

Southern California Edison
Presidential Substation Project A.08-12-023

DATA REQUEST SET Presidential ED-03 (Part 1)

To: CPUC

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Title: Field Engineering Project Manager

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Question 41:

Alternatives

Substation Target Area – As requested via email from Lynne Mosley to SCE on May 8, 2009, provide further clarification on how the Substation Target Area was defined. In particular, can SCE provide technical justification for the geographic extent of the Substation Target Area?

Response to Question 41:

The Substation Target Area was defined by reviewing the Electrical Needs Area (the area covered by those customers served from Potrero, Royal, and Thousand Oaks Substations), and trying to optimize the placement of new substation capacity. The intent of the new substation capacity is to offload existing load from these three substations in a way that improves reliability and voltage regulation. The technical goals of placing a new substation in the centrally located Substation Target Area allows SCE to connect to at least three existing 16 kV distribution circuits fed from three distinct substations that currently converge in the Substation Target Area. By connecting three of the new 16 kV distribution circuits emanating from the proposed Presidential Substation, the N-1 (loss of the largest transformer or component at any of the three substations or at the new Presidential Substation) plan can readily be met. The three existing 16 kV distribution circuits will also become shorter as load is transferred to the new 16 kV distribution circuits. As a result, the reliability of these circuits will improve as there will be fewer customers on these circuits than before and these customers would be exposed to fewer potential faults. Shorter circuits also facilitate SCE's compliance with the CPUC voltage regulation requirements. SCE strives to limit its distribution circuits to a length of 3 - 5 miles in heavily loaded urban areas in order to comply with the goals stated above.

SCE was presented with severe geographical challenges that had to be overcome in order to satisfy the technical requirements stated above. These challenges led SCE to describe the boundaries of the Substation Target Area as shown on Figure 1.1 of the PEA (Electrical Needs Area). One challenge was that, at ultimate build-out, the substation site needs to be close enough to the existing distribution circuits to allow for approximately 12 distribution circuits to connect to the cities of Thousand Oaks and Simi Valley. Another challenge is that SCE needs public rights-of-way in order to connect these distribution circuits and Olsen Road and Madera Road are the only roads that directly connect the cities of Thousand Oaks and Simi Valley.

Consequently, these roads helped to delineate the northern boundary of the Substation Target Area. Going much further north beyond Olsen and Madera roads introduces many of the geographical constraints defined in Section 2.2.1 of the PEA. The western boundary was generally defined, as the State Highway 23 because going much further beyond would put SCE in land occupied for recreational purposes. The eastern and southern boundaries were generally defined by the need to be close enough to Olsen and Madera Roads for the reasons described above.