TURN DATA REQUEST
TURN-SDG&E-DR-01
SDG&E LTPP – TRACK 4 - R.12-03-014
SDG&E RESPONSE
DATE RECEIVED: SEPTEMBER 4, 2013
DATE RESPONDED: SEPTEMBER 17, 2013

14. Provide the following information about the "WECC-certified load shedding scheme" cited at Jontry, 7:1-3:
    a. Provide a copy of the cited "WECC-certified load shedding scheme".
    b. Describe how the load shedding scheme would be used in practice to mitigate the specific N-1-1 contingency, including which customers would be affected, how much notice such customers would have before their service would be interrupted, and how long such customers' service would be affected.

SDG&E Response 14:

a. The Path 44 South of SONGS Safety Net ("Safety Net") protects the system from the overlapping outage of the two-500kV lines between Imperial Valley and the San Diego load center (*i.e.* the Sunrise Powerlink and the Imperial Valley-Miguel sections of the Southwest Powerlink). The outage of these two lines may increase the flow on Path 44 above its safe operating point. To protect against this, the Safety Net will automatically shed SDG&E load, thereby reducing the Path 44 flow to a safe operating level. The Safety Net was designed consistent with the WECC Remedial Action Scheme Design Guide, and was approved by the WECC Remedial Action Scheme Reliability Subcommittee (RASRS) on November 28, 2012.[1] The objective of the NERC, WECC and CAISO reliability criteria is to ensure that systems are being developed to meet projected load. These criteria gage system performance following a contingency to measure the performance of the system in question. In particular, NERC standards TPL-003-0b2[2] and TPL-004-0a3[3] define acceptable performance levels for different categories of system events and as shown on Table I of the standards, load shedding is permitted to protect the system following the overlapping outage of two transmission lines. In brief, using the Safety Net to protect the system by shedding load is an appropriate tool for maintaining reliability and is consistent with the NERC, WECC and CAISO reliability requirements.

b. In practice, the Safety Net Special Protection Scheme ("SPS") would be armed when both the Southwest Powerlink and Sunrise Powerlink are both in service. The Safety Net monitors flow on the five Path 44 230 kV lines (South of SONGS). When the flow on the five lines exceeds a level determined to place the system at risk of voltage collapse, due to the loss of the Southwest Powerlink and the Sunrise Powerlink, the SPS would sequentially shed two blocks of approximately 500 MW of load in north

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1 The Safety Net was approved pending the results of a system study showing that the effects of inadvertent operation did not result in a condition worse than Category C. Draft minutes from the July 23, 2013 RASRS meeting document that system studies were presented which showed no issues with bus voltages following an inadvertent operation of the Safety Net. The Path 44 South of SONGS Safety Net was approved with no further discussion or objections by RASRS at that meeting.

2 Table I, Category C3.

3 Table I, Category D7.

Response to Question 14 (Continued)

San Diego County and southern Orange County, reducing the flow on Path 44 to a level sufficient to prevent voltage collapse. The load shedding could occur without notice and time to restore load would depend on system conditions. After the initial load shed, SDG&E can then move to rotational outages across the entire service territory and restore the customers initially affected. This approach allows SDG&E to selectively turn off power to circuits which do not serve hospitals, police stations, etc. until system conditions allow us to restore all customers.