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SOUTHERN CALIFORNIA EDISON®

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2009 Integrated Energy Policy Report (IEPR)

Transmission-Related Data Response Update

Docket No. 09-IEP-1D

June 26th, 2009

INTRODUCTION

On January 14, 2009, as part of its "Forms And Instructions For Submitting Electric Transmission-Related Data," the California Energy Commission (CEC) requested that all transmission-owning load serving entities (LSEs) file specific transmission-related data. Accordingly, Southern California Edison (SCE) submits its responses to the CEC's questions pertaining to the following topics in this report:

A. SCE Responses to Questions in General Instructions:
   - A.1 TransWest Express Project
   - A.2 Lake Elsinore Advanced Pumped Storage (LEAPS) Project
   - A.3 Northern Lights
   - A.4 Devers-Palo Verde No. 2 500 kV Transmission Line Project - (updated)
   - A.5 Tehachapi Renewable Transmission Project
   - A.6 Eldorado-Ivanpah Transmission Project

B. SCE Responses to Questions in Specific Instructions:
   - B.1 Transfer Capabilities into SCE's Power Grid
   - B.2 Transfer Capabilities within SCE's Power Grid
   - B.3 Transmission Needed to Meet SCE's Renewable Energy Requirements and Proposed Once-through Cooling Policies
   - B.4 Corridor Needs Related to SCE's Point-to-Point Electric Transfers - (updated)
   - B.5 Garamendi Principles

A. General Instructions

Each electric transmission system owner shall submit a description of its bulk electric system and its latest transmission expansion plan. In addition, for those major projects recommended in the 2005 Strategic Plan and the 2007 Strategic Plan, please provide a status update (including a timeline with major milestones and a discussion of major issues affecting that timeline). The electric system description and plan should describe in detail all of the transmission facilities over 100 kV that the transmission owner needs to: meet applicable reliability and planning standards, reduce congestion, interconnect new generation, and meet state policy goals such as the Renewable Portfolio Standard or aging power plant retirement/once-through cooling goals.

All electric transmission system owners are required to file specific data on their bulk transmission network and on specific projects identified in their transmission plans. These data include descriptions of the transmission facilities or paths limiting power imports into their bulk transmission network, descriptions of the transmission facilities or paths limiting the transfer of power within their bulk transmission network, transmission limits that constrain the electric transmission system owners' ability to meet legislated renewable resource procurement requirements, and anticipated corridor needs for bulk transmission facilities that are 200 kilovolt (kV) or above in capacity or are under the control of the California Independent System Operator.

Where the information is available through another forum, electric transmission system owners are asked to identify a contact person (name, phone number, and e-mail address) and a Web link, where appropriate.

SCE Response:

SCE's transmission expansion plan information is included in the 2008 California Independent System Operator (CAISO) Transmission Plan which can be found at the following link:

http://www.caiso.com/1f52/1f52d6d93a3e0.pdf

SCE has interests in several merchant transmission projects. Their descriptions follow:

A.1 TransWest Express Project:

Although SCE is not commercially involved, we will be part of the WECC rating process to ensure that the TransWest Express Project has no impact on the SCE system.

More information can be found in the following web link about TransWest Express Project:

https://transwest.azpsoasis.com/

A.2 Lake Elsinore Advanced Pumped Storage (LEAPS) Project

The California Independent System Operator (CAISO) is the entity administering the LEAPS project interconnection to the CAISO Controlled Grid. Nevada Hydro submitted a generator interconnection request to the CAISO for the LEAPS project pursuant to the CAISO Tariff and the Large Generator Interconnection Procedure mandated by FERC. SCE is one of two Participating Transmission Owners (PTOs) that will interconnect the project. San Diego Gas & Electric Company (SDG&E) is the other PTO. SCE has worked with the CAISO and SDG&E on the generation interconnection request for the LEAPS project.

The generating aspect of the LEAPS project consists of a pumped storage hydro plant with a generating capacity of 500 MW and a pump load of 600 MW. The project also consists of two 500 kV lines connecting the generator to: (i) a new substation with SCE's Valley-Serrano 500kV line and (ii) a new substation with SDG&E's Talega-Escondido 230 kV line using phase shifting transformers. SCE has completed a System Impact and Facilities Study associated with the gen-tie connecting the generator to SCE's Valley-Serrano 500 kV line. The LEAPS project sponsors and SCE are currently in the interconnection agreement negotiations phase. Additional information about the LEAPS project should be requested from the CAISO.

More information about LEAPS project can be found at the following web link:

http://www.leapsforward.org/

A.3 Northern Lights:

Although SCE is not commercially involved in the Northern Lights project, we will be part of the WECC rating process to ensure that the project has no adverse impacts on the SCE system.

More information about the Northern Lights Project can be found at the following web link:

http://www.transcanada.com/company/northernlights.html

A.4 Devers-Palo Verde No. 2 500 kV Transmission Line Project

This project was originally proposed as an economic transmission project to access cheaper energy from the Southwest. SCE's proposed Devers-Palo Verde No. 2 500 kV transmission line project extending from the proposed Delany (aka. Harquahala Junction) Switchyard near Phoenix, Arizona to SCE's existing Devers 500 kV Substation in Palm Springs, CA ("DPV2") is designed to reduce

congestion between Arizona and California, provide access to off-peak power from the Southwest, provide access to renewables along the Devers-Palo Verde transmission corridor, and provide benefits to Arizona, including expediting the development of Arizona's solar industry. The expected on-line date is 2013.

On January 25, 2007, the CPUC approved DPV2, granting SCE a Certificate of Public Convenience and Necessity (CPCN) via CPUC Decision (D.) 07-01-040. On February 28, 2007, the Arizona Siting Committee approved the issuance of a Certificate of Environmental Compatibility (CEC) for DPV2. On June 6, 2007, the Arizona Corporation Commission ("ACC") issued a decision that denied SCE's request for a permit to site the DPV2 facilities in Arizona. As a result of the ACC's denial of DPV2 in Arizona in June 2007, and because of the vast amount of increasing renewable generation potential in the Blythe, California area, SCE filed a Petition For Modification of D.07-01-040 in May 2008, requesting CPUC authority to commence construction on the CA portion of DPV2 in advance permitting the AZ portion. SCE anticipates a CPUC decision during the second quarter of 2009.

SCE is strongly committed to a successful project in Arizona. SCE intends to pursue its ongoing work with Arizona stakeholders toward reconfiguring DPV2 transmission facilities in Arizona in order to reach consensus on an acceptable project.

On November 7, 2008, the Arizona Corporation Commission ("ACC") held a Special Open Meeting and opened Docket No. E-00000P-08-0570 to gather information on the progress of Southern California Edison Company ("SCE") and other parties on modifying DPV2 to achieve additional Arizona benefits. During the Special Open Meeting, the ACC also requested SCE propose and engage in a Meet and Confer process and report on the results. The Meet and Confer Report identified additional benefits from the project.

It continues to be SCE's priority and preference to achieve resolution of DPV2 in Arizona with the state of Arizona. Notwithstanding SCE's priority and preference for an Arizona resolution, SCE cannot foreclose its legal options for completing the DPV2 Project. Therefore, SCE is pursuing the FERC backstop "pre-filing" process, but a formal filing will not be made at FERC before the 3rd quarter of 2009, if a filing is made at all. FERC commenced its pre-filing process for DPV2 in May 2008. FERC's pre-filing process can take up to 12 months to complete (i.e., before a formal filing is made). SCE continues to comply with the demands of the ongoing FERC pre-filing process (e.g., submitting prescribed "Resource Reports" and answering data requests). FERC's backstop process requires that the applicant file the project for which project approval has been denied or withheld for more than one year. In the case of DPV2, that would mean if SCE formally files at FERC it would submit the DPV2 project as denied by the ACC. FERC's backstop process envisions and accommodates stakeholder input (meaning, for example, if there are modifications to DPV2 that have been vetted

through a stakeholder process, pursuit of a formal filing at FERC (should that option be invoked) could benefit from improvements to the project.

The following are links to various websites with DPV2 related information:

Information related to the technical aspects of the DPV2 project can be found on the CAISO website at the following link:

http://www.caiso.com/docs/2005/01/19/2005011914572217739.html

Also, the following website has information related to the California fact sheet and Open House Storyboard about the DPV2 project:

http://www.sce.com/PowerandEnvironment/Transmission/CurrentProjects/DPV/default.htm

The ACC website location with DPV2 related information is:

http://www.azcc.gov/divisions/utilities/electric/paloverde-index.asp

June 2009 Update

There have been significant economic, resource, and load changes in the West since SCE prepared the initial analysis supporting the filing at the ACC for approval of the DPV2 transmission project. These changes include increased generation resources in California, including a significant amount of renewable generation projects due to increased renewable goals; and reduced load forecasts, due to changed economic conditions and the success of energy efficiency programs.

The analysis no longer supports SCE re-filing with the ACC, at this time, for authorization of the Arizona portion of the Project.

SCE intends to continue to review the anticipated renewable and non-renewable benefits that building DPV2 would provide to both Arizona and California. If the required interconnection studies establish the need for new transmission in western Arizona to interconnect generation resources into the California Independent System Operator ("CAISO") system, SCE will seek ACC approval of necessary transmission.

In the meantime, SCE will continue to pursue the California portion of the Project, which is needed to interconnect generation resources in the Blythe area. SCE will cease the current pre-filing activities at the Federal Energy Regulatory Commission.

While SCE is not able to proceed immediately with permitting the Arizona portion of DPV2, SCE is committed to find a way to do so if further analysis supports the approach.

Revised and Updated Project Description

A new 500 kV transmission line parallel to SCE's existing DPV1 and Devers-Valley No.1 500 kV lines connecting a new SCE 500 kV switchyard called Colorado River to SCE's Devers and Valley substations, forming a new Colorado River-Devers-Valley 500 kV line. The projected investment is approximately $723 million.

Regulatory Update

Modification of CPCN for California-Only Portion – In May 2005, SCE filed a Petition to Modify the CPUC's DPV2 decision requesting authorization to commence construction of the California portion. A CPUC decision is pending. SCE believes that the California portion is the best option to interconnect renewable and non-renewable generation in the Blythe area. SCE is working with the CAISO to determine what support is necessary for construction of the California portion as a stand-alone project.

Up to date information can be accessed at SCE's website at:

http://www.sce.com/NR/rdonlyres/0A5F8FEB-5357-4C11-BD93-07387DE4B2C1/0/090515_DPV2ProjectUpdate_May2009.pdf

A.5 Tehachapi Renewable Transmission Project

SCE is currently constructing Segments 1 to 3 in a series of new and updated electric transmission lines and substations that will deliver electricity from new wind farms in the Tehachapi area to SCE customers and the California transmission grid. The California Public Utilities Commission approved project Segments 1 to 3 in March 2007. The project is a vital part of SCE's efforts to meet California's renewable energy goal that renewable energy must account for 20 percent of customers' energy needs by 2010. This project has the potential to tap thousands of megawatts of energy from renewable sources.

Segments 1 to 3 of the project involve constructing 220 kV and 500 kV transmission line upgrades and new substations between the Tehachapi Wind Resource Area in southern Kern County and Los Angeles County. Approximately

80 miles of transmission lines will be build in the three segments approved by the CPUC. The project has a proposed in-service date of 2009-2010.

Additional information related to the technical aspects of the Tehachapi Renewable Transmission Project Segments 1-3 can be found at the following link:

http://www.sce.com/PowerandEnvironment/Transmission/CurrentProjects/TRTP1-3/

Segments 4 to 11 of the Tehachapi Renewable Transmission Project would allow SCE to access additional renewable resources in order to deliver energy from renewable sources to SCE customers and the California transmission grid. The project was submitted to the CPUC and the U.S. Forest Service for authorization to construct the project in the summer of 2007, but is awaiting approval from both agencies at this time. SCE anticipates a decision from the CPUC and the U.S. Forest Service during the summer of 2009.

Segments 4 to 11 would include the construction of approximately 250 miles of new and upgraded electric transmission lines and several substations between eastern Kern County and San Bernardino County. If the project receives timely approval, the lines and substations may be placed in-service by the winter of 2013.

Additional information related to the technical aspects of the Tehachapi Renewable Transmission Project Segments 4-11 can be found at the following link:

http://www.sce.com/PowerandEnvironment/Transmission/CurrentProjects/TRTP4-11/

A.6 Eldorado-Ivanpah Transmission Project

SCE is evaluating a potential Eldorado-Ivanpah Transmission Project that would allow it to access several solar rich resource areas near the southern California-Nevada border around Primm, Nevada that have been identified by officials with the U.S. Bureau of Land Management, California, Nevada, and solar developers. This project would provide the electrical facilities and capacity necessary to access and deliver power from the renewable resources to SCE's customers. The final decision to file this project for approval with the required agencies and local jurisdictions has not been made at this time.

If SCE proceeds with this project, the project would involve the construction of a

new substation and the upgrade to approximately 35 miles of transmission lines. If the project is submitted and receives timely approval, the substation and line may be placed in-service by 2013.

Additional information related to the technical aspects of the Eldorado-Ivanpah Transmission Project can be found at the following link:

http://www.sce.com/PowerandEnvironment/Transmission/CurrentProjects/EITP/

B. Specific Instructions

B.1 Transfer Capabilities into SCE's Power Grid

Each electric transmission system owner shall submit a description of its bulk electric system and its latest transmission expansion plan. The electric system description and plan shall include:

1. *A description of the transfer capabilities for transmission lines or transmission paths delivering electric power into the transmission owner's grid.*
    a. *The description shall include the size (for example, megavolt ampere [MVA] or megawatt [MW]) and length of the lines or lines included in the path and the substations to which the line connects.*
    b. *A description of any planned upgrades to the facilities that are used to import power into the transmission owner's grid that are expected to be operational between January 2009 and December 2018, including:*
        i. *Descriptions of the upgrades including costs, benefits, maps, and the MW impact of the upgrades on transfer capabilities.*
        ii. *Descriptions of the alternatives considered in developing the upgrades.*
    c. *Any maintenance or construction that could impact transfer capabilities or the ability to move power over a path between January 2009 and December 20011.*
    d. *A description of any planned transmission facilities that would create a new transmission path or transmission line to import electric power into the transmission owner's bulk electric network that are expected to be operational between January 2009 and December 2018, including:*
        i. *Descriptions of the facilities, including costs, benefits, maps, and the MW impact of the upgrade on transfer capabilities.*
        ii. *Descriptions of the alternatives, including non-wires alternatives, considered in developing the upgrades.*
    e. *A general description of any planned upgrades to the transmission network that imports electric power into the electric transmission system owner's bulk transmission grid that are expected to be operational after December 2018.*

SCE Response:

The SCE transmission system consists primarily of 500 kV and 230 kV facilities. These transmission facilities are used to deliver power from generating plants to wholesale and large retail customers, to transfer power to other utilities, and to supply power to SCE's sub- transmission system for ultimate distribution to SCE's retail customers[1]. The SCE transmission system includes 626 miles of

[1] - The bulk of SCE's load, along with most of SCE's former oil/gas burning generating facilities, are within the Los Angeles Basin.

1,000 kV DC transmission (SCE's ownership share is 50% of the line capacity) and 1,238 miles of 500 kV AC transmission lines that are interconnected with utilities in northern California, the Pacific Northwest, and the Desert Southwest. The 500 kV transmission system lines serve seven major bulk power transmission substations where voltages are stepped down to 230 kV, the most prevalent voltage for SCE's Los Angeles Basin-area transmission system.

The SCE transmission system also includes approximately 3,524 miles of 230 kV transmission lines which form a network, or grid, providing for the transmission of power from generating stations and 500/230 kV substations throughout SCE's service territory. This network supplies power to more than 47 substations. These SCE "A" substations, where 230 kV voltages are typically stepped down to 115 kV or 66 kV via A-bank transformers, are source stations for SCE's 115 kV and 66 kV sub-transmission systems. The sub-transmission system delivers power over 7,082 miles of sub-transmission lines (including the 33 kV) to large retail customers, and provides interconnection to various generators, delivering power at sub-transmission voltages.

Most of the 500 kV lines, 230 kV lines, and 500/230 kV transformers that are part of the SCE transmission grid are under CAISO operational control, and are subject to FERC jurisdiction.[2] With few exceptions, all of SCE's 230/66 kV and 230/115 kV transformers, sub-transmission system facilities, and distribution system facilities are collectively referred to as the non-CAISO distribution system and are under Commission jurisdiction[3]. The non-CAISO distribution system includes poles, wires, transformers, circuit breakers, switches, insulators, and various other pieces of equipment used to deliver power from the CAISO transmission grid to SCE's customers.

The SCE transmission system provides for area load to be served primarily by local
generators, which include nuclear, renewable, and gas-fired resources. Remaining power needs are filled with imports delivered to Southern California via high-voltage AC and DC lines from northern California, the Pacific Northwest

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[2] - Exceptions include the Coolwater–Kramer 230 kV, Mandalay–Santa Clara 230 kV, Ormond Beach–Moorpark 230 kV, and Huntington Beach–Ellis 230 kV transmission lines subject to radial generator tie line agreements

[3] - Exceptions include those portions of the Antelope/Bailey 66 kV system, Devers/Mirage 115 kV system and
Victor/Kramer 115 kV subtransmission system, which all operate in parallel with the 230 kV transmission systems and are considered part of the ISO-controlled transmission grid. Exceptions also include the 115 kV lines North of Kramer to Inyokern and Control, the Inyo 115 kV phase shifter, the 55 kV Silver Peak line connecting to Sierra Pacific, and the Eldorado-Baker-Coolwater–Dunn Siding–Mountain Pass 115 kV line.

and the Desert Southwest. The SCE transmission system has interconnections with neighboring utilities through the following tie lines:

Los Angeles Department of Water and Power (LADWP)

- Inyo 230 kV tie
- Lugo-Victorville 500 kV Transmission Line (T/L)
- Eldorado-McCullough 500 kV T/L
- Sylmar 230/220 kV Station
- Velasco-Laguna Bell 230 kV tie (Normally Open)
- Control-Haiwee 115/230 kV tie (Normally Open)

San Diego Gas & Electric (SDG&E)

- San Onofre 230 kV bus

Imperial Irrigation District (IID)

- Devers-Coachella 230 kV T/L
- Mirage-Ramon 230 kV T/L
- Concho– IID 92 kV (Normally Open)

Arizona Public Service (APS)

- Eldorado-Moenkopi 500 kV T/L

Nevada Power Company (NPC)

- Eldorado-Merchant 230 kV line
- Mohave 500/69 kV Substation

City of Pasadena

- Goodrich 230 kV substation

City of Anaheim

- Lewis 230 kV substation

Sierra Power Pacific (SPP)

- Control-Silver Peak 55 kV 1&2 T/Ls

Pacific Gas & Electric (PG&E)

- Midway-Vincent 500 kV Nos.1-3 T/Ls

Western Area Power Administration (WAPA)

- Eldorado-Mead 230 kV 1&2 T/Ls
- Blythe 161 kV bus tie

California Department of Water Resources (DWR)

- Pardee-Pastoria-Warner 230 kV line

Metropolitan Water District (MWD)

- Mirage-Julian Hinds 230 kV T/L
- Eagle Mountain 230 kV substation

Additionally, the following municipal utilities located within SCE's service territory have interconnections with SCE's electric system at different voltage levels: Vernon, Banning, Colton, Azusa, and Riverside. Anza, Southern California Water Company, the DWR (Edmonston pumping plant, Mojave Siphon, Pear Blossom pumping plant, and Devil Canyon), and MWD (Iron Mountain, and Camino) also have facilities interconnected to the SCE system.

The SCE transmission import capability is constrained by non-simultaneous path limits established by the Western Electricity Coordinating Council (WECC) as well as existing regional operating procedures and nomograms.

The ability of SCE to import power from northern California or the Pacific Northwest is limited by WECC Path 26, which is comprised of three 500 kV transmission lines between the SCE Vincent substation and the PG&E Midway substation. This path is currently rated at 4,000 MW in the north to south direction and 3,000 MW in the south to north direction. Other major WECC paths facilitating power transfers from the Desert Southwest into Southern California are the East of River (EOR) and West of River (WOR) paths. The EOR and WOR are rated 8,055 MW and 10,623 MW, respectively.

More importantly, SCE's transmission import capability is limited by the Southern California Import Transmission (SCIT) operating nomogram, which determines the maximum power transfers over five major paths into Southern California. The five major paths are the Pacific DC Intertie, the Intermountain Power Project DC line, North of Lugo transmission path, Midway-Vincent path, and the West of River path. The SCIT import nomogram is updated seasonally. The current maximum SCIT limit is 14,750 MW during winter 2006/2007. The 2006 summer SCIT limit was 22 15,600 MW. SCIT is lower in winter compared to the summer because there is less generation on-line during the winter. The 2006 summer SCIT value of 15,600 MW was the value with the Devers SVC fully functional. As for next summer, *i.e.*, summer 2007, SCE will have two new 500 kV shunt capacitors at Valley 500 kV substation, and probably higher load levels, so SCE can expect next summer's SCIT to be about the same as last summer's (around 15, 600 MW). It is expected that the necessary studies will be completed during spring 2007 for the 2007 summer SCIT nomogram.

Detailed information on all transmission paths in the WECC can be found in the following report:

http://www.wecc.biz/wrap.php?file=wrap/pubOrder.html&POSTNUKESID=6c99f28fca60859e7626f78196776bc5.

More information can be found at the following web link about the Southern

California Import Transmission (SCIT) nomogram:

http://www.caiso.com/docs/2002/01/29/2002012909363927693.pdf

B.2 Transfer Capabilities Within SCE's Power Grid

Each electric transmission system owner shall submit a description of its bulk electric system and its latest transmission expansion plan. The electric system description and plan shall include:

2. *A description of the transfer capabilities for bulk transmission lines or bulk transmission paths limiting the delivery of electric power within the electric transmission system owner's grid.*
    a. *The description shall include the size (MVA, MW) and length of the lines or lines included in the path and the substations to which the line connects.*
    b. *A description of any upgrades to the facilities that are used to import power into the electric transmission system owner's grid that are expected to be operational between January 2009 and December 2018, including:*
        i. *Descriptions of the facility's or upgrade's costs, benefits, maps, and the megawatt impact of the upgrade on transfer capabilities.*
        ii. *Descriptions of the alternatives, such as non-wires alternatives, considered in developing the upgrades.*
    c. *Any maintenance or construction that could impact transfer capabilities within the electric transmission system owner's bulk transmission grid between January 2009 and December 2011.*
    d. *A description of any planned transmission facilities that would create a new means to transfer electric power within the electric transmission system owner's bulk transmission network that are expected to be operational between January 2009 and December 2018, including:*
        i. *Descriptions of the facility's or upgrade's costs, benefits, maps, and the MW impact of the upgrade on transfer capabilities*
        ii. *Descriptions of the alternatives, such as non-wire alternatives, considered in developing the upgrades.*
    e. *A general description of any planned upgrades to the transmission network that transports electric power within the electric transmission system owner's bulk transmission network that are expected to be operational after December 2018.*

SCE Response:

The majority of SCE's internal transmission lines, except three 500 kV lines south of Lugo, are typically limited by either the thermal capability of the transmission line or by the substation terminal equipment. The detailed description of these lines, including length, conductor type, rating, and substations to which the line connects can be found on the following web link:

http://www.caiso.com/docs/2005/09/28/200509281729045775.html

The three 500 kV lines south of Lugo, called the south of Lugo path, have a

rating of 6100 MW. This rating is based on loss of two lines simultaneously and a Special Protection Scheme (SPS) to drop SCE's load at selected substations.

SCE's proposed transmission projects that are expected to be operational between January 2007 and December 2016 to serve load and to meet NERC/WECC reliability standards can be found on the following web link:

http://www.caiso.com/1b6b/1b6bb4d51db0.pdf

The web link provides list of proposed projects, benefits, and approximate cost of each project.

B.3 Transmission Needed to Meet SCE's Renewable Energy Requirements & Proposed Once-through Cooling Policies

Each electric transmission system owner shall submit a description of its bulk electric system and its latest transmission expansion plan. The electric system description and plan shall include:

3. *A description of the bulk transmission facilities needed for meeting state mandated electricity policy goals such as, renewable energy requirements, replacing aging power plants, complying with proposed State Water Resources Control Board policies for phasing out power plants that use once-through cooling or eliminating or reducing local capacity requirements.*
    a. *The description shall include the size (MVA, MW) and length of the lines or lines included in the path and the substations to which the line connects.*
    b. *A description of any upgrades to the facilities in the electric transmission system owner's grid that are expected to be operating between January 2009 and December 2018, including:*
        i. *Descriptions of the upgrades including costs, benefits, maps, and the MW impact of the upgrade on transfer capabilities*
        ii. *Descriptions of the alternatives, such as non-wires alternatives considered in developing the upgrades.*
    c. *A general description of any planned upgrades expected to be operating after December 2018.*

SCE Response:

SCE's 2006 Long-Term Procurement Plan (LTPP) addresses the transmission facilities needed to meet renewable energy requirements mandated by California legislation. More information about SCE's transmission plans to access renewable energy can be found at the following web link.

http://www.cpuc.ca.gov/LTTPs2006_2016/SCE/SCE%20Volume%20IB%202006%20LTPP.pdf

The 2008 Long-Term Procurement Plan (LTPP) proceeding followed immediately after D.07-12-052 – the decision approving the IOUs (Investor-Owned Utilities) 2006 LTTPs and granting the authority to procure new generation. This successor rulemaking will not review and approve a new set of LTTPs. Rather, this rulemaking will address a series of policy proposals to refine technical practices used to develop procurement plans, and consider other procedural matters. Any new policies, practices, and procedures adopted in this proceeding will, in turn, be incorporated into subsequent planning cycles, principally the 2010 LTPP, which is anticipated to begin in early 2009. In furtherance of this new strategy, on February 20, 2008, the CPUC issued the R.08-02-007 Order

Instituting Rulemaking (OIR) setting forth goals for the LTPP process as it relates to the other proceedings.

The ultimate need for additional transmission facilities depends on the final power purchase agreements signed between SCE and the renewable energy developers. Much of the technically and economically feasible renewable resource development potential currently exists in remote areas with little or no current transmission capacity to those areas.

Detailed information on the complex process SCE is working through with the CPUC in order to ensure the development of transmission facilities to access renewable energy can be found at the following link:

http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/LTPP2008/

Transmission Needed to Meet Proposed Once-through Cooling Policies

Based on CAISO's analysis in "The Impacts on Electric System Reliability from Restrictions on Once-through Cooling in California," generation re-powering is the preferred option to mitigate the reliability impacts caused by retiring plants using once-through cooling. The presentation is available at the link below:

http://www.caiso.com/208b/208b8ac831b00.pdf

B.4 Corridor Needs Related to SCE's Point-to-Point Electric Transfers

Each electric transmission system owner shall submit a description of its bulk electric system and its latest transmission expansion plan. The electric system description and plan shall include:

4. *For those point-to-point electrical transfer needs identified in the sections (1-4) above, please discuss potential corridor needs in relation to the following:*
    a. *Opportunities to link with existing federally designated corridors or potential federal corridors identified under Section 368 of the Energy Policy Act of 2005.*
    b. *Opportunities to provide transmission capacity to develop the renewable generation resources needed to meet the state's Renewables Portfolio Standard (RPS) goals.*
    c. *Opportunities to import additional economical electricity from out of state.*
    d. *Opportunities to export renewable-based generation outside California.*
    e. *Opportunities to improve the reliability or reduce the congestion of the state's electricity system.*
    f. *Opportunities to upgrade existing transmission lines.*
    g. *Opportunities to meet future growth in load.*
    h. *The potential to impact sensitive lands that may not be appropriate locations for energy corridors – including, but not limited to, state and national parks, state and national designated wilderness and wilderness study areas, state and national wildlife refuges and areas, critical inventoried roadless areas in national forests, habitat conservation plan areas, and special habitat mitigation areas.*
    i. *Consideration of the Garamendi Principles (See Appendix B) as identified in Senate Bill (SB) 2431 (Chapter 1457, Statutes of 1988) and as noted in SB 1059, Section 1 (Escutia and Morrow, Chapter 638, Statutes of 2006), in the case of existing corridors.*
    j. *Any work previously done with local agencies and any geographical areas of sensitivity that may have been identified.*
    k. *Any other known major issues that have the potential to impact a future corridor designation.*

SCE Response:

The CEC has been very active in the Energy Policy Act of 2005 Section 368 process and SCE appreciates the CEC's efforts thus far. SCE believes the greatest opportunity for coordination exists through the CEC by geographically extending any of the federally-designated corridor boundaries on federal lands to non-federal lands in California. For example, a corridor which spans 10 miles on federally-owned land should connect to a state utility corridor to provide value to both the state and federal planning process. By extending the lengths of these

corridors through non-federal lands, the siting of transmission facilities by public utilities could become more streamlined and less time consuming because the designated corridor would constitute a usable corridor. For example, state designated corridors that do not line up with federal land corridors would provide little value to utilities that must cross both federal and nonfederal lands with a single transmission line.

Further, many of the potential corridors designated under Section 368 will be 3500 feet wide. SCE recommends that any state-designated corridors be at least this wide at the interface with the federal corridor in order to provide sufficient room to allow a line "turning" room to change direction to get to the narrower state corridor. The transition of 3500 feet to a smaller width should be done in no shorter distance than 3000 feet. The corridor may eventually be narrowed once the specific project route has been identified. In addition, a wider corridor early in the process may facilitate the studying and potential choice of alternative project routes by the CPUC.

Below, SCE has included a list of existing and proposed corridors on federal lands. SCE is hopeful that these existing and proposed corridors can be carried over into the CEC's corridor designation efforts under Senate Bill 1059.

Existing Corridors:

1. Big Creek T/L System: Sierra National Forest, Los Padres National Forest and Angeles National Forest;
2. Midway-Vincent T/L: Angeles National Forest, Los Padres National Forest and Bureau of Land Management (BLM);
3. Vincent-Rio Hondo T/L: Angeles National Forest and Corps of Engineers;
4. Serrano-Valley T/L: Cleveland National Forest;
5. Lugo-Eldorado T/L: BLM and National Park Service;
6. Mohave-Lugo T/L: BLM and National Park Service;
7. Lugo-Mira Loma T/L: San Bernardino National Forest;
8. Lugo-Serrano T/L: San Bernardino National Forest;
9. Devers-Valley T/L: BLM and San Bernardino National Forest;
10. Devers-Palo Verde T/L: BLM and U.S. Fish and Wildlife (KOFA Wildlife Reserve Arizona); and
11. Other transmission lines, including Control-Inyokern, Coolwater-Kramer, Kramer-Victor, Vincent-Lugo, Devers-Mirage, Devers-Julian Hinds, etc.

Proposed Corridors:

These corridors are considered critical in meeting future growing demand, accessing new diversified generating resources, and mitigating potential congestion due to significant load growth in Southern California, which is mostly surrounded by federally-owned lands.

- **San Bernardino National Forest**

  A new corridor crossing the San Bernardino National Forest, south of Interstate 10 and adjacent to the San Jacinto Wilderness State Park in Riverside County, California should be designated and preserved to accommodate future transmission facilities. The corridor should begin in the north Palm Springs area, traverse the San Bernardino National Forest in an east-to-west direction, and end near the San Jacinto area. The transmission facilities situated in this corridor would bring needed power to the load centers in western Riverside County from the Desert Southwest as well as improve reliability in the area.

- **Cleveland National Forest**

  A new corridor crossing the northern end of the Cleveland National Forest should be developed to accommodate future transmission facilities. The corridor should begin in the northeastern foothills of the Santa Ana mountain range south of the city of Corona, Riverside County, cross the northern edge of the Cleveland National Forest south of state highway 91, and end at the northwestern foothills of the Santa Ana mountain range in the proximity of state highway 91 and 241 interchange in Orange County, California. The new transmission facilities situated on this corridor would bring needed power from the Desert Southwest to the load centers in Orange County.

- **Angeles National Forest**

  A new corridor should be developed to accommodate future transmission facilities that would provide additional transmission capacity to bring needed power from northern California as well as renewable resources located in the Mojave Desert to the major load centers in the Los Angeles basin. The corridor should begin in the northern foothills of the San Gabriel mountain range near SCE's Vincent Substation in the city of Palmdale, California, cross over the Angeles National Forest in a north to south direction, and stop at the southern edge of the Angeles National Forest near SCE's Rio Hondo Substation in the city of Irwindale, California.

New corridors crossing the Angeles National Forest and potential National Conservation Area should be developed to accommodate future intra-state transmission facilities. A new corridor should start near PG&E's Midway Substation near Buttonwillow, CA, cross over potential National Conversation Area in a northwestern to southeastern direction, and end at the Tehachapi area north of Lancaster, CA. A separate north to south corridor should continue from the Tehachapi area, traverse the Angeles National Forest in a north to south direction near Palmdale, CA, and end at the southern edge of the Castaic mountain range near Santa Clarita Valley. The new transmission facilities situated on these corridors would be needed to bring economic power from the northern California and the Pacific Northwest areas to southern California, and integrate renewable resources developed in the Mojave Desert.

- **Mojave National Preserve**

  A new east-to-west corridor should be designated in order to accommodate future inter-regional transmission facilities that would bring economic power to the major load centers in southern California from Nevada/Arizona/New Mexico area. This corridor would start from the southern tip of Nevada near the Nevada/California/Arizona border, cross the Mohave National Preserve paralleling to Interstate 40 and BLM land, and end near Barstow, California. (See update)

- **Los Padres National Forest**

  A new corridor should be designated and preserved in order to accommodate future transmission facilities from Ventura to Goleta, California. This corridor should cross southern portions of the Los Padres National Forest, paralleling interstate highway 101 in an east to west direction. The new transmission facilities situated on this corridor would provide additional transmission capacity to serve loads as well as to improve reliability to customers in the Santa Barbara and Ventura areas

- **Joshua Tree National Park**

  A new corridor should be designated and preserved to accommodate future inter-state transmission facilities from southern Arizona near the Palo Verde area to SCE's Devers Substation near Palm Springs, California. This corridor should cross southern portions of the Joshua Tree National Park in an east to west direction. (See update)

Update

On June 3rd, 2009, the California Renewable Energy Transmission Initiative (RETI) Stakeholders Steering Committee (SSC) team published its draft Phase 2A Conceptual Transmission Plan Report. In it's analysis of the need for transmission corridor designation. RETI makes the following key policy recommendations:

The California Energy Commission should begin immediately,

- to designate additional appropriate corridors, beyond those already established by federal agencies or utilities' rights of way,
- to preserve and protect transmission access to areas where renewable energy development is likely to occur, including likely routes for Renewable Foundation lines and Renewable Delivery lines.
- to coordinate among state and federal agencies and support access to, generation development areas, as well as to the most likely CREZ[4] (for example, BLM Solar Energy Zones, and Desert Renewable Energy Conservation Plan (DRECP)).

In its efforts to identify, access, and rank its proposed conceptual transmission lines RETI also considered the renewable generating projects in the CAISO and Public Owned Utilities (POU) generator queues requesting interconnection in close proximity to the specific corridor.

- **Mojave National Preserve**

A new east-to-west corridor should be designated in order to accommodate future inter-regional transmission facilities that would bring economic power to the major load centers in southern California from Nevada/Arizona/New Mexico area. This corridor would start from the southern tip of Nevada near the Nevada/California/Arizona border, cross the Mohave National Preserve paralleling Interstate 40 and BLM land, and ends near Barstow, California.

In addition, the recently published RETI Phase 2A Draft Conceptual Transmission Plan Report has identified a total of 7,686 MW of renewable resources in eastern and central San Bernardino County. The available renewable resource capacity is located in the following CREZs:

1. Mountain Pass - 663 MW
2. San Bernardino Baker - 1468 MW
3. Needles - 424 MW
4. Iron Mountain - 2,265 MW
5. Pisgah - 720 MW
6. Barstow - 934 MW
7. San Bernardino Lucerne - 1,212 MW

4

Total Capacity - 7,686 MW

This almost 8,000 MW of renewable generation would require several 500 kV circuits to integrate and deliver the output from these resources. The new corridor(s) or enough separation between the proposed transmission circuits would be needed to ensure reliable system performance during contingencies of the transmission circuits within a common corridor. WECC defines Common Corridor as: *Contiguous right-of-way or two parallel rights-of-way with structure centerline separation less than the longest span length of the two circuits at the point of separation or 500 feet, whichever is greater, between the transmission circuits. This separation requirement does not apply to the last five spans of the transmission circuits entering a substation*.

The simultaneous outage of 500 kV transmission circuits within a common corridor may have unacceptable consequences on system reliability, even if the electrical grid could be protected through the implementation of a Special Protection System (SPS) due to the large amount of generation that could affected if the new circuits are placed in one common corridor.

- **Joshua Tree National Park**

A new corridor should be designated and preserved to accommodate future inter-state transmission facilities from southern Arizona near the Palo Verde area to SCE's Devers Substation near Palm Springs, California. This corridor should cross southern portions of the Joshua Tree National Park in an east to west direction.

In addition, the recently published RETI Phase 2A Draft Conceptual Transmission Plan identified a total of 10,627 MW of renewable resources in Riverside county and Imperial county in California and Baja Mexico in close proximity of California to be accessed by the plan's conceptual transmission lines within this transmission corridor. The available renewable resource capacity is located in the following the CREZs:

1. Riverside East - 3,120 MW
2. Palm Springs - 308 MW
3. Twenty Nine Palms - 722 MW
4. Imperial South - 1,318 MW
5. Imperial East - 689 MW
6. Imperial North A & B - 2,102 MW
7. Baja (Mexico) - 2,368 MW.

Total Capacity - 10,627 MW

This over 10,000 MW of renewable generation would require several 500 kV circuits to integrate and deliver the output from these resources. The new corridor(s) or enough separation between the proposed transmission circuits would be needed to ensure reliable system performance during contingencies of the transmission circuits within a common corridor. WECC defines Common Corridor as: *Contiguous right-of-way or two parallel rights-of-way with structure centerline separation less than the longest span length of the two circuits at the point of separation or 500 feet, whichever is greater, between the transmission circuits. This separation requirement does not apply to the last five spans of the transmission circuits entering a substation*.

The simultaneous outage of 500 kV transmission circuits within a common corridor may have unacceptable consequences on system reliability, even if the electrical grid could be protected through the implementation of a Special Protection System (SPS) due to the large amount of generation that could affected if the new circuits are placed in one common corridor.

B.5 Garamendi Principles

There may be sensitive locations where energy corridors should not be designated. However, from an environmental perspective, allowing utilities to designate and set aside corridors upfront could be a means to implement mitigation strategies and land conservation arrangements for environmental concerns. Such a process will allow utilities to set aside land for future use while preserving certain qualities associated with that land before, during, and after the construction of transmission facilities in the corridor.

Below, SCE has identified areas that have the potential to be affected by the designation of any corridors. SCE believes most concerns associated with these corridors may be mitigated by appropriate measures. A list of the areas that may be considered particularly sensitive and the specific sensitivities associated with each area is included below. This list is based on data contained in literature (e.g., the California Natural Diversity Data Base) and available information for the general areas containing the corridors that was identified in previous SCE environmental studies. The information presented below was prepared by SCE biologists and archaeologists and is not comprehensive as to all sensitivities.

SAN BERNARDINO NATIONAL FOREST

- Visual resources
- Recreation (Pacific Crest Trail)
- Federal and/or state threatened and endangered listed species (applies to SBNF on both sides of I-10):
  - Bald eagle, spotted owl, arroyo toad, armored 3-spined stickleback (fish), Santa Ana sucker (fish), rubber boa (snake), and peninsular bighorn sheep
- California Department of Fish and Game listed species (numerous species);
- Palm Springs sensitivities: oasis, canyon flora (Tahquitz Canyon)
- Significant Native American concerns
- Historic resources: Holcomb Valley, mining, hydro facilities
- Archaeology (mostly on north side): Native American historical usage

CLEVELAND NATIONAL FOREST

- Visual resources
- Recreation
- No federal threatened and endangered listed species
- A number of sensitive plant species
- State threatened or endangered listed species: arroyo toad, red-legged frog (Temecula)

- Vernal pools (preserves)
- California Department of Fish and Game listed species (numerous species)
- Some Native American concerns
- Some historic resources
- Some archaeological resources

ANGELES NATIONAL FOREST

- Visual resources
- Recreation
- No Federal threatened and endangered listed species
- A number of sensitive plant species
- State threatened and endangered listed species: arroyo toad, red-legged frog, bighorn sheep;
- California Department of Fish and Game listed species (numerous species)
- Some Native American concerns
- Some historic resources
- Some archaeological resources

MOHAVE NATIONAL PRESERVE

- Visual resources
- Recreation
- Federal and/or state threatened and endangered listed species: desert tortoise, Gila monster, big horn sheep, golden eagle, swains hawk, le conte thrasher (bird), Mohave chub (fish)
- A number of sensitive plant species
- California Department of Fish and Game listed species (numerous species)
- Some Native American concerns
- Significant historic resources
- Significant archaeological resources

LOS PADRES NATIONAL FOREST

- Visual resources
- Recreation
- Federal and/or state threatened and endangered listed species: California condor
- A number of sensitive plant species
- California Department of Fish and Game listed species (numerous species)
- Some Native American concerns
- Some historic resources

- Some archaeological resources

JOSHUA TREE NATIONAL PARK

- Significant visual resources
- Significant recreation
- Federal and/or state threatened and endangered listed species: big horn sheep, desert tortoise
- A number of sensitive plant species
- California Department of Fish and Game listed species (numerous species)
- Significant Native American concerns
- Significant historic resources
- Significant archaeological resources

WILD PLACES AT RISK

- Chuckwalla Mountains Wilderness: desert tortoise, big horn sheep, sensitive plants, California Department of Fish and Game (CDFG) listed species

- Little Chuckwalla Mountains Wilderness: desert tortoise, big horn sheep, sensitive plants, CDFG listed species

- Kelso Dunes Wilderness: fringe-toed lizard

- Mecca Hills wilderness: sensitive plants

- Newberry Mountains Wilderness: big horn sheep, significant archaeology

- Old Woman Mountains Wilderness: located in Mohave Preserve

- Rodman Mountains Wilderness: big horn sheep, desert tortoise, Mohave ground squirrel, sensitive plants, significant archaeology

- Rice Valley Wilderness: desert tortoise, sensitive plants

- Turtle Mountains Wilderness: desert tortoise, sensitive plants

- Cady Mountains WSA: desert tortoise, sensitive plants

- Cucamonga Roadless Area: big horn sheep

NATIONAL PARKS

All four listed parks have plant and animal sensitivities as well as public concern that make them the least feasible for a transmission corridor.

STATE PARKS

All parks have plant and animal sensitivities as well as public concern that make them the least feasible for a transmission corridor.