

Application No.: 12-05-020

Exhibit No.: _____

Witness: Neil Millar

In the Matter of the Application of San Diego Gas &
Electric Company (U902E) for a Certificate of
Public Convenience and Necessity for the South
Orange County Reliability Enhancement Project.

Application 12-05-020

**REBUTTAL TESTIMONY OF NEIL MILLAR
ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR
CORPORATION**

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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

In the Matter of the Application of San Diego Gas & Electric Company (U902E) for a Certificate of Public Convenience and Necessity for the South Orange County Reliability Enhancement Project.

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Q. What is your name and by whom are you employed?

A. My name is Neil Millar. I am employed by the California Independent System Operator Corporation (CAISO), 250 Outcropping Way, Folsom, California as the Executive Director, Infrastructure Development.

Q. Have you previously provided testimony in this proceeding?

A. Yes, I provided direct testimony in this proceeding served on May 26, 2015. My educational and professional background is provided in my direct testimony.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my testimony is to address the testimony by Office of Ratepayer Advocates (ORA) and Forest Residents Opposing New Transmission Lines (Frontlines) regarding the applicability of the North American Electric Reliability Corporation (NERC) reliability standards to San Diego Gas & Electric Company's (SDG&E's) South Orange County 138 kilovolt (kV) transmission system. This testimony explains why the South Orange County transmission system is properly considered part of the "bulk electric system" and why the South Orange County transmission system is subject to the NERC reliability standards.

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1 **Q. Please summarize the claims by ORA and Frontlines regarding the**
2 **applicability of NERC reliability standards to the South Orange County**
3 **transmission system.**

4 **A.** ORA and Frontlines assert that some or all NERC Reliability Standards may not be
5 applicable to the South Orange County transmission system on the basis that the
6 South Orange County system is a “local network” and, consequently, not a part of
7 the bulk electric system. ORA asserts that “[s]ince the [South Orange County] area
8 is a local network area, the NERC reliability standards are not applicable.”¹
9 Similarly, Frontlines asserts that “[i]t could even be argued that many of NERC’s
10 transmission planning standards (including TPL-002-13 0b, TPL-003-0b, and TPL-
11 004-0a) are not applicable to the local network that comprises SDGE’s 138 kV
12 [South Orange County] system.”²
13

14 **Q. To what facilities are the NERC reliability standards applicable?**

15 **A.** The NERC reliability standards are applicable to all elements of the “bulk electric
16 system.” In Order 773, the Federal Energy Regulatory Commission (FERC)
17 accepted the NERC proposed definition of “bulk electric system,” which initially
18 establishes a threshold that includes all facilities operated at or above 100 kV. The
19 definition also identifies specific categories of facilities and configurations as
20 inclusions and exclusions to provide clarity in the definition of “bulk electric
21 system.”³
22

23 **Q. Are the NERC Reliability Standards applicable to SDG&E’s South Orange**
24 **County 138 kV transmission system?**

25 **A.** Yes. The South Orange County 138 kV transmission system is considered a part of
26 the “bulk electric system” and, as a result, the NERC Reliability Standards are
27 directly applicable.

¹ ORA direct testimony, pp.1, 6.

² Frontlines direct testimony, p. 3.

³ FERC Order 773, p. 1.

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ORA and Frontlines suggest that the South Orange County 138 kV transmission system is excluded from the bulk electric system because it is a “local network” as described in NERC’s Exclusion E3 to the bulk electric system definition. Exclusion E3 describes a “local network” as “[a] group of contiguous transmission Elements operated at less than 300 kV that distribute power to Load rather than transfer bulk power across the interconnected system.”⁴ At first glance, this description appears to include systems like the South Orange County 138 kV system, however, this is not a correct application of Exclusion E3 based on a complete understanding of the South Orange County system. The South Orange County 138 kV system is also connected to the rest of the CAISO-controlled grid through 69 kV facilities, and is parallel to the South of San Onofre Nuclear Generating Station (SONGS) transfer path into San Diego. Furthermore, the South Orange County 138 kV system provides reactive support required to support San Diego import transmission, which is identified as an Interconnection Reliability Operating Limit (IROL) due to the post-transient voltage instability concern in the SDG&E and LA Basin areas after the SONGS retirement.

Q. Are there any additional reasons why the South Orange County 138 kV transmission system is considered a part of the bulk electric system?

A. Yes, bulk electric system categorization is further supported by the presence of a 100 MVAR STATCOM (Dynamic Reactive Power Device) at the 138 kV Talega bus, and a 40 MVAR shunt capacitor (Static Reactive Power Device) located at Capistrano 138 kV bus. Pursuant to Inclusion I5, both of these devices are

⁴ See the NERC Bulk Electric System Definition Reference Document, Version 2, April 2014. Available at http://www.nerc.com/pa/RAPA/BES%20DL/bes_phase2_reference_document_20140325_final_clean.pdf, p.

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1 themselves bulk electric system elements because they support voltages and transfer
2 capability on both the 138 kV and 230 kV systems.⁵

3

4 **Q. If the Commission finds that the South Orange County 138 kV system is not a**
5 **part of the bulk electric system, should the NERC reliability standards still be**
6 **applied?**

7 A. Yes, even if the South Orange County 138 kV facilities were not considered bulk
8 electric system facilities, they are under CAISO operational control and the CAISO
9 Planning Standards require the CAISO to apply the NERC reliability standards to all
10 transmission system facilities under CAISO its operational control.

11 Pursuant to CAISO Planning Standards “[t]he [CA]ISO will apply NERC
12 Transmission Planning (TPL) standards, the NUC-001 Nuclear Plant Interface
13 Requirements (NPIRs) for Diablo Canyon Power Plant, and the approved WECC
14 Regional Criteria to facilities with voltages levels less than 100 kV or otherwise not
15 covered under the NERC Bulk Electric System definition that have been turned over
16 to the [CA]ISO operational control.”⁶

17

18 **Q. Do the CAISO Planning Standards allow load shedding of up to 250 MW for**
19 **Category B (single contingency events) or Category C.3 multiple contingency**
20 **events (shedding load after one contingency to be prepared for the next**
21 **contingency)?**

22 A. No. ORA⁷ and Frontlines⁸ have taken certain references in the CAISO Planning
23 Standards out of context to support their positions that CAISO Planning Standards

⁵ Inclusion I5 specifically includes in the term “bulk electric system” any “Static or dynamic devices (excluding generators) dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in Inclusion I1 unless excluded by application of Exclusion E4.”

⁶ CAISO Planning Standards, effective April 1, 2015, p. 4.

http://www.caiso.com/Documents/FinalISOPlanningStandards-April12015_v2.pdf.

⁷ ORA asserts: “According to the CAISO planning standard, under category B (N-1) contingencies, interruption of transmission service to the SOC area is allowed but should not be more than 250 megawatt (MW).” ORA direct testimony, p. 1.

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1 allow for load shedding of up to 250 MW for Category B or in a Category C.3 event
2 following the first contingency in order to prepare for the next contingency.

3 ORA did not provide a reference to support this position, but Frontlines refers to the
4 CAISO Planning Standards that were in effect from September 18, 2014 to March
5 30, 2015, which stated that “[n]o single contingency (TPL002 and ISO standard [G-
6 1] [L-1]) should result in loss of more than 250 MW of load. This includes
7 consequential loss of load as well as load that may need to be dropped after the first
8 contingency (during the system adjustment period) in order to position the electric
9 system for reliable operation in anticipation of the next worst contingency.”⁹

10
11 However, CAISO Planning Standard referenced by Frontlines is only applicable to
12 determine “when it is necessary to upgrade the transmission system from a radial to
13 a looped configuration or to eliminate load dropping otherwise permitted by WECC
14 and NERC planning standards through transmission infrastructure improvements.”
15 (Emphasis added). This standard is not applicable in the present case because, as
16 described in detail above, firm load shedding is not allowed as a long term planning
17 solution for Category B single contingency outages, including as a preparatory
18 action for the next contingency. The 250 MW ceiling established by the CAISO
19 Planning Standards is a cap to limit the amount of load shedding if otherwise
20 permitted by the NERC Reliability Standards, not a relaxation of the NERC
21 Reliability Standards.
22

⁸ Frontlines asserts: “The CAISO Planning Standard that was in effect at the time SDGE filed its Initial Testimony contradicts SDGE’s contention that it is a violation of NERC standard TPL-002-0b to shed load in the SOC following the first contingency event to prepare for the next contingency. Specifically, Section 6 of the CAISO standard set forth the principals for determining when transmission infrastructure improvements are appropriate to eliminate load drop that is otherwise permitted by WECC and NERC planning standards, and it specifically recognizes that, under certain circumstances, load may be dropped after the first Category B contingency event to prepare for the next worst contingency.”

⁹ The CAISO notes that Section II.5 of the currently effective CAISO Planning Standards has similar language which states “[n]o single contingency (TPL-001-4 P1) should result in loss of more than 250 MW of load.”

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1 The CAISO Planning Standards further clarify the purpose of the 250 MW cap by
2 noting that the intent of this particular standard is “to put a cap on the radial and/or
3 consequential loss of load allowed under NERC standard TPL-001-4 single
4 contingencies (P1).”¹⁰ (Emphasis added). As the 250 MW cap is in reference to
5 limiting the amount of load shedding that would otherwise be permitted by the
6 NERC Reliability Standards, it is not applicable or relevant in circumstances where
7 the application of the NERC Reliability Standards does not permit the load
8 shedding.

9

10 **Q. Please summarize your testimony.**

11 **A.**The NERC reliability standards apply to the South Orange County 138 kV
12 transmission system based on NERC’s definition of the “bulk electric system” and
13 the requirements in the CAISO Planning Standards. The SOCRE project remains
14 the best project to best meet the reliability requirements, as discussed in my direct
15 testimony and the supporting technical analyses presented in the direct and rebuttal
16 testimony of Mr. Robert Sparks.

17

18 **Q. Does this conclude your testimony?**

19 **A.**Yes.

¹⁰ CAISO April 1, 2015 Planning Standards at 14.