

***SOUTHERN CALIFORNIA EDISON COMPANY***

**Docket No. A.06-08-010**

**(Sunrise Powerlink Transmission Line Project & LEAPS Alternative)**

**Responses to CPUC/BLM Data Request**

**No. SCE-1**

**Dated: January 26, 2007**

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1 **Question No. SCE-1:**

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3 We are aware that SCE provided the Nevada Hydro Company with a Facilities  
4 Study in December of 2006. Our analysis of the LEAPS alternative requires assessment  
5 of how that project would affect transmission system reliability, and whether it would  
6 require other upgrades to the SCE system that should be considered in our environmental  
7 assessment. As a result, we request that you provide me with a copy of that study, both  
8 in electronic version and in hard copy. The document may be submitted under Public  
9 Utility Code Section 583, which will bind CPUC staff and consultants to confidentiality  
10 regarding its contents.

11  
12 **Response to Question No. SCE-1:**

13  
14 SCE encloses a copy of the preliminary Facilities Study for the interconnection of  
15 the Lake Elsinore Advanced Pumped Storage Project that was provided to Nevada Hydro  
16 Company on December 1, 2006. SCE requests that the Commission maintain the  
17 confidentiality of the Study and submits it under the provisions of P. U. Code Section 583  
18 and General Order 66c. The Facilities Study is preliminary because although SCE has  
19 received comments from Nevada Hydro Company, comments have not been received  
20 from the CAISO and a Facilities Study review meeting has not been held.

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**No. SCE-2**

**Dated: February 15, 2007**

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1 **Question No. SCE-2:**

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3 In its study of the "Sun Path Project" dated July 28, 2006, CAISO found that in  
4 order to increase the South of SONGS path rating, SCE's Barre-Ellis 230 kV line would  
5 need to be upgraded for the loss of SCE's Del Amo-Ellis 230 kV line. According to that  
6 report, this line is a limiting factor for the South of SONGS path. Parties in the CPUC  
7 proceeding for SDG&E's Sunrise Powerlink project believe that increasing the South of  
8 SONGS import limit to the SDG&E territory may be one partial alternative to Sunrise  
9 Powerlink. According to the CPUC proceeding for the SONGS Steam Generator  
10 Replacement Project, upgrading Barre-Ellis would apparently require increasing the  
11 weight bearing capability of the tower system with "interset-towers" (Ex. SCE-5,  
12 Witness: P. Arons, A.04-02-026, pp. 15 and 25, February 2004). Parties have also  
13 identified looping SCE's existing 220 kV system into Talega as a possible way to  
14 increase the South of SONGS import limit to SDG&E.

- 15 1.) Please describe the physical changes to the SCE transmission system that  
16 would need to occur in order to upgrade the Barre-Ellis 230 kV line for the  
17 loss of the Del Amo-Ellis 230 kV line. This description should include the  
18 following information:
- 19 a. Text describing the route of the line, tower design, substation changes,  
20 and construction timetable.
- 21 b. Information on any additional towers, current and ultimate corridor  
22 design, and construction activities.
- 23 c. Maps and GIS files for the transmission line route, including data on  
24 right-of-way width, tower locations, substations, etc.
- 25 2.) Please describe how the capacity of the Barre-Ellis 230 kV line could be  
26 increased above its 1195 MVA normal rating (described in the CAISO Sun  
27 Path Project study) by using high-temperature low-sag or composite  
28 material conductors.
- 29 3.) Please describe the physical changes to the transmission system that would  
30 need to occur in order to loop the Viejo-SONGS 220 kV line into the Talega  
31 Substation to create a Viejo-Talega line and a Talega-SONGS line. This  
32 description should include the following information:
- 33 a. Text describing the location of the line, tower changes, substation  
34 changes, and construction timetable.

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1           b. Information on any additional towers, current and ultimate corridor  
2           design, and construction activities.

3           c. Maps and GIS files for the transmission line route, including data on  
4           right-of-way width, tower locations, substations, etc.  
5

### **Response to Question No. 2:**

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7  
8           1a.) The Barre – Ellis 230 kV transmission line has a total length of 13  
9 miles, all of which lie within the County of Orange. The line has a general  
10 direction of north to south. The line currently uses a variety of towers to  
11 support the existing parallel 1033 ACSR conductor. To upgrade the line, SCE  
12 would utilize parallel 1590 ACSR conductor as it is the next higher rated  
13 conductor type SCE uses. Substation changes and construction timetables  
14 have not been developed, since SCE has no current plans to upgrade the  
15 Barre-Ellis 230 kV transmission line. Therefore, no engineering analysis has  
16 been performed, from which substation changes and construction timetables  
17 would be identified and prepared.  
18

19           1b.) To upgrade this line using the parallel 1590 ACSR conductor,  
20 interset towers would be required. However, there is no information available  
21 on the number of additional towers required, the current and ultimate  
22 corridor design and the construction activities for this upgrade, since SCE  
23 has no current plans to upgrade the line and as described in the response to  
24 question 1a, engineering analysis has not been performed.  
25

26           1c.) A map of the line corridor is included showing existing streets and  
27 highways. The right of way width for the line corridor is ranges between 120'  
28 - 150' throughout the corridor.  
29

30           2.) SCE would like to address a discrepancy in the question. The  
31 existing Barre-Ellis 230 kV transmission line has a normal rating of 988  
32 MVA. The question refers to this line having a 1195 MVA rating.  
33

34           The high-temperature low-sag or composite conductors referred to in the question  
35 usually increase the normal rating of the line in question by approximately 15%. To  
36 evaluate the use of newer conductor technology, an extensive engineering study would be  
37 required for the line in question, due to the different structures used throughout the line.

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1 These studies usually involve vendor participation due to the customized nature of each  
2 line. Therefore, the normal, N-1 and N-2 ratings for nonstandard conductor types are not  
3 set quantities. The ratings are determined from the transmission line's sag-tension  
4 requirements and conductor types are proposed by the vendor.  
5

6 SCE does not utilize these technologies on our lines for multiple reasons. With the  
7 use of ACSS conductor, there are less desired attributes such as higher cost and increased  
8 electrical losses. The increased losses through the line occur because it operates at a  
9 higher temperature. With composite technologies the conductor lacks durability, is not  
10 very flexible and has very limited applications.  
11

12 3a.) The existing SONGS – Viejo 230 kV transmission line has a total  
13 length of 22 miles, which lie within the County of Orange and the County of  
14 San Diego. The line has a general direction of north to south. The line  
15 currently uses a variety of towers to support the existing bundled 1590 ACSR  
16 conductor. Substation changes and construction timetables have not been  
17 developed since SCE has no plans currently to loop the SONGS - Viejo 230 kV  
18 transmission line into SDG&E's Talega Substation. Therefore, no engineering  
19 analysis has been performed from which substation changes and construction  
20 timetables are identified and prepared.  
21

22 3b.) To modify this line as described in the question, more towers  
23 would be required to loop-in the SONGS – Viejo 230 kV line into SDG&E's  
24 Talega Substation. However, SCE has not engineered this alternative;  
25 therefore no specific information is available on the number of additional  
26 towers, current and ultimate corridor design and construction activities.  
27

28 3c.) A map of the line corridor is included showing existing streets and  
29 highways. The right of way width for the line corridor is 200' throughout the  
30 corridor.  
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