

# Appendix B

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## Data Response ED-SCE-12

Note: Data Response to Question 04, Attachment B, and Attachment D are confidential.

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



August 13, 2008

Mr. Jack Horne  
Regulatory Affairs  
Southern California Edison Company  
General Office, Room 396K  
2244 Walnut Grove Avenue  
Rosemead, CA 91770

**Re: Devers–Palo Verde No. 2 Transmission Line Project - Application No. A.05-04-015  
Information Request Regarding the May 14, 2008 Petition to Modify, the July 17,  
2008 Joint Ruling on Amendment to Petition to Modify, and SCE August 6, 2008  
CEQA Memo**

Dear Mr. Horne:

On May 14, 2008, SCE submitted a Petition for Modification of Decision No. 07-01-040, requesting that the Decision to approve the Devers-Palo Verde No. 2 (DPV2) Transmission Line be modified to allow construction of the California portion of the line. SCE provided additional information to CPUC staff on August 6, 2008, explaining that it believes that a CEQA Addendum is the appropriate document for addressing the potential change to the Final EIR/EIS.

We sent you a data request yesterday (August 12, 2008). Please replace Item 4 of my request of August 12, 2008 with the following:

4. For each project in the interconnection queue that is dependent upon DPV2 for interconnection, please provide the following information, if available:
  - a. the project location, with as much specificity as possible, and identified on a map in relation to DPV2;
  - b. the requested location of interconnection with SCE's network, also identified on a map in relation to DPV2;
  - c. the projected capacity of the project;
  - d. the acreage estimated to be affected by the project;
  - e. the generation technology of the project;
  - f. the projected online date of the project.

Any questions regarding this data request should be directed to me at (415) 703-2068.

**DPV2 Information Request – August 13, 2008**

Sincerely,

Billie C. Blanchard, AICP  
PURA V Project Manager for Devers-Palo Verde #2 Project  
Energy Division, CEQA Unit

cc: Ken Lewis, CPUC Acting Energy Division Director  
Chloe Lukins, CPUC Supervisor of CEQA Unit  
Nicholas Sher, CPUC Legal Division  
Tim Sullivan, CPUC ALJ  
John Kalish, BLM  
Susan Lee, Aspen Environmental Group  
Traci Bone, Advisor

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-12**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** John Tucker

**Title:** Project Manager

**Dated:** 08/12/2008

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**Question 01:**

Does SCE have Power Purchase Agreements (PPA) with any generators that would interconnect to DPV2? If so, please provide a description of each project that is covered under a PPA.

**Response to Question 01:**

As of the date of this response, SCE does not have a Power Purchase Agreement (PPA) with any of the generation projects that have requested interconnection in the Blythe area, including interconnection to DPV2. However, SCE, under its 2008 Renewables Portfolio Standard Solicitation, has received proposals, shortlisted, and commenced PPA negotiations for several of the projects that requested interconnection in the Blythe area. SCE submitted its 2008 Renewables Portfolio Standard Solicitation Report to the CPUC on July 29, 2008. Those generation projects in the Blythe Area that did not submit proposals or that were not shortlisted in SCE's 2008 Renewables Portfolio Standard Solicitation will have an opportunity to participate in subsequent SCE and other California entity solicitations anticipated in 2009.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-12**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** John Tucker

**Title:** Project Manager

**Dated:** 08/12/2008

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**Question 02:**

Is SCE aware of PPAs of any other utilities to purchase renewable generation from projects that would interconnect with DPV2? If so, please provide as much information as possible to describe each project that is covered under a PPA.

**Response to Question 02:**

SCE is not aware of PPAs of any other utilities to purchase renewable generation from projects that would interconnect in the Blythe area, including interconnection to DPV2.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-12**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** John Tucker

**Title:** Project Manager

**Dated:** 08/12/2008

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**Question 03:**

Is SCE aware of any generation projects that have undergone CEQA or NEPA review? If so, please provide copies or references to the environmental documents.

**Response to Question 03:**

To the best of SCE's knowledge, as of the time of this response, with the exception of the Caithness Blythe II project, none of the generation projects included in Table 1 ("New Generation Interconnection Requests in the Blythe Region") of SCE's Petition have undergone CEQA or NEPA review.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-12**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** John Tucker

**Title:** Project Manager

**Dated:** 08/12/2008

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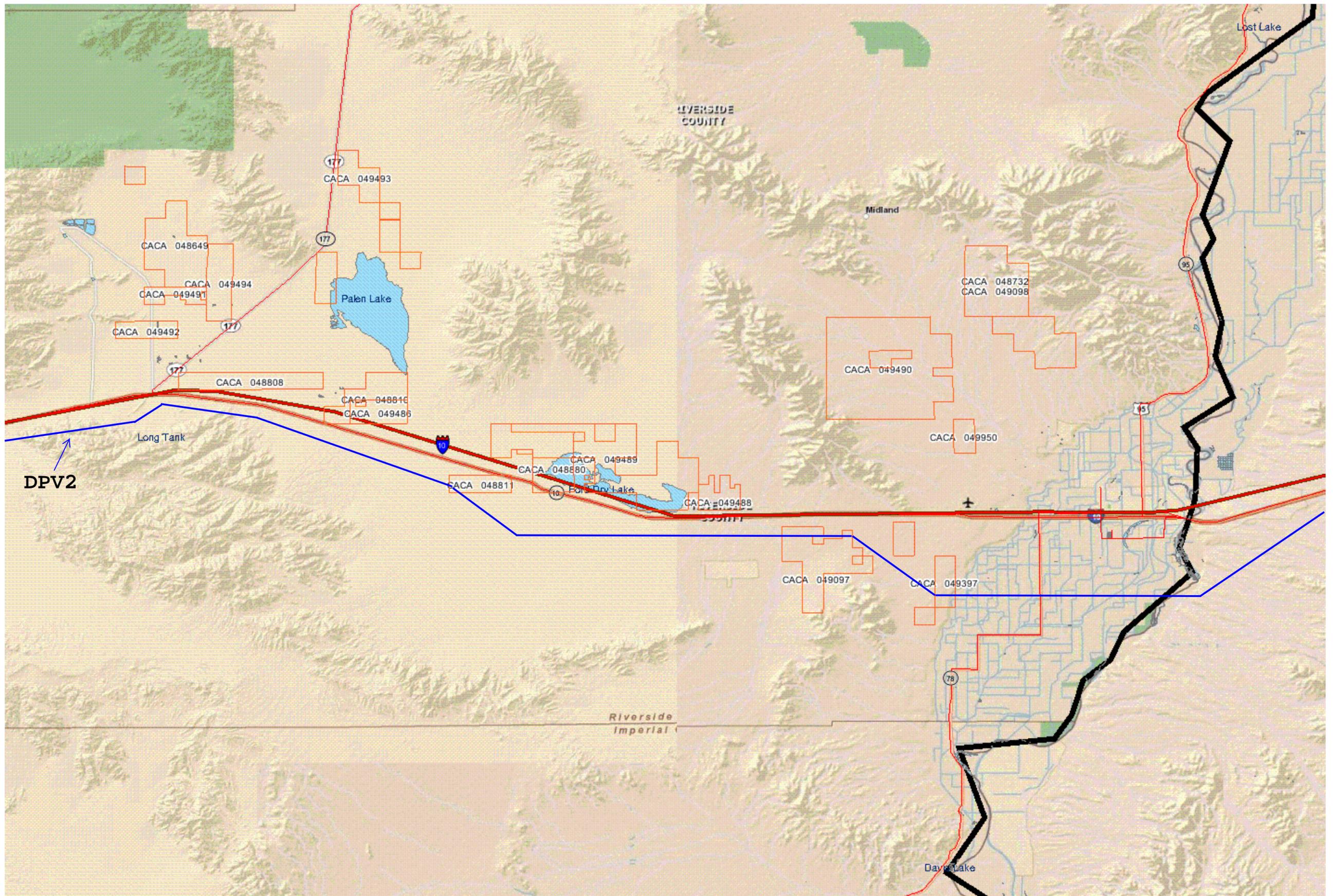
**Question 05:**

Please also provide information, if available, identifying the projects on BLM's published lists of solar and wind project applications that would interconnect with DPV2. If possible, relate each project to its counterpart on the CAISO queue.

**Response to Question 05:**

Please see the response to Question No. 4.

# BLM Data on Solar Projects in the Blythe Area



8/27/2008

No warranty is made by the BLM for the use of the data for purposes not intended by the BLM.



# BLM Data on Solar Projects in the Blythe Area

## Legend

Downloadable PLSS Data		Reference Themes		Base Map		Mining Claims					
Townships(BLM)	Township Boundaries	State Boundaries		Roads		USGS Topos		Mining Claims by Type	LODE CLAIM PLACER CLAIM TUNNEL SITE MILLSITE CLAIM		
Township Labels	T4S R71W	Sections	<small>BLM Alternate Source</small>	Major Roads and Highways		County Boundaries		Ortho Aerial Photography		Mining Claims - Active	
Quarter-Quarters	<small>BLM Alternate Source</small>	Quarter-Quarter Labels	SENW	Lakes		Rivers		PLSS Principal Meridians		Mining Claims - Closed	
				Urban Areas				Surface Management Agency	BLM Lands National Forests BLM Wilderness Area BIA BOR DOD State National Parks BLM National Monument BLM National Conservation Area FWS Other Bankhead Jones State/County/City		
								Shaded Relief			



8/27/2008

No warranty is made by the BLM for the use of the data for purposes not intended by the BLM.



**New Generation Interconnection Requests in the Blythe Area**

Queue Date	Queue Position	Summer Capacity	Station or Transmission Line (Per CAISO Queue)	Interconnection Request Receive Date	Type	Fuel	Renewable	Application Status	County	State	Utility	Proposed On-line Date (as filed with IR)	Current On-line Date	Feasibility Study (IFS)	System Impact Study (SIS)	Facility Study (FAS)	Interconnection Agreement Status	
3/18/2003	17	520	Devers-Palo Verde 500 kV line near Blythe	3/18/2003	CC	NG	No	Active	Riverside	CA	SCE	1/1/2006	6/1/2008	NA	Complete	Complete	In Progress	
11/16/2006	146	150	Eagle Mountain Substation	11/16/2006	PV	S	Yes	Active	Riverside	CA	SCE	12/1/2008	12/1/2008	Complete	In Progress			
11/16/2006	147	400	Eagle Mountain Substation	11/16/2006	PV	S	Yes	Active	Riverside	CA	SCE	2/1/2010	2/1/2010	Complete	In Progress			
3/1/2007	179	300	Julian Hinds 230kV Substation	2/15/2007	ST	S	Yes	Active	San Bernardino	CA	SCE	12/31/2010	12/31/2010	In Progress				
4/4/2007	193	500	Julian Hinds 230kV Substation	3/19/2007	ST	S	Yes	Active	Riverside	CA	SCE	12/31/2010	12/31/2010	In Progress				
5/3/2007	210	600	Eagle Mountain Substation	5/3/2007	PV	S	Yes	Active	Riverside	CA	SCE	12/31/2011	12/31/2011	In Progress				
5/23/2007	219	50	Midpoint switching station	5/7/2007	CT	NG	No	Active	Riverside	CA	SCE	6/1/2012	6/1/2012	In Progress				
6/4/2007	225	640	500kV line to the new Midpoint switching station	5/23/2007	CC	NG	No	Active	Riverside	CA	SCE	6/1/2012	6/1/2012	In Progress				
7/16/2007	245	228	Devers-Mirage-Julian Hinds 230kV line	7/16/2007	WT	W	Yes	Active	Riverside	CA	SCE	12/15/2010	12/15/2010	In Progress				
8/1/2007	251	200	Eagle Mountain-Blythe 161kV line	8/1/2007	PV	S	Yes	Active	Riverside	CA	SCE	12/15/2009	12/15/2009	In Progress				
11/1/2007	270	700	Proposed Midpoint Substation 230kV	11/1/2007	PV	S	Yes	Active	Riverside	CA	SCE	12/1/2011	12/1/2011	Tendered				
1/16/2008	294	1000	Midpoint Substation 500kV	1/15/2008	ST	S	Yes	Active	Riverside	CA	SCE	6/1/2012	6/1/2012	Tendered				
5/2/2008	361	200	Blythe-Eagle Mountain 161kV line	5/2/2008	ST	S	Yes	Active	Riverside	CA	SCE	8/30/2012	8/30/2012					
5/2/2008	362	300	Midpoint Substation	5/2/2008	ST	S	Yes	Active	Riverside	CA	SCE	8/30/2012	8/30/2012					
5/12/2008	365	750	Midpoint Substation	5/6/2008	ST	S	Yes	Active	Riverside	CA	SCE	12/28/2013	12/28/2013					
5/16/2008	369	1300	Midpoint Substation 500kV	5/16/2008	H	WTR	No	Active	Riverside	CA	SCE	6/1/2014	6/1/2014					
5/30/2008	410	49.5	Midpoint Substation 500kV	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	8/1/2012	8/1/2012					
5/30/2008	411	49.5	Midpoint Substation 500kV	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	8/1/2012	8/1/2012					
5/30/2008	415	280	Devers-Palo Verde 500 kV line	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	8/1/2012	8/1/2012					
5/30/2008	416	280	Midpoint Substation 230kV	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	8/1/2012	8/1/2012					
5/30/2008	421	49.5	Eagle Mountain Substation	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	2/1/2012	2/1/2012					
5/30/2008	422	49.5	Camino-Iron Mountain 230kV line	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	2/1/2012	2/1/2012					
5/30/2008	423	49.5	Camino-Iron Mountain 230kV line	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	2/1/2012	2/1/2012					
5/30/2008	425	250	Colorado River Substation	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	7/1/2014	7/1/2014					
5/30/2008	428	250	Eagle Mountain Substation	5/30/2008	ST	S	Yes	Active	San Bernardino	CA	SCE	7/1/2014	7/1/2014					
5/30/2008	432	250	Iron Mountain Substation	5/30/2008	ST	S	Yes	Active	San Bernardino	CA	SCE	7/1/2014	7/1/2014					
5/30/2008	433	250	Iron Mountain Substation	5/30/2008	ST	S	Yes	Active	San Bernardino	CA	SCE	5/29/2015	5/29/2015					
5/30/2008	435	250	Palo Verde-Devers #2 line	5/30/2008	ST	S	Yes	Active	La Paz	AZ	SCE	7/1/2014	7/1/2014					
5/30/2008	439	500	Midpoint Substation	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	12/31/2011	12/31/2011					
5/30/2008	449	250	Midpoint Substation 500kV	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	7/1/2012	7/1/2012					
<b>Total Summer Capacity</b>		<b>10,646</b>																

**Source:**

California ISO Interconnection Queue as of 7/25/2008.

Queue project #435, located in La Paz County, AZ, has requested interconnection at Midpoint and has thus been included in this table.

# Appendix C

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Data Response ED-SCE-13

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



December 15, 2008

Mr. Jack Horne  
Regulatory Affairs  
Southern California Edison Company  
General Office, Room 396K  
2244 Walnut Grove Avenue  
Rosemead, CA 91770

**Re: Devers-Palo Verde No. 2 Transmission Line Project - Application No. A.05-04-015 and Decision 07-01-040 Data Request Regarding the May 14, 2008 SCE Petition to Modify, the July 17, 2008 Joint Ruling on Amendment to Petition to Modify, SCE September 2, 2008 Amendment to Petition to Modify and September 12, 2008 Supplement to Amendment, and SCE August 6, 2008 CEQA Memo**

Dear Mr. Horne:

On May 14, 2008, SCE submitted a Petition for Modification of Decision No. 07-01-040, requesting that the Decision to approve the Devers-Palo Verde No. 2 (DPV2) Transmission Line be modified to allow construction of the California portion of the line. There was a subsequent July 17, 2008 Ruling on the Petition, a September 2, 2008 SCE Amendment to the Petition, and a September 12, 2008 SCE Supplement to the Amendment.

A data request on this Petition was initially sent to SCE on August 12, 2008. On August 13, 2008 this data request was supplemented by additional questions.

Please answer the questions in the attached list within 10 business days unless it is not possible. Responses should be provided to me via email, and also to Susan Lee at Aspen Environmental Group (SLee@Aspeneg.com). Any questions regarding this data request should be directed to me at (415) 703-2068.

Sincerely,

Billie C. Blanchard, AICP  
PURA V Project Manager for Devers-Palo Verde #2 Project  
Energy Division, CEQA Unit

cc: Ken Lewis, CPUC Energy Division Program Manager  
Chloe Lukins, CPUC Supervisor of CEQA Unit  
Nicholas Sher, CPUC Legal Division  
ALJs Victoria Kolakowski and Tim Sullivan  
John Kalish, BLM  
Susan Lee, Aspen Environmental Group  
Traci Bone, Advisor

## Data Request – DPV2 Petition to Modify

1. Please review SCE's responses to the Data Requests of August 12 and 13, 2008, and update them if any information has changed since the responses provided in late August.
2. DPV2 was originally proposed to allow import of lower cost electricity from Arizona's Palo Verde generation hub. The Petition to Modify requests that the California portion be constructed by itself (or before the Arizona portion, should it be approved in the future by the Arizona Corporation Commission), in order to support development of renewable energy projects in the general area between Blythe and Desert Center.
  - a. A.05-04-015 and its PEA state that the capacity of the single-circuit 500 kV DPV2 line would be 1,200 MW. Assuming that the Arizona segment is eventually permitted, how much of the capacity of the line is expected to be used by Arizona generators and how much by California renewable generators?
  - b. Could the capacity of DPV2 as a single circuit 500 kV line be expanded above the 1,200 MW path rating that was originally proposed? If so, what would the maximum capacity be? What equipment is required for capacity expansion, and where would it be located?
  - c. Where would the point (or points) of interconnection be for the renewable generation projects in the Blythe/Desert Center areas to the DPV2 line? Would new substations be required?
3. Please explain the status of the Desert Southwest Transmission Project and the Blythe Energy Project Transmission Project, the two other transmission lines that would be in the DPV corridor.
4. Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:
  - a. **Reliability**
    - i. How many feet of separation from DPV1 would be required by SCE and/or WECC or the CAISO? Explain whether line separation is defined by rigid requirements or utility practice/preference.
    - ii. Describe the line separation that is expected to exist if DPV1, DPV2, Desert Southwest Transmission Project, and the 230 kV Blythe Energy Project Transmission Line are all constructed adjacent to DPV1.
    - iii. Describe the potential effect of a double-circuit tower on the line or path ratings.
  - b. **Tower Design**
    - i. Would double-circuit towers be of the style that now exists in the Copper Bottom Pass area along the DPV1 line?
    - ii. What would be the average height and tower spacing of double-circuit towers compared to the average height and tower spacing of the proposed single-circuit towers?
  - c. **Noise.** What would be the average corona noise at peak loading periods at a distance of 100 feet from the double-circuit towers? How does this compare to the corona noise from single-circuit towers at the same distance?
  - d. **Electric and Magnetic Fields.** What would be the average magnetic field (in milligauss) at peak loading periods at a distance of 100 feet from the double-circuit towers? How does this compare to the magnetic field from single-circuit towers at the same distance?

e. **Conductor Height and Bird Collision Potential.** What would be the average difference in conductor height from the ground between double- and single-circuit towers? What is the vertical extent of conductors near the towers in both design configurations? What effect would this have on the potential for bird collision?

f. **Cost.** What is the differential in cost between a single-circuit 500 kV tower and a double-circuit tower?

g. **Right-of-way Width.** Describe or illustrate the typical or desired ROW width for double-circuit towers when added to the existing DPV1 ROW. Explain the regulatory and environmental implications of acquisition of wider ROW in the line segment between Blythe (Midpoint Substation) and Devers Substation.

h. **Devers-Valley Segment.**

i. Could a 500 kV double-circuit line be constructed between Devers and Valley Substations? Explain constraints in this area.

ii. If there is not sufficient space in the Devers-Valley corridor for a third 500 kV circuit (installed as a double-circuit line adjacent to the existing single-circuit line), explain the likely path for power serving the southern California load center west of the Devers Substation, assuming development of several large solar projects east of Devers as well as imports from Arizona.

i. **Similar Towers.**

i. How many miles of double-circuit 500 kV line does SCE currently have in its transmission system? How many additional miles are proposed in the Tehachapi Renewable Transmission Project?

ii. If existing/proposed double-circuit 500 kV lines in the SCE system, please explain how they would differ in their reliability and/or environmental concerns from the DPV2 corridor.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** John Tucker

**Title:** Project Manager, Grid Contracts

**Dated:** 12/15/2008

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**Question 01:**

Please review SCE's responses to the Data Requests of August 12 and 13, 2008, and update them if any information has changed since the responses provided in late August.

**Response to Question 01:**

SCE has updated a portion of its response to Data Request ED-SCE-12 Question 04. Specifically, Attachment C to Question 04, entitled "New Generation Interconnection Requests in the Blythe Area", has been modified to show those projects in the Blythe area that have been considered withdrawn from the California Independent System Operator (CAISO) Queue since SCE's original response. Those projects that have been withdrawn are shown in the attachment hereto with a strike-through. Of the thirty (30) projects that were included in the original response in August 2008, seventeen (17) projects have been withdrawn. Accordingly, the total capacity requesting interconnection in the Blythe area has been reduced from 10,646 MW to 5,860 MW. The majority of these projects have been withdrawn as a result of the applicant's election not to proceed and participate in the CAISO Transition Cluster study. The Transition Cluster is the first queue cluster window under the CAISO's Generator Interconnection Process Reform ("GIPR") which now requires applicants to provide a \$250,000 study deposit and an additional \$250,000 deposit if the applicant cannot provide evidence of site control; a considerable increase from the pre-GIPR deposit requirements and a substantial commitment for a project that is not yet adequately defined and financed. Many of these withdrawn projects may, indeed, be viable projects and may re-apply for interconnection during the CAISO's next available queue cluster window. While the amount of generation capacity in the Blythe area requesting interconnection has decreased, the remaining 5,860 MW (4,650 MW of renewable generation) is significant and far exceeds the 1,200 MW of on-peak transmission capacity made available by DPV2.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC  
**Prepared by:** Mohan Kondragunta  
**Title:** Manager Project-Product  
**Dated:** 12/15/2008

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**Question 02a:**

DPV2 was originally proposed to allow import of lower cost electricity from Arizona's Palo Verde generation hub. The Petition to Modify requests that the California portion be constructed by itself (or before the Arizona portion, should it be approved in the future by the Arizona Corporation Commission), in order to support development of renewable energy projects in the general area between Blythe and Desert Center.

a. A.05-04-015 and its PEA state that the capacity of the single-circuit 500 kV DPV2 line would be 1,200 MW. Assuming that the Arizona segment is eventually permitted, how much of the capacity of the line is expected to be used by Arizona generators and how much by California renewable generators?

**Response to Question 02a:**

SCE and Arizona utilities are currently aware of many applications in both California and Arizona to connect new generation to this new line. The total capacity of these requests significantly exceeds the capacity of the new line and it is anticipated that enough of these projects will eventually materialize so that the line will be fully subscribed in the future. It is impossible to determine or speculate which of these interconnection requests will be first in successfully bidding into the various SCE solicitations, however, there is a significant amount of solar generation that would be capable of interconnecting at the Midpoint substation in California. Based on the timing and location of these new generators, the total amount of solar generation that would eventually be constructed could range from hundreds of MW to over 1,200 MW if the generation is built to serve loads in both California and Arizona. It is also impossible to determine which generator will provide power to California or Arizona without first knowing what resources will eventually be built.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Dana Cabbell

**Title:** Manager

**Dated:** 12/15/2008

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**Question 02b:**

DPV2 was originally proposed to allow import of lower cost electricity from Arizona's Palo Verde generation hub. The Petition to Modify requests that the California portion be constructed by itself (or before the Arizona portion, should it be approved in the future by the Arizona Corporation Commission), in order to support development of renewable energy projects in the general area between Blythe and Desert Center.

b. Could the capacity of DPV2 as a single circuit 500 kV line be expanded above the 1,200 MW path rating that was originally proposed? If so, what would the maximum capacity be? What equipment is required for capacity expansion, and where would it be located?

**Response to Question 02b:**

The DPV2 project is part of the East of the River Path (WECC Path 49) and West of the River Path (WECC Path 46). The 1,200 MW path rating is the amount Path 49 and Path 46 increased due to the addition of DPV2. The Path ratings could be increased due to DPV2 if the percent compensation of the series compensation is increased, however, this would take special technology called - Thyristor Controlled Series Capacitors (TCSC) to mitigate Sub-Synchronous Resonance (SSR) concern at the Palo Verde Nuclear Generating Station. In previous technical studies performed as System Impact Studies for an interconnection request into DPV2, it was shown that an additional 1,040 MW could be delivered with the TCSC technology. However, this was not vetted through WECC Path Rating Studies to determine the achievable path rating increase. The amount of path rating increase would need to be determined through technical studies. Any increase in the Path 49 and Path 46 path ratings will require other system equipment such as voltage support to achieve a new rating.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Dana Cabbell

**Title:** Manager

**Dated:** 12/15/2008

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**Question 02c:**

DPV2 was originally proposed to allow import of lower cost electricity from Arizona's Palo Verde generation hub. The Petition to Modify requests that the California portion be constructed by itself (or before the Arizona portion, should it be approved in the future by the Arizona Corporation Commission), in order to support development of renewable energy projects in the general area between Blythe and Desert Center.

c. Where would the point (or points) of interconnection be for the renewable generation projects in the Blythe/Desert Center areas to the DPV2 line? Would new substations be required?

**Response to Question 02c:**

The Master Plan for interconnecting the renewable generation projects to Midpoint Substation in the Blythe/Desert Center areas will be completed through the Transition Cluster Studies. These Transition Cluster Studies will determine additional interconnection facilities required to integrate the renewable projects in the Blythe/Desert Center areas. A specific Midpoint Substation site has been requested of the BLM in the attached letter dated 12-26-08.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** John Tucker

**Title:** Project Manager, Grid Contracts

**Dated:** 12/15/2008

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**Question 03:**

Please explain the status of the Desert Southwest Transmission Project and the Blythe Energy Project Transmission Project, the two other transmission lines that would be in the DPV corridor.

**Response to Question 03:**

The Desert Southwest Transmission Project is proceeding with the preparation and approval of its development plan in accordance with its Bureau of Land Management (BLM) Record of Decision dated September 15, 2006. The Desert Southwest Transmission Project submitted a draft of its development plan to the BLM in September 2008. It is SCE's understanding that one of the two 500kV circuits that would comprise the Desert Southwest Transmission Project is desired to be in service by year 2012 to connect proposed natural gas-fired generation to SCE's proposed Midpoint Substation.

Blythe Energy is proceeding with its proposed 67 mile 220kV transmission line to connect the existing 520 MW generating facility to SCE's Julian Hinds Substation. Blythe Energy has recently filed a Request for Approval of Third Insignificant Project Change with the California Energy Commission, and, following the approval of such petition, intends to commence construction of the line. Pursuant to the Large Generator Interconnection Agreement among SCE, the California Independent System Operator and Blythe Energy, the Blythe Energy 220kV transmission line is expected to be connected to SCE's Julian Hinds Substation on May 1, 2010.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Dana Cabbell

**Title:** Manager

**Dated:** 12/15/2008

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**Question 04a-i:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**a. Reliability**

i. How many feet of separation from DPV1 would be required by SCE and/or WECC or the CAISO? Explain whether line separation is defined by rigid requirements or utility practice/preference.

**Response to Question 04a-i:**

SCE would require at least 2000 feet centerline to centerline separation between the existing 500 kV tower-line and a new double circuit 500 kV tower-line. This has been based on utility practice until WECC recently established a definition for Common Corridor:

*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 into a substation.*

Based on the WECC definition of Common Corridor, the approximate separation (based on longest span length) between DPV1 and a double circuit structure on the California portion of DPV2 would be 2195 feet from Midpoint Substation to Devers Substation and 3097 feet from Devers Substation to Valley Substation.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Scott Lacy, P.E.

**Title:** Project Engineer

**Dated:** 12/15/2008

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**Question 04a-ii:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**a. Reliability**

ii. Describe the line separation that is expected to exist if DPV1, DPV2, Desert Southwest Transmission Project, and the 230 kV Blythe Energy Project Transmission Line are all constructed adjacent to DPV1.

**Response to Question 04a-ii:**

SCE does not have specific design standards depicting corridors with both single- and double-circuit tower lines, since this is not a configuration that would normally be requested, due primarily to reliability issues (see response to Question 4.a.i.)

However, if minimum working clearances based on Cal-OSHA standards were applied, the following separations (center-to-center of each tower) would be required:

Existing DPV1 single-circuit tower to new DPV2 double-circuit tower to: 120'

New DPV2 double-circuit tower to new Blythe Energy 230kV line: 90'

New Blythe Energy 230kV line to new DSTP 500kV single-circuit: 135'

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Dana Cabbell

**Title:** Manager

**Dated:** 12/15/2008

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**Question 04a-iii:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**a. Reliability**

iii. Describe the potential effect of a double-circuit tower on the line or path ratings.

**Response to Question 04a-iii:**

To evaluate the reliability of new double-circuit structures and the existing single-circuit structures within the existing ROW, SCE would sponsor new technical studies with the CAISO and the Western Electricity Coordinating Council (WECC). The simultaneous outage of these three 500 kV circuits may have significant and unacceptable consequences on system reliability, even if the electrical grid could be protected by implementing a Special Protection System (SPS). If the SPS does not fully mitigate the system reliability consequences, then the path rating would be limited to a value lower than the capability of the transmission lines.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Scott Lacy, P.E.

**Title:** Project Engineer

**Dated:** 12/15/2008

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**Question 04b-i:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**b. Tower Design**

i. Would double-circuit towers be of the style that now exists in the Copper Bottom Pass area along the DPV1 line?

**Response to Question 04b-i:**

SCE utilizes a somewhat limited "family" of double-circuit tower designs, so essentially, yes. However, the new towers would be slightly taller and heavier-duty than those existing in Copper Bottom Pass due to increase requirements for loading conditions and ground clearances, as well as the need to compensate for less-than-optimized span lengths (see response to Question 4.h.i.) Also, there would be certain applications justifying the use of heavy-duty turning or corner towers, which were unnecessary in the Copper Bottom Pass area.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Scott Lacy, P.E.

**Title:** Project Engineer

**Dated:** 12/15/2008

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**Question 04b-ii:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**b. Tower Design**

ii. What would be the average height and tower spacing of double-circuit towers compared to the average height and tower spacing of the proposed single-circuit towers?

**Response to Question 04b-ii:**

The average height of double-circuit towers for the DPV2 project would be approximately 235', and would range from a minimum of 145' to a maximum of 290'. In comparison, the single-circuit towers currently proposed range in height from 95' to 195', with an average of 140'.

If the DPV2 line were built using double-circuit towers, SCE would strive to locate the new towers with the same spacing as the existing DPV1 line, in order to minimize visual impacts of conductor spans with different frequency. Since this may not be the optimal spacing for this type of construction, it is likely that heavier-duty steel (i.e. thicker) would need to be utilized on these towers, adding to cost and the visual impact of the towers themselves. In comparison, optimized designs for new double-circuit tower lines often result in somewhat shorter spacing than new single-circuit lines primarily to reduce the mechanical forces of the conductor weight and tensions from the center and upper phases, which allows for reducing the quantity of steel required per tower and lessened tower heights.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Glenn Sias

**Title:** Manager

**Dated:** 12/15/2008

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**Question 04c:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**c. Noise.**

What would be the average corona noise at peak loading periods at a distance of 100 feet from the double-circuit towers? How does this compare to the corona noise from singlecircuit towers at the same distance?

**Response to Question 04c:**

Audible corona noise calculations were made using the Electric Power Research Institute's EMF Workstation 2008 software. Only the existing and proposed 500 kV transmission lines were included in the calculations. Calculations were made using minimum conductor clearances of 35 feet, line voltages of 535 kV, an altitude of 800 feet, 2156 kcmil ACSR conductors, and a calculation height of 1.5 meters. L50 rain condition values (the level where audible noise exceeds that value 50% of the time during rain conditions) were investigated.

The calculated L50 rain condition for the proposed single-circuit tower configuration at 100 feet from the nearest conductor is 54 dBA. The calculated L50 rain condition for the alternative double-circuit tower configuration at 100 feet from the nearest conductor is 56 dBA.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Glenn Sias

**Title:** Manager

**Dated:** 12/15/2008

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**Question 04d:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**d. Electric and Magnetic Fields.**

What would be the average magnetic field (in milligauss) at peak loading periods at a distance of 100 feet from the double-circuit towers? How does this compare to the magnetic field from single-circuit towers at the same distance?

**Response to Question 04d:**

Magnetic field calculations were made using assumed peak loads for single-circuit 500 kV transmission lines of 1,802 MW and assumed peak loads for double-circuit 500 kV transmission lines of 1,200 MW. Only the existing and proposed 500 kV transmission lines were included in the calculations. The calculated magnetic field level for the proposed single-circuit tower configuration at 100 feet from the nearest conductor is 27.9 milligauss (mG). The calculated magnetic field level for the alternative double-circuit tower configuration at 100 feet from the nearest conductor is 6.8 mG.

Please note that the calculated magnetic field results are provided only for purposes of identifying the relative differences in magnetic field levels among various transmission line design alternatives under a specific set of modeling assumptions. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location if and when the project is constructed.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC  
**Prepared by:** Gary Dudley and Jill Fariss  
**Title:** Environmental Coordinators  
**Dated:** 12/15/2008

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**Question 04e:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**e. Conductor Height and Bird Collision Potential.**

What would be the average difference in conductor height from the ground between double- and single-circuit towers? What is the vertical extent of conductors near the towers in both design configurations? What effect would this have on the potential for bird collision?

**Response to Question 04e:**

The single-circuit towers are designed to have a horizontal conductor configuration. The height of all three conductors at the tower for the single-circuit would be 120 feet above ground. A double-circuit tower is designed to have a vertical conductor configuration. There would be three different heights for the six conductors at the tower, the lowest being 110 feet above the ground, the middle being 147.5 feet above the ground, and the highest being 185 feet above the ground. Based on information provided in APLIC (1994), it is likely that the taller double-circuit 500kV lines would cause more avian collisions than the shorter single-circuit 500kV lines. The APLIC information suggests minimizing avian collision risk by minimizing the height of conductors and using a horizontal conductor configuration rather than vertical conductor configuration required for the double-circuit design configuration. Use of a horizontal conductor configuration serves to reduce the potential collision zone.

Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions With Power Lines: The State of the Art In 1994. Edison Electric Institute. Washington, D.C.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Marco Ahumada

**Title:** Project Manager

**Dated:** 12/15/2008

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**Question 04f:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**f. Cost.**

What is the differential in cost between a single-circuit 500 kV tower and a double-circuit tower?

**Response to Question 04f:**

SCE selects tower types from a family of towers based on loading and alignment requirements. Each tower type within the family of towers can change in height depending on terrain and ground clearance needs. Also, on a per-mile basis, the number of towers needed for a single-circuit or double-circuit transmission line may not be the same even for the same right-of-way. These factors greatly affect the cost of the towers. Therefore, a simple comparison between single-circuit towers and double-circuit towers is not recommended. However, on a per-mile basis, the cost for constructing a double-circuit transmission line is approximately two to three times the cost of constructing a single-circuit transmission line. Please note, this simple cost comparison does not take into account real estate costs (e.g., costs for rights-of-way).

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Scott Lacy, P.E.

**Title:** Professional Engineer

**Dated:** 12/15/2008

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**Question 04g:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**g. Right-of-way Width.**

Describe or illustrate the typical or desired ROW width for doublecircuit towers when added to the existing DPV1 ROW. Explain the regulatory and environmental implications of acquisition of wider ROW in the line segment between Blythe (Midpoint Substation) and Devers Substation.

**Response to Question 04g:**

See response to Question 4.a.ii. From a purely technical standpoint, the ROW width for a double-circuit tower adjacent to an existing single-circuit tower (instead of a new single-circuit tower) would actually be reduced from 130' (center-to-center measurement) to 120', so there would be no need to acquire a wider ROW.

However, considering the response to Question 4.a.i and the need to avoid a "common corridor" situation, acquiring a new ROW over 2000' away from the existing ROW between Midpoint and Devers Substations would likely have a myriad of regulatory and environmental implications, ranging from additional private party acquisitions to incompatible land uses to visual impacts (including the need to construct an entirely new network of access roads) to potential archeological impacts in new areas, etc.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Scott Lacy, P.E.

**Title:** Project Engineer

**Dated:** 12/15/2008

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**Question 04h-i:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**h. Devers-Valley Segment.**

i. Could a 500 kV double-circuit line be constructed between Devers and Valley Substations? Explain constraints in this area.

**Response to Question 04h-i:**

Strictly from a transmission tower design perspective, it may be feasible, though certainly not practical, to construct a new double-circuit tower line where the currently proposed single-circuit tower line would be located (i.e. immediately south of the existing line). However, the cost and schedule for this type of construction in this area would be significantly greater than the current proposal.

The most significant construction constraints along this path would be the increased difficulty to the helicopter-supported construction methods already anticipated in the mountainous area between Snow Creek and Cabazon. The heavier and taller towers would require larger helicopters and increase the safety concerns of the construction crews.

In addition, the double circuit towers would require significantly deeper foundations. Along the steep terrain within the approved right-of-way between Snow Creek and Cabazon, it may not be practical to excavate these deeper footings without impacting the foundations constructed for the existing Devers-Valley #1 500kV transmission line.

Environmentally, there are at least two major constraints along the route. The first would be the visual impact of these taller & stouter towers through the San Bernardino National Forest across the Pacific Coast Trail. The second would be the biological impact of the elevated conductor spans (i.e. the upper two phases) on the avian migration path along the Ramona Expressway in the San Jacinto Valley area (increase bird strike potential), whereas a new single-circuit line would not change the existing condition resulting from the existing 500kV line through that area.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Dana Cabbell

**Title:** Manager

**Dated:** 12/15/2008

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**Question 04h-ii:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**h. Devers-Valley Segment.**

ii. If there is not sufficient space in the Devers-Valley corridor for a third 500 kV circuit (installed as a double-circuit line adjacent to the existing single-circuit line), explain the likely path for power serving the southern California load center west of the Devers Substation, assuming development of several large solar projects east of Devers as well as imports from Arizona.

**Response to Question 04h-ii:**

SCE is evaluating the expansion along the 230 kV transmission line corridor west of Devers Substation to include additional 500 kV lines to deliver the solar projects east of Devers Substation to the SCE load center.

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Scott Lacy, P.E.

**Title:** Project Engineer

**Dated:** 12/15/2008

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**Question 04i-i:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**i. Similar Towers.**

i. How many miles of double-circuit 500 kV line does SCE currently have in its transmission system? How many additional miles are proposed in the Tehachapi Renewable Transmission Project?

**Response to Question 04i-i:**

Currently there are approximately 50 miles of double-circuit 500kV line in operation throughout SCE's transmission system (out of a total inventory of approximately 1,350 miles of 500kV lines in service) .

As currently proposed, the TRTP project (e.g. the combination of ATP segments 1-3 and TRTP segments 4-11) includes the construction of approximately 55 miles of new double-circuit 500kV line (out of a total length of approximately 250 miles of new 500kV line to be built as part of that combined project scope).

*Southern California Edison*  
**Devers-Palo Verde Project No. 2 A.05-04-015**

**DATA REQUEST SET ED-SCE-13**

**To:** ENERGY DIVISION - CPUC

**Prepared by:** Scott Lacy, P.E.

**Title:** Project Engineer

**Dated:** 12/15/2008

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**Question 04i-ii:**

Please discuss the potential for DPV2 to be constructed as a double-circuit 500 kV line, and address the following specific issues:

**i. Similar Towers.**

ii. If existing/proposed double-circuit 500 kV lines in the SCE system, please explain how they would differ in their reliability and/or environmental concerns from the DPV2 corridor.

**Response to Question 04i-ii:**

There is no difference in structural reliability between the double-circuit towers used in the transmission lines discussed in the response to Question 4.i.i and any towers that would be construction in the DPV2 corridor.

The system reliability issues related to the lines discussed in Question 4.i.i also would not differ from the DPV2 corridor. System reliability is determined through technical studies. The performance requirements in the NERC/WECC Reliability Standards do not differentiate between two adjacent single-circuit structures, or one double-circuit structure. The technical studies would need to evaluate the loss of two transmission lines within a Common Corridor and develop mitigation plans if Reliability Standard violations are identified.

Environmental concerns of any particular transmission line, whether built using single- or double-circuit designs, are so strongly dependent upon local conditions that they are virtually impossible to compare to any meaningful level to a transmission line built in an entirely different area.

**New Generation Interconnection Requests in the Blythe Area**

Queue Date	Queue Position	Summer Capacity	Station or Transmission Line (Per CAISO Queue)	Interconnection Request Receive Date	Type	Fuel	Renewable	Application Status	County	State	Utility	Proposed On-line Date (as filed with IR)	Current On-line Date	Feasibility Study (IFS)	System Impact Study (SIS)	Facility Study (FAS)	Interconnection Agreement Status
3/18/2003	17	520	Devers-Palo Verde 500 kV line near Blythe	3/18/2003	CC	NG	No	Active	Riverside	CA	SCE	1/1/2006	6/1/2008	NA	Complete	Complete	In Progress
11/16/2006	146	150	Eagle Mountain Substation	11/16/2006	PV	S	Yes	Active	Riverside	CA	SCE	12/1/2008	12/1/2008	Complete	In Progress		
11/16/2006	147	400	Eagle Mountain Substation	11/16/2006	PV	S	Yes	Active	Riverside	CA	SCE	2/1/2010	2/1/2010	Complete	In Progress		
<del>3/1/2007</del>	<del>179</del>	<del>300</del>	<del>Julian Hinds 230kV Substation</del>	<del>2/15/2007</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>San Bernardino</del>	<del>CA</del>	<del>SCE</del>	<del>12/31/2010</del>	<del>12/31/2010</del>	<del>In Progress</del>			
4/4/2007	193	500	Julian Hinds 230kV Substation	3/19/2007	ST	S	Yes	Active	Riverside	CA	SCE	12/31/2010	12/31/2010	In Progress			
5/3/2007	210	600	Eagle Mountain Substation	5/3/2007	PV	S	Yes	Active	Riverside	CA	SCE	12/31/2011	12/31/2011	In Progress			
5/23/2007	219	50	Midpoint switching station	5/7/2007	CT	NG	No	Active	Riverside	CA	SCE	6/1/2012	6/1/2012	In Progress			
6/4/2007	225	640	500kV line to the new Midpoint switching station	5/23/2007	CC	NG	No	Active	Riverside	CA	SCE	6/1/2012	6/1/2012	In Progress			
<del>7/16/2007</del>	<del>245</del>	<del>228</del>	<del>Devers-Mirage-Julian Hinds 230kV line</del>	<del>7/16/2007</del>	<del>WT</del>	<del>W</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>12/15/2010</del>	<del>12/15/2010</del>	<del>In Progress</del>			
<del>8/1/2007</del>	<del>251</del>	<del>200</del>	<del>Eagle Mountain-Blythe 161kV line</del>	<del>8/1/2007</del>	<del>PV</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>12/15/2009</del>	<del>12/15/2009</del>	<del>In Progress</del>			
11/1/2007	270	700	Proposed Midpoint Substation 230kV	11/1/2007	PV	S	Yes	Active	Riverside	CA	SCE	12/1/2011	12/1/2011	Tendered			
1/16/2008	294	1000	Midpoint Substation 500kV	1/15/2008	ST	S	Yes	Active	Riverside	CA	SCE	6/1/2012	6/1/2012	Tendered			
<del>5/2/2008</del>	<del>361</del>	<del>200</del>	<del>Blythe-Eagle Mountain 161kV line</del>	<del>5/2/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>8/30/2012</del>	<del>8/30/2012</del>				
<del>5/2/2008</del>	<del>362</del>	<del>300</del>	<del>Midpoint Substation</del>	<del>5/2/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>8/30/2012</del>	<del>8/30/2012</del>				
5/12/2008	365	750	Midpoint Substation	5/6/2008	ST	S	Yes	Active	Riverside	CA	SCE	12/28/2013	12/28/2013				
<del>5/16/2008</del>	<del>369</del>	<del>1300</del>	<del>Midpoint Substation 500kV</del>	<del>5/16/2008</del>	<del>H</del>	<del>WTR</del>	<del>No</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>6/1/2014</del>	<del>6/1/2014</del>				
<del>5/30/2008</del>	<del>410</del>	<del>49.5</del>	<del>Midpoint Substation 500kV</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>8/1/2012</del>	<del>8/1/2012</del>				
<del>5/30/2008</del>	<del>411</del>	<del>49.5</del>	<del>Midpoint Substation 500kV</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>8/1/2012</del>	<del>8/1/2012</del>				
<del>5/30/2008</del>	<del>415</del>	<del>280</del>	<del>Devers-Palo Verde 500 kV line</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>8/1/2012</del>	<del>8/1/2012</del>				
<del>5/30/2008</del>	<del>416</del>	<del>280</del>	<del>Midpoint Substation 230kV</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>8/1/2012</del>	<del>8/1/2012</del>				
5/30/2008	421	49.5	Eagle Mountain Substation	5/30/2008	ST	S	Yes	Active	Riverside	CA	SCE	2/1/2012	2/1/2012				
<del>5/30/2008</del>	<del>422</del>	<del>49.5</del>	<del>Camino-Iron Mountain 230kV line</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>2/1/2012</del>	<del>2/1/2012</del>				
<del>5/30/2008</del>	<del>423</del>	<del>49.5</del>	<del>Camino-Iron Mountain 230kV line</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>2/1/2012</del>	<del>2/1/2012</del>				
<del>5/30/2008</del>	<del>425</del>	<del>250</del>	<del>Colorado River Substation</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>7/1/2014</del>	<del>7/1/2014</del>				
<del>5/30/2008</del>	<del>428</del>	<del>250</del>	<del>Eagle Mountain Substation</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>San Bernardino</del>	<del>CA</del>	<del>SCE</del>	<del>7/1/2014</del>	<del>7/1/2014</del>				
5/30/2008	432	250	Iron Mountain Substation	5/30/2008	ST	S	Yes	Active	San Bernardino	CA	SCE	7/1/2014	7/1/2014				
<del>5/30/2008</del>	<del>433</del>	<del>250</del>	<del>Iron Mountain Substation</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>San Bernardino</del>	<del>CA</del>	<del>SCE</del>	<del>5/29/2015</del>	<del>5/29/2015</del>				
5/30/2008	435	250	Palo Verde-Devers #2 line	5/30/2008	ST	S	Yes	Active	La Paz	AZ	SCE	7/1/2014	7/1/2014				
<del>5/30/2008</del>	<del>439</del>	<del>500</del>	<del>Midpoint Substation</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>12/31/2011</del>	<del>12/31/2011</del>				
<del>5/30/2008</del>	<del>449</del>	<del>250</del>	<del>Midpoint Substation 500kV</del>	<del>5/30/2008</del>	<del>ST</del>	<del>S</del>	<del>Yes</del>	<del>Active</del>	<del>Riverside</del>	<del>CA</del>	<del>SCE</del>	<del>7/1/2012</del>	<del>7/1/2012</del>				
<b>Total Summer Capacity</b>		<b>10,646</b>	<b>5,859.5</b>														

**Source:**

California ISO Interconnection Queue as of 7/25/2008.

Queue project #435, located in La Paz County, AZ, has requested interconnection at Midpoint and has thus been included in this table.

December 26, 2008

United States Department of the Interior  
Bureau of Land Management  
Palm Springs South Coast Field Office  
690 W. Garnet Ave.  
North Palm Springs, CA 92258-1260

Attn: John Kalish

Subject: Southern California Edison's Preferred Location of Midpoint Substation

Southern California Edison Company (SCE) holds a Right-of-Way Grant issued in August 1989 by the Bureau of Land Management (BLM) for the Devers-Palo Verde No. 2 (DPV2) Transmission Line Project. On May 20, 2005, SCE filed an application for an amendment to permits CA 17905 and AZ 23805, as part of its renewed licensing effort for DPV2. The application for amendment includes a request to construct Midpoint Substation<sup>1</sup> adjacent to SCE's DPV2 Right-of-Way at one of two potential locations identified in CPUC Decision D.07-01-040 and the DPV2 Final Environmental Impact Report / Environmental Impact Statement (FEIR/EIS).<sup>2</sup>

On May 14, 2008, SCE filed a Petition to Modify (Petition) the existing Certificate of Public Convenience and Necessity (CPCN) approved per Decision D.07-01-040 issued by the California Public Utilities Commission (CPUC) on January 25, 2007.<sup>3</sup> SCE's

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<sup>1</sup> The Midpoint Substation scope of work is initially planned as a transmission switchyard ("Midpoint Switchyard"), which includes the electrical facilities and associated equipment necessary to construct a 500 kV switchrack to terminate the Devers-Palo Verde No. 1 transmission line and DPV2. The Midpoint Switchyard would not initially include transformers, though they may later be added to interconnect future generators and transmission lines. The "Midpoint Switchyard" is referred to as "Midpoint Substation" in the Final EIR/EIS, and will be referred to as "Midpoint Substation" hereinafter. See Final EIR/EIS, Vol. 1, Section C.4.4.1, p. C-20.

<sup>2</sup> The Final EIR/EIS evaluated two proposed locations: (a) SCE's Midpoint Substation, and (b) Desert Southwest Transmission Project's (DSWTP) Midpoint Substation approximately five miles from SCE's location. The DSWTP Midpoint substation is described as "Midpoint-DSW Substation," in p.2 of the CPUC Decision D.07-01-040 and "Midpoint" in Footnote 6 on p.C-20 of DPV2's Final EIR/EIS. The approximate location is provided in Figure 2-3 of DSWTP's Final EIR/EIS.

<sup>3</sup> SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) PETITION FOR MODIFICATION OF DECISION NO. 07-01-040. SCE filed its Petition to construct the California portion of DPV2 to position itself to take advantage of potential generation sources (a significant portion of which are renewable) which

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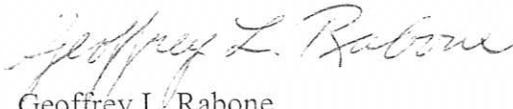
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Petition requests permission to construct the California portion of DPV2, including Midpoint Substation. Approval of SCE's Petition is expected in the first quarter of 2009.

SCE now requests BLM authorization to construct Midpoint Substation at what is commonly referred to as the Midpoint-DSW Substation location.<sup>4</sup> This location is consistent with SCE's Petition with the CPUC and should allow the greatest flexibility for interconnection of generation resources in the area near Blythe, California. The proposed Midpoint-DSW Substation site is located approximately 110 circuit miles from Devers Substation, north of the DPV2 Right-of-Way, primarily within APN 879-080-025 on the Southeast 1/4 of Section 6, Township 7 South, Range 21 East.

If you have any questions or need additional information, please call me at (626) 302-1460.

Sincerely,



Geoffrey L. Rabone  
Government Lands Manager  
Southern California Edison

Cc: Holly Roberts (Palm Springs Office)  
Claude Kirby (Palm Springs Office)  
Robert Mooney, DSWTP  
John Tucker, SCE

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have requested interconnection to the California Independent System Operator ("CAISO") grid in the Blythe area.

<sup>4</sup> In a comment on the Draft EIR/EIS, the DSW proponents asked that the CPUC and BLM consider designation of this substation location as an acceptable location for SCE to interconnect with the DSW transmission line. As stated in the Final EIR/EIS, Vol. 2, Section E.2.1.3, p. E-12 (Proposed Project vs. Desert Southwest Transmission Project Alternative), the two substation sites are considered to be "comparable, and equally environmentally superior/preferable."]

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