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

DATA REQUEST SET A1503003 ED-SCE-02 Follow-Up

To: ENERGY DIVISION
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Dated: 08/06/2015

Question 02.A (05-01):

In its response to Data Request #2, SCE stated it could not import additional energy into the Western Los Angeles Basin without the Mesa Project.

It is understood that Lugo Substation provides the main connection between the Western Los Angeles Basin and the PG&E service territory and the Pacific Northwest via the 500-kV bulk transmission system. The Lugo Substation is connected to the Mesa Substation with 220-kV connections.

CPUC's examination of power flow data found that the 220-kV connections between Lugo Substation and Mesa Substation would not experience overloads and therefore would be capable of delivering enough energy to meet load in the Western Los Angeles Basin at SCE's projected need date for the proposed project.

Please provide the following information:

A. State when (i.e., what year or what range of years) SCE anticipates that the existing 220-kV connections between Lugo Substation and Mesa Substation will become overloaded and be unable to provide enough energy to serve load in the Western Los Angeles Basin.

Response to Question 02.A (05-01):

In order to clarify the statements above, SCE notes the following information. Lugo Substation is not directly connected to Mesa Substation via 220 kV transmission lines. Furthermore, while Lugo is one of SCE's major 500 kV substations, Vincent Substation is SCE's 500 kV main point of interconnection with PG&E. Vincent does have 220 kV connections to Mesa and therefore SCE is assuming that the question refers to Vincent Substation rather than Lugo.

While the 220 kV connections from Mesa – Vincent are not loaded at their maximum capacity, these connections are not the limiting constraint on increased imports of energy to serve load in the Western LA Basin. With the current system configuration, the limiting gateway to import power into the Western LA Basin consists of the following lines emanating westward from Serrano substation; referred to as the "Serrano Corridor."

[1] Lewis – Serrano 220 kV No. 1
[2] Lewis – Serrano 220 kV No. 2
[3] Serrano – Villa Park 220 kV No. 1
[4] Serrano – Villa Park 220 kV No. 2

In addition to the critical 500 kV contingency described in response to Question 4C, there is a local contingency within the Serrano Corridor which also limits the ability to import additional energy to provide service to load in the Western LA Basin. This contingency is described on page 2-4 of the PEA and consists of an N-1-1 outage of the Lewis-Serrano No. 1 230 kV Transmission Line followed by an outage of the Serrano-Villa Park No. 2 230 kV Transmission Line which causes a thermal overload on the Serrano- Villa Park No. 2 230 kV Transmission Line. The Proposed Project extends the 500 kV transmission network providing an additional path for power to flow into the Western LA Basin from the North, relieving the Serrano Corridor.

The following subparts are answered based on this understanding.

A. As stated above, the 220 kV corridor from Vincent to Mesa is not the limiting constraint on the ability to import enough energy to serve load in the Western Los Angeles Basin. Without the Proposed Project in service by January 2021, due to retirement of OTC generation at the end of 2020, lines in the Serrano Corridor would overload following a contingency. The line loading following the most limiting contingency in the Serrano Corridor is described in response to Question 5 Part C.