

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Transmission Planning Within the California Independent System Operator Corporation)))	Docket No. AD18-12-000
California Public Utilities Commission, Northern California Power Agency, City and County of San Francisco, State Water Contractors, and Transmission Agency of Northern California)))))))	Docket No. EL17-45-000
v.))	
Pacific Gas and Electric Company)))	
Southern California Edison Company))	Docket No. ER18-370-000

**INITIAL POST-TECHNICAL CONFERENCE COMMENTS OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

The California Independent System Operator Corporation (CAISO) submits these initial comments regarding the Commission’s May 1, 2018, technical conference on the processes used by participating transmission owners (PTOs) in the CAISO to determine which transmission-related maintenance and compliance activities/facilities, including, but not limited to, transmission-related capital additions, that are subject to the CAISO Transmission Planning Process (TPP).¹ In these comments, the CAISO responds to the specific questions set forth in the Commission’s May 15, 2018, Notice Inviting Post-Technical Conference Comments (Notice) and other issues raised at the May 1, 2018,

¹ See Supplemental Notice of Technical Conference (April 10, 2018).

Technical Conference (May 1 Technical Conference).

I. Establishing the CAISO's Role in Transmission Maintenance Processes

Though not directly addressed in the Commission's post-technical conference questions, the CAISO reiterates that any new processes regarding the review and approval of PTO transmission maintenance activities should be administered by the PTOs rather than included within the CAISO's TPP. As explained at the May 1 Technical Conference, adding processes to review and/or approve PTO maintenance activities in the CAISO's TPP would be both administratively and technically burdensome. The CAISO is not in a position—and does not have the relevant information or sufficient staff resources—to efficiently and effectively execute a process to review, assess, and approve the entirety of PTO transmission maintenance activities. In particular, the CAISO is neither well-positioned nor well-suited to make these assessments because it is not “on the ground” on a day-to-day basis, and it does not constantly monitor and assess the physical condition of physical resources. Unlike the PTOs, the CAISO does not have a physical presence near the expansive transmission facilities that comprise the CAISO grid. Requiring the CAISO to undertake this role would fundamentally shift the duties and responsibilities of the CAISO and PTOs, and greatly expand the CAISO's scope of activity and requisite staffing and skill sets well beyond that contemplated in the Transmission Control Agreement (TCA) that has been in place since the start-up of the CAISO. In that regard, under the TCA the PTOs, not the CAISO, are responsible for maintaining their respective transmission facilities. Any CAISO review and/or approval of

PTO transmission maintenance would most likely subject the CAISO to increased liability risk. Requiring the CAISO to review and approve PTO transmission maintenance activities would also require a significant increase in CAISO staffing to collect, verify, and analyze the condition of the PTOs' transmission facilities, the expected useful life of those facilities and the priority for replacing facilities.

Unlike the CAISO, the PTOs are well-positioned and have regional and local offices near their transmission facilities and are able to more effectively and efficiently collect the relevant information, make informed decisions, and provide information to stakeholders regarding the need for transmission maintenance on their respective facilities. The PTOs are also able to use their in-depth knowledge of their facilities and, in conjunction with their transmission maintenance expertise, to appropriately manage risks. For these reasons, the CAISO recommends that any additional processes for review and approval of PTO transmission maintenance activities should be administered by the PTOs directly.

The CAISO will continue to work to coordinate with the PTOs to ensure that any CAISO-approved transmission expansion or reinforcement is aligned with planned transmission maintenance activities.

II. Responses to Commission Questions

In this section, the CAISO responds to the Commission's questions outlined in the Notice. The CAISO responds only to those questions that address the CAISO's TPP. The CAISO has reproduced each of the questions prior to the

relevant response.

Commission Question 3: Technical conference participants used the terms “incremental” and “incidental” at the technical conference. Provide a definition for those terms when they are used to describe any increases to transmission capability that result from the use of new technology when replacing one-for-one assets.

Commission Question 5: Technical conference participants used the terms “expansion” and “enhancement” at the technical conference. Provide the definitions of those terms when they are used to describe certain changes to the configuration of the CAISO transmission system resulting from “asset management” activities that are subject to the CAISO TPP.

Questions 3 and 5 are closely related, and the CAISO has combined its responses for clarity. Below, the CAISO defines and provides context for the terms identified in Questions 3 and 5. In addition, the CAISO provides illustrative examples that build off of the discussions at the May 1 Technical Conference.

A. “Expansion,” “Reinforcement,” and “Enhancement”

The CAISO clarifies that the CAISO’s TPP addresses “expansion” and “reinforcement” of the transmission system, as opposed to “enhancement.”² This terminology is reflected in the Commission-approved TCA that sets forth the respective roles and responsibilities of the CAISO and PTOs. TCA Section 11, entitled Expansion of Transmission Facilities, provides that CAISO Tariff Sections 24 (Transmission Planning Process) and 25 (Generator Interconnection) “will apply to any expansion or reinforcement of the CAISO Controlled Grid.” As a result, transmission system expansions and

² The transcript of the May 1 Technical Conference indicates that on one occasion the CAISO may have incorrectly used the term “enhancement” when meaning to refer to “expansion.” Transcript at 49:6.

reinforcements are required to go through the CAISO's TPP.

The Commission's orders on the start-up of the CAISO recognized that the CAISO's TPP applied to the *expansion* of transmission facilities, in particular *expansions* to meet reliability and economic needs³ and each participating transmission owner was responsible for maintaining its transmission lines.⁴

In the context of the TCA and the CAISO's TPP, an "expansion" is a project that increases the transmission capacity to meet needs identified by the CAISO based on tariff requirements. A "reinforcement" is also a project that increases the transmission capacity that is identified by the CAISO based on tariff requirements, but the need for a reinforcement is caused by the retirement of generation resources or similar changes in grid topology. As the CAISO explained its Order No. 1000 Compliance Filing, the tariff identifies the transmission needs that the CAISO will address through the TPP. These needs include the following:

reliability needs; economic needs; public policy requirements and directives; location-constrained resource interconnection facilities (which are radial generation tie facilities ultimately paid for by generators as they come on-line); maintaining the feasibility of long-term CRRs.⁵

³ *Pacific Gas & Electric Company, et al.*, 77 FERC ¶61,204 at 61,834-36 (1996), *order providing guidance*, 80 FERC ¶ 61,128 at 61,430-34 (1997), *order on reh'g*, 81 FERC ¶61,122 at 61,486-87 (1997).

⁴ *Pacific Gas & Electric Company, et al.*, 81 FERC ¶61,122 at 61,559. As discussed *infra*, the CAISO subsequently added other categories of transmission need (e.g., public policy) that it evaluates in its TPP.

⁵ See the CAISO's Order No. 1000 compliance filing transmittal letter at p. 11, filed with the Commission on October 11, 2012, Docket No. ER13-103-000.

As a result, for a transmission solution to be classified as an “expansion” or “reinforcement,” it must meet CAISO-identified need based on reliability, economic, public policy or other requirements identified in the CAISO tariff. In Section C, below, the CAISO details, with illustrative examples, the specifics as to how these projects are identified.

B. “Incidental” and “Incremental”

The CAISO uses the terms “incidental” and “incremental” based on their ordinary, plain language meanings. The Oxford Dictionary defines “incidental” as “[I]liable to happen as a consequence of (an activity).”⁶ “Incremental” is defined as “relating to or denoting an increase or addition.”⁷ To better understand the application of these terms to the CAISO’s TPP one must understand the context in which they are used because both terms are used to describe a relationship between two subjects (*i.e.*, X is incidental to Y, or A is incremental to B).

With respect to the term “incidental,” the CAISO believes this term is most helpful in the context of capacity increases that are incidental to a maintenance project. Footnote 11 provides the definition of maintenance as set forth in the TCA. A maintenance project is not designed to meet a CAISO-identified need as set forth in CAISO Tariff Section 24, but it could nonetheless provide an increase in transmission capacity as a consequence of the work (*i.e.*, incidental to the maintenance project). Replacing a piece of aging equipment such as a transformer or breaker may involve using new equipment that has been

⁶ English Oxford Dictionary, <https://en.oxforddictionaries.com/definition/us/INCIDENTAL>.

⁷ English Oxford Dictionary, <https://en.oxforddictionaries.com/definition/us/incremental>.

standardized for fleet management purposes and has higher capacity than the original. In this circumstance, the increase in capacity would be incidental to the replacement. In contrast, projects cannot be required exclusively for maintenance purposes, such as a project to increase the capacity of a transmission line (e.g., from 115 kV to 230 kV, or 69 kV to 115 kV). Because there are no reasonable circumstances in which a maintenance purpose would drive the need to increase transmission line voltage, the capacity increase would not be incidental. A capacity increase that is incidental to a maintenance project does not convert the project into an expansion or reinforcement that must be reviewed and approved through the CAISO's TPP.

The CAISO believes the term "incremental" is most helpful in the context of additional transmission work that is incremental to a maintenance project. During the May 1 Technical Conference, the CAISO used the term "incremental" to discuss a scenario in which a PTO increases the scope of a maintenance project "specifically to increase capacity" and meet a CAISO-identified need.⁸ In this case, the additional work would be incremental to the maintenance activity and, to the extent it increased transmission capacity to meet a CAISO-identified need, the incremental portion of the project would need to be reviewed through the CAISO's TPP.

⁸ Transcript at 133:16-17.

C. Illustrative Examples

To better understand this terminology and whether transmission improvements are classified an expansion or reinforcement reviewed through the CAISO's TPP, it is helpful to consider illustrative examples. These examples are primarily based on factual variants of Southern California Edison Company's (SCE) Big Creek Corridor Rating Increase Project (Big Creek Project) that was discussed in detail at the May 1 Technical Conference⁹ and previously approved in the CAISO's 2016-17 transmission plan.¹⁰ As these examples are provided for illustrative purposes, they are far more complex than the vast majority of transmission planning projects and maintenance activities.

i. Big Creek Project Approved in the 2016-17 Transmission Plan

The Big Creek Project included two major elements: (1) reconductoring four 230 kilovolt ("kV") transmission lines to meet clearance requirements set by the California Public Utilities Commission's (CPUC) General Order 95; and (2) upgrades to substation terminal equipment. The reconductoring, with a newer, more efficient conductor (but at the existing 230 kV level and not an increased kV nameplate voltage level), was a maintenance activity that was required outside of the CAISO's TPP, and it was not meant to increase transmission system capacity or to meet any CAISO-identified transmission needs.

⁹ Transcript at 32:6-34:19.

¹⁰ CAISO 2016-2017 Transmission Plan, p. 119-120.
(http://www.caiso.com/Documents/Board-Approved_2016-2017TransmissionPlan.pdf.)

During the CAISO's TPP, SCE proposed additional work, incremental to the reconductoring, to increase the capacity of the transmission system and meet CAISO-identified reliability needs. SCE proposed incremental portions of the project (*i.e.*, additional work not required for compliance with CPUC General Order 95) through the CAISO's Request Window submission process. This incremental work primarily consisted of upgrades to substation terminal equipment that, together with the reconductoring, would increase transmission capacity. The CAISO did not evaluate the need for the reconductoring because it was maintenance required pursuant to CPUC General Order 95. The incremental upgrades to substation terminal equipment were evaluated and approved through the CAISO's TPP because the incremental upgrades increased system capacity and were submitted to meet a CAISO-identified reliability need. As a result, the upgrades to substation terminal equipment were properly considered and were an expansion to the CAISO's transmission system.

ii. Big Creek Project Variant A: Incidental Capacity Increase Due To Maintenance Activities

If the reconductoring that was required for compliance with CPUC General Order 95 resulted in a capacity increase without any incremental terminal equipment upgrades, there would not be a basis to review any aspect of the project through the CAISO's TPP because the resulting capacity increase would be incidental to maintenance work required by CPUC General Order 95. SCE would have been obliged to inform the CAISO of the upgrade.

iii. **Big Creek Project Variant B: No Capacity Increase**

If SCE performed only the reconductoring component of the Big Creek Project to comply with CPUC General Order 95 and there was no CASIO-identified reliability need and SCE therefore did not propose upgrades to substation terminal equipment, the project would not have resulted in any transmission capacity increase. (The existing terminal equipment would have continued to limit the capacity of the entire circuit.) As a result, no portion of the project would be submitted into the CAISO's TPP for review and approval. Again, however, SCE would have been obliged to inform the CAISO of the change in transmission line characteristics so that the information could be taken into account in future planning processes.

iv. **Big Creek Project Variant C: Solely Meeting a Need Identified in the Transmission Planning Process**

If there had been no maintenance requirement¹¹ and SCE proposed to construct both the reconductoring of the four circuits and the terminal upgrades all exclusively to meet a need identified in the transmission planning process, the project would need to be reviewed and approved in the CAISO's TPP. To move forward, SCE would have been required to submit the project to the CAISO through the Phase 2 Request Window as a proposed solution to a CAISO-

¹¹ As per the Transmission Control Agreement, Appendix C, defines Maintenance as "Maintenance as used herein, unless otherwise noted, encompasses inspection, assessment, maintenance, repair and replacement activities performed with respect to Transmission Facilities" and section 6.3 places the maintenance responsibility on the PTO: "Each Participating TO shall inspect, maintain, repair, replace, and maintain the **rating and technical performance** of its facilities under the CAISO's Operational Control..." [emphasis added]

identified need.¹² The CAISO would then review the project to determine whether the proposed solution met the identified reliability need in the more efficient or cost effective manner.¹³ If the CAISO selected the project as the more efficient or cost effective solution, it would then be included in the draft transmission plan and subject to CAISO Board of Governor approval.

Commission Question 4: Explain how any incremental or incidental increases to transmission capacity are accounted for by each PTO in relation to “asset management” activities, and how these increases in transmission capacity are communicated to CAISO.

PTOs must communicate any increase in transmission system capacity to the CAISO during Phase 1 of the TPP to allow the CAISO to develop base cases for the planning studies conducted in that cycle. PTOs with a PTO Service Territory are also required to conduct their own reliability studies and provide the CAISO with “all information relating to the studies performed” under CAISO Tariff Section 24.4.6.2.

In addition, Section 4.2.3 of the TCA requires PTOs to submit updates to the CAISO Transmission Register for addition or removal of a transmission line and any change in a transmission line or associated facility’s rating.

¹² CAISO Tariff Section 24.4.3.

¹³ CAISO Tariff Section 24.4.6.2.

Commission Question 6: Do CAISO's tariff or BPMs provide guidance and clarity to CAISO PTOs regarding what transmission-related maintenance and compliance activities/facilities must be considered and reviewed through CAISO's TPP? If so, please list the relevant sections.

Yes, generally transmission-related maintenance and compliance activities are not considered and reviewed through the CAISO's TPP because the CAISO performs those transmission planning activities for those facilities under its operations control, as authorized by CAISO Tariff Section 24.¹⁴ Specifically, the CAISO evaluates reliability, economic, public policy, and other needs specified in its tariff at both the local level (low voltage facilities within a single PTO's footprint) and at the regional level (high voltage facilities). The CAISO cannot evaluate and approve transmission work that is not specified in CAISO Tariff Section 24.

CAISO Tariff Sections 24.4.5 and 24.4.6 detail the categories of transmission solutions that the CAISO must review and/or approve through the TPP. These categories include (1) Merchant Transmission Facilities – CAISO

¹⁴ If the CAISO identifies a transmission need anywhere on the system, in evaluating possible solutions the CAISO will communicate with the participating transmission owners to determine whether they are undertaking any maintenance projects in the area. The CAISO will then take that work into account in determining the most cost effective or efficient solution to meet the identified need. If the CAISO does not identify any reliability (or other CAISO Tariff-recognized) need in an area, the CAISO will not consider what capital maintenance-type work is occurring in that area. The CAISO notes that Order No. 1000 contemplated that regional planners would only assess whether there is a more efficient or cost-effective regional solution than the proposed local solution. *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, 136 FERC ¶ 61,051, (2011), at P 154 (Order No. 1000). *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, 139 FERC ¶ 61,132 (2012), at PP 102, 182-92 (Order No. 1000-A.) Unless transmission owners seek regional cost recovery for their new local facilities, Order No. 1000 does not direct regional transmission planners to undertake a *de novo* review of projects that come up through the local planning process. Order No. 1000-A at PP 182,190. The CAISO does not adjudge the prudence of the maintenance, safety, and compliance work that transmission owners undertake. Further, certain work identified in the complaint does not involve facilities under the CAISO's operational control (e.g., IT and automation upgrades, computers, and office furniture).

Tariff Section 24.4.6.1; (2) Reliability Driven Solutions – CAISO Tariff Section 24.4.6.2; (3) Location Constrained Interconnection Facilities – CAISO Tariff Section 24.4.6.3; (4) Solutions to maintain the feasibility of Long Term CRRs – CAISO Tariff Section 24.4.6.4; (5) Large Generator Interconnection Project Network Upgrades – CAISO Tariff Section 24.4.6.5; (6) Policy-Driven transmission solutions – CAISO Tariff Section 24.2.6.6; and (7) Economic transmission solutions – CAISO Tariff Section 24.4.6.7. The CAISO does not evaluate transmission activities that fall outside of these specified categories.

Reliability, policy, and economic solutions form the bulk of the transmission projects reviewed and approved through the CAISO's TPP. The CAISO identifies reliability-driven solutions "required to ensure System Reliability consistent with all Applicable Reliability Criteria and CAISO Planning Standards."¹⁵ The CAISO has developed transmission standards that specify the applicable North American Electric Reliability Corporation (NERC) and Western Electric Coordinating Council (WECC) reliability criteria and impose CAISO-specific reliability criteria that exceed or complement NERC and WECC criteria.¹⁶ The CAISO identifies policy-driven solutions by evaluating whether transmission is "needed to meet state, municipal, county or federal policy requirements or directives as specified in the Study Plan."¹⁷ To date, the CAISO has only approved policy-driven solutions to meet the state of California's renewable

¹⁵ CAISO Tariff Section 24.4.6.2.

¹⁶ See California ISO Planning Standards, effective November 2, 2017 (<http://www.caiso.com/Documents/ISOPlanningStandards-November22017.pdf>).

¹⁷ CAISO Tariff Section 24.4.6.6.

portfolio standard requirements. The CAISO identifies economic transmission solutions based on a cost-benefit test. For the CAISO to approve an economic solution, the benefits of the transmission solution must outweigh the costs. The benefits of the solution may include a “reduction in production costs, Congestion costs, Transmission Losses, capacity or other electric supply costs resulting from improved access to cost-efficient resources.”¹⁸

Separately, the TCA defines maintenance activities and specifies that the PTOs are responsible for these activities. TCA Section 4.3 provides that the PTOs are responsible for operating and maintaining the transmission lines and associated facilities placed under the CAISO’s operational control in accordance with the TCA, applicable reliability criteria, and CAISO operating procedures and protocols. TCA Section 6.3 requires PTOs to inspect, maintain, repair, replace, and maintain the rating and technical performance of their facilities under the CAISO’s operational control in accordance with the applicable reliability criteria and performance standards established under the TCA. Appendix C of the TCA defines maintenance as “inspection, assessment, maintenance, repair, and replacement activities performed with respect to Transmission Facilities.” The TCA does not require that non-expansion, non-reinforcement, maintenance and compliance-type projects be approved through the CAISO’s TPP.

¹⁸ CAISO Tariff Section 24.4.6.7.

III. CONCLUSION

The CAISO appreciates this opportunity to clarify the issues discussed at the May 1 Technical Conference.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service list for the above-referenced proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California, this 31st day of May, 2018.

/s/ Grace Clark

Grace Clark