Application No.: 13-10-020
Exhibit No.:
Witness: Neil Millar

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U338E) for a Certificate of Public Convenience and Necessity for the West of Devers Upgrade Project and for an Interim Decision Approving the Proposed Transaction between Southern California Edison and Morongo Transmission LLC.	Application 13-10-020

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

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

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 served testimony in this proceeding?

A. Yes, I served direct testimony on October 27, 2015. I have described my educational and professional background in my direct testimony.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to rebut certain testimony offered by the Office of Ratepayer Advocates (ORA) regarding Southern California Edison Company's (SCE's) Application requesting a certificate of public convenience and necessity for the West of Devers Upgrade Project (Proposed Project). Specifically, I address the following items:

(1) ORA's contention that Full Capacity Deliverability Status (FCDS) is not justified to integrate new electric generation resources;

(2) ORA's recommendation that the Commission reject the Proposed Project based on the three prong test developed in D.07-03-012;

(3) ORA's contention that WECC is considering changes to the planning standards regarding credible contingencies that are relevant to the Proposed Project; and

(4) ORA's assertion that an economic assessment of the Proposed Project is necessary prior to Commission approval.

In this testimony, I discuss why each of these contentions is misplaced, and in conclusion, reiterate that the Proposed Project is necessary to meet the State of California's policy requirements, meet the needs of the generator interconnection service requested of the CAISO, and well-positions the transmission system to support achievement of future state renewable energy goals.

I. ORA Fails to Consider the Commission and CAISO Framework Established to Meet Renewable Portfolio Goals.

Q. Please summarize ORA's argument regarding the need for FCDS for new renewable energy projects.

A. Put briefly, the ORA does not believe that FCDS is necessary to support renewable generation. This contention is incorrect. As explained in my prepared direct testimony, the Commission and CAISO-developed processes designed to integrate renewable generation and achieve a 33 percent renewable portfolio standard (RPS) were based on a comprehensive framework that modeled optimal renewable buildout and planned transmission solutions based on the understanding that new projects would request and achieve FCDS. From a factual perspective, the vast majority of utility scale renewable projects that have achieved operational status have achieved FCDS. This is not by chance, but rather by design. I provide additional detail on the framework and the factual basis.

Q. How did the Commission and CAISO-developed framework encourage the provision of FCDS to new renewable generation projects?

A. As early as 2008, the CAISO began to change its interconnection processes in order to better meet the increase in interconnection requests resulting from the state's RPS.[1] The Commission was fully engaged in this process, even proposing "that [Participating Transmission Owners] should be required to provide up-front funding for any major new transmission project serving location constrained generators: (1) that is identified and approved through a state mandated and/or managed process; and (2) that the CAISO approves as part of the transmission planning process."[2] Although the Commission's proposal was not accepted, it was a clear indication of the need to develop new transmission to meet the RPS requirements.

Later, in June 2010, the CAISO filed tariff amendments implementing a revised transmission planning process. The CAISO indicated that the amendments were "necessary and appropriate to enable California to meet its ambitious Renewable Portfolio Standards ("RPS") and environmental goals."[3] These tariff amendments specifically included a new category of transmission facilities that would be "needed to facilitate achievement of state and federal policy requirements and directives." The CAISO tariff specifically provides that the "CAISO will determine the need for, and identify such policy-driven transmission solutions that efficiently and effectively meet applicable policies under alternative resource location and integration assumptions and scenarios, while mitigating the risk of stranded investment."[4]

The Commission was an active participant in the development of these modifications to the CAISO's transmission planning process. In comments submitted to FERC, the

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[1] In July 2008, the CAISO filed its Generation Interconnection Process Reform tariff amendment, which was designed to address "queuing backlog within the CAISO has been creating additional challenges in meeting the state's renewable portfolio standard." California Indep. Sys. Operator Corp., 124 FERC ¶ 61292, 62608 (Sept. 26, 2008).

[2] California Indep. Sys. Operator Corp., 124 FERC ¶ 61292, 62629 (Sept. 26, 2008).

[3] See CAISO Submission Letter re: Revised Transmission Planning Process Proposal, p. 1. http://www.caiso.com/Documents/June4_2010Amendments-tariff-implementrevisedtransmissionplanningprocessindocketno_ER10-1401-000.pdf.

[4] See CAISO Tariff Section 24.4.6.6.

Commission noted that "the proposed [transmission planning process] revisions will significantly enhance the efficiency and coordination of the overall process of planning, permitting and developing transmission to support California's environmental and energy policy goals. Of particular note, during the course of development of the proposed [transmission planning process] revisions, the [Commision] sought greater coordination of its own resource planning efforts with the CAISO's transmission planning efforts." The Commission pleading cited the May 13, 2010 Memorandum of Understanding (MOU) between the CAISO and Commission, noting that the "MOU provides that resource planning priorities that result from the [Commission]'s own processes will be a significant input into the CAISO's transmission planning process."[5]

Since the revised transmission planning process was approved and beginning within the CAISO's 2011/2012 transmission planning cycle, the Commission has communicated its resource planning priorities to the CAISO through delivery of renewable portfolio scenarios that the CAISO uses in each annual transmission plan to identify needs for policy-driven transmission projects consistent with the MOU. The Commission develops these portfolios through the use of the RPS Calculator. *Every* RPS Calculator portfolio submitted by the Commission into the CAISO's transmission planning process for the identification of policy-driven transmission to achieve 33 percent RPS has assumed FCDS for new renewable energy projects.[6] The Commission has also provided portfolios to the CAISO to use in information-only studies examining RPS above 33 percent (up to 50 percent RPS on an energy only basis). However, these are not the portfolios the CAISO has relied upon, nor has the Commission intended the CAISO to rely upon them, to identify policy-driven needs to achieve the 33 percent RPS, as I discuss below.)

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[5] Notice of Intervention and Comments of Public Utilities Commission of the State of California, FERC Docket No. ER10-1401-000, pp. 4-5.

[6] RPS Calculator User Guide, Version 6.1, p. A-17. ("The RPS Calculator allocates scarce transmission supply to renewable resources to deliver energy to load. In prior versions of the RPS Calculator (v.1.0 – v.6.0), all new renewable resources were assumed to have full capacity deliverability status (FCDS).")

It is important that I clarify one distinction. Generators interconnecting to the CAISO-controlled grid require FCDS in order to provide resource adequacy capacity to load serving entities inside the CAISO footprint. The RPS calculator's treatment of the Imperial area includes potential generators connecting directly either to the CAISO or the Imperial Irrigation District's (IID) transmission system for purposes of exporting renewable generation to the CAISO system. Those generators connecting to the IID transmission system must demonstrate to the load serving entities that they have transmission access to the IID/CAISO interface, and then rely on Maximum Import Capability (MIC) that was allocated to the load serving entities for deliverability on the CAISO system. In this respect, they are comparable to CAISO-connected generation with FCDS—both must have deliverability. Thus, deliverability planned in the CAISO's transmission planning process and made available on the CAISO system either results in awarding FCDS to generators connecting to the CAISO grid, or it increasing MIC, depending on which generators actually proceed to commercial operation. To the extent the Commission-developed renewable generation portfolios assume generation connected inside IID, failing to provide deliverability to this generation through increases in MIC would fail to meet the portfolio requirements, just as failing to provide FCDS to CAISO-connected generators fails to meet portfolio requirements. ORA's arguments that MIC is not necessary is essentially the same argument ORA raises regarding the lack of need to provide FCDS to CAISO-connected generation, and is in error for the same reasons.

Q. **Please explain the significance of the RPS Calculator portfolios in the CAISO study of policy driven solutions.**

A. As contemplated in the MOU, the Commission provides RPS Calculator portfolios annually to the CAISO to serve as the basis for the CAISO's analysis of policy driven projects. The RPS Calculator looks at a variety of factors in determining the optimal locations for new renewable energy resources. These factors include the costs of new generation and transmission, including costs of "new transmission build triggered by the

renewable generation in a given portfolio."[7] In addition, the RPS Calculator takes into account land use exclusions, geography, resource potential, integration costs, system operations and system reliability in selecting a complete portfolio.

Q. Have the RPS Calculator portfolios considered the transmission costs associated with the Proposed Project in selecting new renewable generation resources?

A. Yes, the RPS Calculator considers transmission costs in selecting new renewable generation resources meet any net shortage. The RPS Calculator contemplated the transmission costs for the Proposed Project in determining whether to locate renewable generation projects in the Riverside East and Imperial Valley areas. The transmission costs have been updated in the RPS Calculator over time to more accurately capture the costs and benefits of the renewable projects in the Riverside East and Imperial Valley areas. Notably, in every RPS Calculator portfolio the Commission has provided to the CAISO, renewable projects selected in the Riverside East and Imperial Valley areas have triggered the need for the Proposed Project. As stated in the CAISO's prepared direct testimony in this proceeding, the CAISO would have selected the Proposed Project as a policy-driven project had it not already been identified as necessary under the generational interconnection process.

Q. What conclusions can you draw from the interplay of the Commission and CAISO processes described above?

A. The Commission and CAISO established processes for the approval of policy-driven transmission solutions are necessarily intertwined. The CAISO established its process for the approval of policy-driven projects largely to meet state renewable energy goals. The Commission supported this process and has provided critical inputs used by the CAISO to identify the need for policy-driven projects. An application for approval to construct a particular transmission line is not the appropriate forum to second-guess well-established

[7] Id. at p. 8.

resource and transmission planning processes conducted by the Commission and CAISO. The CAISO and the Commission have begun to study energy-only options that may be worth pursuing to meet the state's new 50 percent RPS goals. However, the CAISO, based on Commission input, continues to rely on portfolios with fully deliverable generation resources to identify policy-drive projects meet the 33 percent renewable portfolios in the 2015-2016 transmission plan. As noted earlier, *every* RPS Calculator portfolio submitted by the Commission into the CAISO's transmission planning process for purposes of identifying policy-driven transmission to achieve 33 percent RPS has assumed FCDS for new renewable energy projects,[8] and the vast majority of new generation have required FCDS In the 2015-2016 transmission plan, the CAISO will also study portfolios that include energy-only resources that could be used to meet the 50 percent RPS. However, the CAISO will not rely on these special studies to identify and approve policy-driven transmission projects. These studies are merely an initial exploratory step in considering a migration towards more energy-only resources in moving beyond 33 percent RPS, recognizing the contribution to resource adequacy already achieved by the 33 percent RPS resources. In any event, no decisions have yet been made regarding the deliverability status of RPS resources above 33 percent.

II. ORA Incorrectly Applies the Three-Prong Test Developed in D.07-03-012.

Q. Do you agree with ORA's application of the three-prong test developed in D.07-03-012 to determine "need" under Public Utilities Code Section 399.2.5?

A. No. First, Public Utilities Code Section 399.2.5 primarily addresses backstop cost recovery for costs not approved by FERC and it is not necessary to meet the Section 399.2.5 standard to approve the Proposed Project. Second, the three-prong test was developed prior to implementing the processes outlined in Section I of this testimony, which were instituted by the CAISO and the Commission to identify the need for policy-

[8] RPS Calculator User Guide, Version 6.1, p. A-17. ("The RPS Calculator allocates scarce transmission supply to renewable resources to deliver energy to load. In prior versions of the RPS Calculator (v.1.0 – v.6.0), all new renewable resources were assumed to have full capacity deliverability status (FCDS).")

driven transmission solutions. Commission review of need for policy-driven transmission projects should align with the established processes, and any consideration of the three-prong test needs to take those new circumstances into account. Third, the CAISO also does not agree with ORA's substantive analysis of the three-prong test, as I discuss below.

Q. Please describe your concerns with ORA's analysis of need for the Proposed Project under the three-prong test.

A. The three-prong test generally holds that need for a project is dependent upon the following three factors:

(1) the project would bring renewable integration to the grid that would otherwise remain unavailable;

(2) the area within the transmission line's reach would play a critical role in meeting the state RPS; and

(3) the cost of the line is appropriately balanced against the certainty of the line's contribution to economically rational RPS compliance.

In general, these three goal are consistent with the objectives of the planning processes laid out in Section I of this testimony. The RPS Calculator and the CAISO transmission planning process are designed to identify areas with strong renewable generation potential and provide transmission access to generators in those areas. The ORA would undercut the comprehensive planning processes in place, in particular the RPS Calculator, by shifting resources to locations not initially selected for renewable development based *solely* on consideration of a single factor—existing transmission capacity.[9] As discussed above, the RPS Calculator provides a more comprehensive, holistic approach to deciding where new renewable development should be located, by relying on numerous relevant factors including, land use exclusions, geography, resource potential, integration costs, system operations and system reliability in selecting a

[9] ORA Prepared Testimony, p. 25.

portfolio. ORA's after-the-fact review based on solely on transmission costs is too narrowly focused and is not well-suited to developing renewable build out in a thoughtful, well-planned manner that must take into account broader considerations than just transmission costs. The Commission's process to develop renewable generation portfolios for policy-driven transmission provides that venue.

Furthermore, in making representations regarding the amount of deliverability that could be realized without the Proposed Project, ORA's analysis errs in assuming that the West of Devers Interim Upgrades (Interim Upgrades) could continue in service if the Proposed Project is denied.[10] The Interim Upgrades are by nature a temporary solution, limited both by the limitations on SCE's continued use of certain rights of way as set out in SCE's testimony, as well as issues identified in the CAISO's planning analysis. The CAISO has known the limitations with the Interim Upgrades as a longer-term solution since the original development of the Proposed Project to meet the Transition Cluster needs and the consideration of interim measures. The CAISO considered alternatives such as reactors and others as potential interim measures, but these alternative measures fell far short of meeting the long term identified needs at that time. Further, as the Interim Upgrades were explored, the CAISO also learned of operating issues in the normal course of its planning analysis that also would have created other operating challenges in the long term even as interim solutions. Dr. Zhu's prepared rebuttal testimony confirms one such concern previously identified with regard to extending the life of the Interim Upgrades based on preliminary study of the ORA contention. As Dr. Zhu's prepared rebuttal testimony sets out, the analysis confirming the reliability issue used relatively conservative scenarios. This means that further challenges are likely to occur under a broader range of scenarios. The Commission cannot rely on the continued availability of the Interim Upgrades to meet deliverability needs that would otherwise be provided by the Proposed Project, even if the Commission accepts the limitations the

[10] ORA Prepared Testimony, p. 24.

Interim Upgrades will pose on meeting generators' requested interconnection service, on achieving the 33 percent RPS portfolios provided by the Commission, and on potential future development in the East Riverside and Imperial areas. In addition, ORA's calculation of deliverability made available by the existing system is flawed, as discussed in Dr. Zhu's prepared rebuttal testimony.

Q. Do you agree with ORA's assessment that there are several areas within the state that can accommodate energy only resources without the Proposed Project and without the need for network upgrades?

A. No. ORA's discussion of energy only resources and the CAISO's "rule of thumb" estimates of energy only capability provides no basis to assert that several areas in the state can accommodate generation resources sufficient to meet the state's RPS goals. The purpose of the rules of thumb was simply to enable the development of portfolios that it could test to explore the actual boundaries of reasonable congestion that would occur if moving beyond 33 percent RPS on an energy only basis. These initial boundary estimates reasonably must be biased to the high side; with the expectation that further detailed analysis would identify congestion issues that would then result in lower, more accurate levels being established for future portfolio development purposes. The CAISO will adjust these boundaries appropriately to feed into future portfolio development. The CAISO is conducting this iterative simulation analysis to provide better information regarding the development of a future round of portfolios, but they are not a valid set of assumptions for planning or decision-making purposes given the limited purpose for which they were developed and the means by which they were developed.

Further, ORA infers an even higher level of precision and weight to the data by making linear, one-for-one adjustments to the initial estimates of tolerable congestion thresholds based on the estimated amount of FCDS the Proposed Project is anticipated to enable. This puts far too much faith in assuming the accuracy of a one-to-one relationship between FCDS and impacts on tolerable congestion thresholds given the wide range of

different parameters that affect each determination, and ignores the impact that the Proposed Project would also have in reducing congestion in other areas besides East Riverside, in particular the Imperial area.

III. Pending Modifications to WECC Planning Standards Are Not Grounds to Delay the Proposed Project.

Q. Please provide an overview of the critical contingency on the existing system that limits deliverability west of Devers.

A. As detailed in the prepared direct testimony of Dr. Songzhe Zhu, the critical contingency identified by the CAISO is the loss of the Devers-Valley No. 1 and No. 2 500 kV transmission lines. These lines are considered adjacent transmission circuits due to their physical proximity. In the WECC region, the loss of two adjacent circuits on separate towers is considered a credible contingency that the CAISO must plan to address in its studies. This is considered a regional variance to NERC Standard FAC-010.

Q. Do you agree with ORA's contention that the Proposed Project should not move forward because of a potential change in the definition of a WECC credible contingency?

A. No. ORA correctly points out that WECC is considering a request to retire certain regional variances to NERC Standard FAC-010. However, ORA fails to note that the Drafting Team addressing the requested retirement has specifically recommended that the section addressing the loss of two adjacent circuits on separate towers should be maintained even after the other elements of the variance are retired.[11] The CAISO has fully supported maintaining the loss of adjacent transmission circuits as a credible contingency and expects that the standard will continued to be applied in the WECC

[11] *See* Whitepaper: Retirement of WECC Regional Difference FAC-010.2.1 System Operating Limits Methodology for the Planning Horizon. and FAC-011. https://www.wecc.biz/Reliability/WECC-0113 Posting 2 FAC-010-2 1 SOL Method for the Planning Horizon - Redlined to Posting 1.docx.

region. Further, the CAISO system has 14 500 kV adjacent transmission circuits to which this regional variance applies. As such the CAISO system is heavily affected – if not the system most heavily affected – by changes to this standard both by number of potential contingencies and the high level of imports and load served over these transmission lines. Given the potential significant adverse impacts on the CAISO, if the criteria is changed at a WECC-wide level, the CAISO may then have to consider adding this criteria into the CAISO planning standards, which the CAISO takes into account in identifying transmission system needs. The CAISO has found it necessary in other circumstances to rely on requirements in CAISO Planning Standards to address concerns no longer addressed on a NERC or WECC-wide basis, particularly as the NERC mandatory standards have begun to shift to focus more exclusively on risks that affect a planning entity's neighbors, rather than the planning entity's own system.

IV. An Economic Assessment of the Proposed Project is Not Necessary at This Time.

Q. Do you agree with ORA's assertion that an economic assessment of the Proposed Project is necessary?

A. No, ORA's assertion is based on its rejection of Commission and CAISO transmission planning processes described in Section I. ORA asserts that FCDS and maximum import capability (MIC) "are transmission related products associated with Resource Adequacy and generation capacity counting rather than integrating renewable resources." As shown above, this represents a simplification of the planning and procurement processes designed to achieve the 33 percent RPS goal. Enabling resource adequacy and transmission system improvements were considered a fundamental aspect of integrating renewable resources on a large scale as discussed earlier in this testimony. Replacing the results of a comprehensive, prospective transmission planning process that includes approved processes to achieve state policy objectives and involves careful coordination with Commission-led resource planning efforts with a case-by-case economic benefit analysis ignores all of the important considerations that have been taken into account and

process that have been undertaken in the planning process and undermines the prospective planning direction the state was setting for renewable generation developers. ORA's approach potentially could "pull the rug out from under" renewable generation developers that have expended significant resources to plan and develop projects needed to help the state achieve its 33 percent RPS goals.

An economic analysis may prove that the Proposed Project has additional economic benefits, but it will not disprove the fact that it is necessary to enable FCDS for the RPS portfolio projects studied in the CAISO's transmission planning process.

Q. Please summarize your recommendations.

A. As explained in my testimony and the supporting technical testimony of Dr. Songzhe Zhu, the Proposed Project is necessary to meet policy requirements of the State of California, meets the needs of the generator interconnection service requested of the CAISO, and well-positions the transmission system for achievement of future state renewable energy goals. As a result, I recommend that the Commission approve the Application filed SCE for a certificate of public convenience and necessity for the Proposed Project.

Q. Does this conclude your testimony?

A. Yes, it does.