

Southern California Edison
MESA PTC A.15-03-003

DATA REQUEST SET A1503003 ED-SCE-05

To: ENERGY DIVISION
Prepared by: Scott Lacy, P.E.
Title: Project Engineer
Dated: 09/18/2015

Question 02.c:

A study, using SCE-provided data, demonstrates that one 500-kV transformer bank at a 500-kV Mesa Substation would address low voltage in the Serrano corridor following an outage of the Eco-Miguel 500-kV Transmission Line followed by an outage of the Ocotillo-Suncrest 500-kV Transmission Line (“500-kV N-1-1 contingency”). Refer to the study in Attachment 2. Provide the following information about a reduced substation alternative that would consist of one 500-kV transformer bank:

- C. Would it be feasible to loop in the Mira Loma–Vincent 500-kV transmission line and connect the new, one-transformer, 500-kV substation to the existing 220-kV substation in this configuration? Explain why or why not.

Response to Question 02.c:

Based on SCE's reply to Data Request Question 2.A, this question is moot as a single transformer bank would NOT meet NERC, WECC, and CAISO reliability standards.

However, there is NOT sufficient space available west of the existing 230 kV substation to loop in the Mira Loma-Vincent 500 kV transmission line to this hypothetical 500/230 kV substation arrangement and maintain necessary clearances to the other existing 230 kV lines that traverse the site. It would be necessary to extend the existing 500 kV transmission line approximately 1,000 feet west of its current termination, which would require that line to either cross over several existing 230 kV transmission lines that currently exit from the south side of the existing substation or a complete rearrangement of those 230 kV transmission lines near the existing switchrack in order to provide sufficient space for all of the lines to be built in proximity to each other. Also, additional 230 kV transmission lines exit from the north side of the existing substation and then head west, creating additional congestion where the 230 kV transformer bank leads would have to be installed between the single transformer bank and the 230 kV switchrack. These lines would also require significant rearrangement in order to provide sufficient space for this scenario.

In addition, this scenario does not take into consideration the scope identified in the Proposed Project to loop in the existing Goodrich-Laguna Bell and Laguna Bell-Rio Hondo 230 kV transmission lines into the rebuilt Mesa Substation, which will require four additional line

positions to be available in the 230 kV switchrack. There are currently not enough vacant positions in the existing 230 kV switchrack to add five new terminations (one for the transformer bank and four for the newly looped in lines). This would mean that a complete rebuild of the existing 230 kV switchrack is necessary no matter how many transformer banks are installed as part of the Proposed Project.