

POWERS ENGINEERING COMMENTS ON ISO CONCURRENT REVIEW OF PLANNING STANDARDS, 2014-2015 TRANSMISSION PLANNING

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I. INTRODUCTION

The California Independent System Operator (“ISO”) indicated in its February 27, 2014 PowerPoint presentation on the 2014-2015 Transmission Planning process that the process includes a concurrent review of ISO planning standards, specifically the historical consideration of load shedding for Category C (N-1-1) contingencies. This comment letter addresses the fundamental issue of the inappropriate use of the specific 500 kV Sunrise Powerlink/500 kV Southwest Powerlink (SWPL) N-1-1 contingency as the limiting contingency in Southern California for determining local capacity need in SCE and SDG&E territories. Two separate probabilistic analyses, one conducted by SDG&E (2007) and the other by WECC (2012) and each using WECC-approved probabilistic analytical techniques, have reclassified the Sunrise Powerlink/SWPL simultaneous N-2 outage as a Category D event. The SDG&E analysis included “simultaneous” outages up to 22 minutes apart. The WECC analysis included “simultaneous” events up to 10 minutes apart. There is no reason to expect a different outcome if the same WECC-approved probabilistic procedure is applied to the Sunrise Powerlink/SWPL N-1-1 event. Powers Engineering recommends that the current ISO G-1/N-1 planning standard remain the planning standard in SDG&E and SCE territories.

II. DISCUSSION

A. The substantial LCR need based on the Sunrise Powerlink/SWPL N-1-1 contingency modeled by CAISO can be eliminated by re-classifying the N-1-1 as a Category D event and using the standard G-1/N-1 planning contingency

CAISO models the sequential N-1-1 loss of the 500 kV Sunrise Powerlink and 500 kV Southwest Powerlink (“SWPL”) in SDG&E territory as the critical contingency. The Local Capacity Requirement (“LCR”) procurement allocations recommended by ISO for SCE and

SDG&E are based on this N-1-1 contingency. However, when it was in SDG&E's interest in 2007 to re-classify the simultaneous loss ("N-2") of the Sunrise Powerlink and SWPL from a generic, deterministic Category C5 contingency to a very low probability Category D event that does not require mitigation, it did so.¹ See **Attachment A**, "*SDG&E Performance Category Upgrade Request for Imperial Valley - Miguel 500 kV (SWPL) and Imperial Valley - Central 500 kV (Sunrise Powerlink) Double Line Outage Probability Analysis.*"² SDG&E's concluding statement in its WECC-approved probabilistic analysis is, "*Based on the preceding information, the analysis performed is sufficient enough to move the performance criteria for the double line outage of Imperial Valley – Miguel (SWPL) and Imperial Valley – Central (Sunrise Powerlink) from Category C to Category D.*"

It was critical for SDG&E to demonstrate in 2007 that the construction of the \$2 billion Sunrise Powerlink transmission line³ would enhance grid reliability in SDG&E territory and not undermine it. For that reason SDG&E carried-out the WECC-approved probabilistic procedure to conclusively demonstrate that the Sunrise Powerlink/SWPL N-2 was a Category D event. WECC approved the reclassification of the Sunrise Powerlink/SWPL N-2 from Category C to Category D in April 2008. See **Attachment C**. The California Public Utility Commission ("CPUC") assumption when it approved the Sunrise Powerlink in 2008 was that it would add 1,000 MW of reliability to meet the SDG&E LCR under a G-1, N-1 reliability standard. This is also the position that ISO steadfastly maintained throughout the Sunrise Powerlink proceeding – the new transmission line would add 1,000 MW of reliability in SDG&E territory.

With the use of a Sunrise Powerlink/SWPL N-1-1 critical contingency without any analysis of the probability of an N-1-1 actually occurring, and two analyses demonstrating a substantially similar N-2 event involving these same two transmission lines is a Category D event, ISO adopts the de facto position in its current transmission planning powerflow modeling that the addition of the \$2 billion Sunrise Powerlink leaves the Southern California grid more vulnerable, and more in need of additional LCR resources, than it was prior to the \$2 billion transmission line being built.

¹ POC Reply Brief, p. 7.

² Ex. POC X CAISO 3.

³ POC Opening Brief, p. 6.

WECC has determined that the Sunrise Powerlink/SWPL N-2 is meets the criteria for Category D based on its probabilistic assessment of double outages in common corridors throughout the West. The WECC probabilistic analysis included “simultaneous” outages up to 10 minutes apart. See the WECC summary of this probabilistic analysis in **Attachment C**.

It is the opinion of Powers Engineering that a full probabilistic analysis of the N-1-1 contingency would lead to its re-categorization as a Category D contingency, resulting in a significantly reduced LCR need in both SCE and SDG&E territories. This would likely save ratepayers billions of dollars that they would have otherwise had to spend on unnecessary capacity that would have provided them with no meaningful reliability benefit.

There should be little difference in the probability of an N-2 or an N-1-1 involving the same two transmission lines. For example, The Utility Ratepayer Network (TURN) observed in its November 2013 opening brief in the California Public Utilities Commission Track 4 Long-Term Procurement Proceeding, *“While it may be theoretically conceivable that an N-1-1 outage would have a higher probability than an N-2 outage, TURN is not aware of any evidence in the record to support basing the Commission’s own decision on such a theoretical possibility.”*⁴ California ratepayers would be best served by a neutral party conducting the standard WECC-approved probabilistic analysis of the likelihood of a Sunrise Powerlink/SWPL N-1-1. It is the opinion of Powers Engineering that this probabilistic analysis would demonstrate the Sunrise Powerlink/SWPL N-1-1 is a Category D event.

B. Numerous deterministic Category C contingencies have been re-categorized as Category D contingencies following application of WECC-approved probabilistic analysis

WECC has approved the re-classification of many deterministic Category C contingencies that were reclassified as Category D contingencies following application of the WECC-approved probabilistic analysis, as shown in Table 1.⁵ This includes the Sunrise Powerlink/SWPL N-2 in 2008. The Sunrise Powerlink/SWPL Category C5 was reclassified a Category D under the new WECC common corridor guideline approved in 2012.

⁴ TURN Opening Brief, p. 12, FN 37.

⁵ WECC Reliability Subcommittee, *White Paper: WECC Board of Directors Request Regarding Performance Category Upgrade Request, Attachment 2 - Performance Level Adjustment Record (PLAR)*, February 20, 2013, p. 12.

Table 1. Deterministic Category C transmission lines re-classified as Category D following application of WECC-approved probabilistic analysis

Transmission lines re-classified from Category C to D	Date approved by WECC
Hassayampa-Pinal West and Hassayampa-Jojoba 500-kV lines	June 27, 2012
Hassayampa-Pinal West and Jojoba-Kyrene 500-kV line	June 27, 2012
Hassayampa-North Gila existing and 2 nd Future 500-kV lines	December 8, 2010
Palo Verde-Westwing Line 2 and Palo Verde-Rudd 500-kV lines	December 8, 2010
Imperial Valley-Miguel and Imperial Valley-Central 500-kV lines	April 16, 2008
Both Palo Verde-Westwing 500-kV lines	August 2003
Raver-Echo Lake and Shultz-Echo Lake 500-kV lines	August 2002

III. CONCLUSION

The use of the specific Southwest Powerlink/SWPL N-1-1 limiting contingency by CAISO drives the SCE and SDG&E procurement authorizations currently proposed by the CPUC. The N-1-1 contingency has not been vetted by ISO or the CPUC as reasonable and would be re-classified as a Category D contingency if evaluated using the WECC-approved probabilistic procedure.

Respectfully Submitted,

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