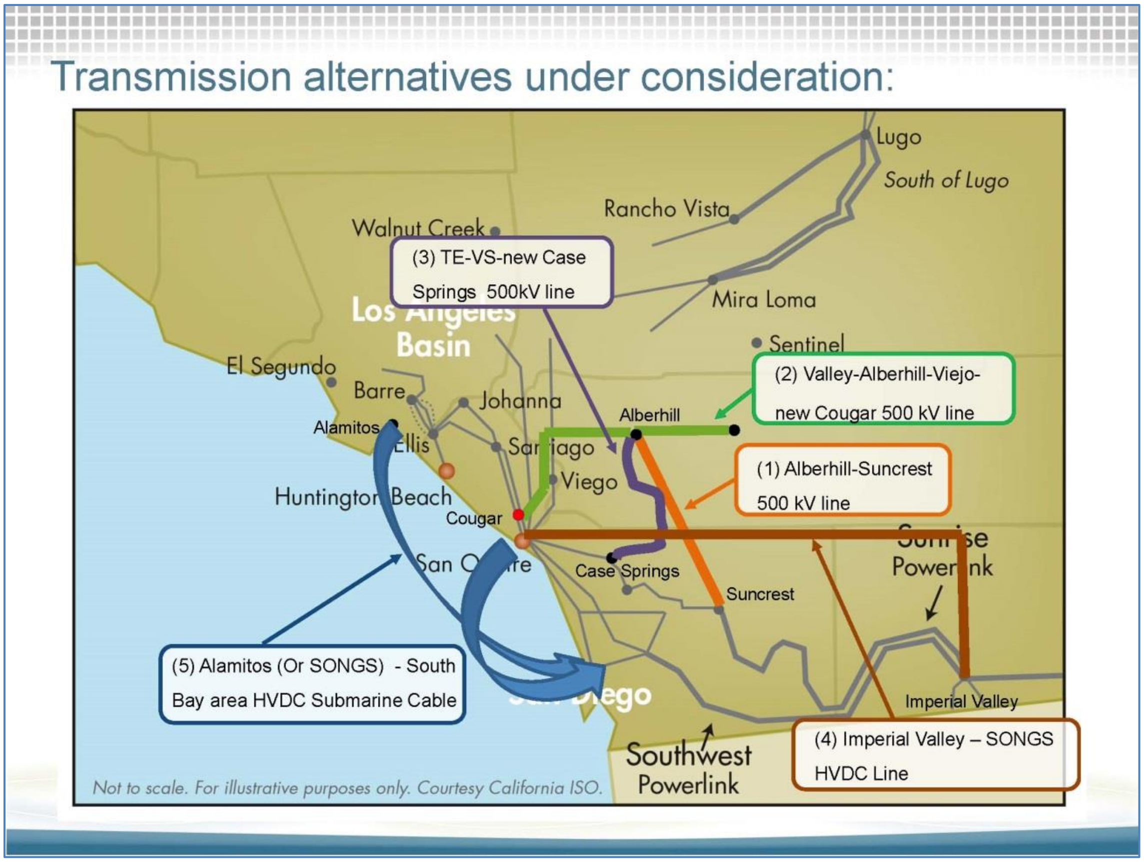

Figure 1 – Slide Showing Extent of SCE's Proposed Alberhill Project
Source: CAISO