

**TANC COMMENTS**  
**ON THE CAISO'S 2019-2020 TRANSMISSION PLANNING PROCESS**

The Transmission Agency of Northern California (TANC) appreciates this opportunity to provide comments on the California Independent System Operator's (CAISO) 2019-2020 Transmission Planning Process (TPP) preliminary reliability results and mitigation presented at the stakeholder meeting on September 25-26, 2019. TANC's primary focus related to the TPP is for the protection of and the maximization of the transfer capability of the California Oregon Transmission Project (COTP) and the California Oregon Intertie (COI) or Path 66. TANC is the majority owner of the COTP which is operated in coordination with the CAISO controlled grid under terms of agreements, with the other COI owners (Pacific Gas and Electric Company, Western Area Power Administration and PacifiCorp), that govern COI operation. The COI represents an extremely valuable and important part of the Western US and California grid for: (1) allowing access to economic, clean, reliable and flexible energy that helps maintain grid reliability, (2) supports regional electricity markets, (3) helps meet California's clean energy goals, and provides capacity and/or Resource Adequacy (RA) for the California market.

Maintaining high transfer levels on COI will continue to be important to reliable operation for the CAISO and for regional Balancing Authorities throughout the Western US as dispatchable and baseload resources are further limited due to plant retirements, evolving policy goals, and severe weather conditions challenge grid operators. To this end, transmission planning which would seek to maintain (or increase) the transfer capacity ratings of the COI is desirable, while actions or inactions which would limit the transfer capabilities are detrimental for TANC, CAISO, and the entire Western US regional market.

TANC's comments in this proceeding fall into two basic categories. First, TANC provides specific comments on the technical studies. Second, TANC provides more general comments and suggestions on the studies underlying assumptions and the appropriate goals of the TPP.

With respect to the technical studies, TANC's comments are as follows:

1. TANC supports and commends the CAISO for the COI Nomogram sensitivity studies that were performed on the 2029 summer peak case with COI flows in the north-to-south (N-S) direction and the 2029 spring off-peak case with the COI flows in the south-to-north (S-N) direction. The sensitivity studies provide additional insight into the power flow thermal results, potential mitigation solutions, and unique relationships in the COI S-N studies that exist between specific system limitations to the output of localized hydro generation systems.

2. In the summer peak load studies with COI at 4,800 MW N-S, an overload resulted on the Round Mountain -Table Mountain 500-kV line following the outage of the adjacent Round Mountain -Table Mountain 500-kV line. This overload was also found to be the most limiting in the COI N-S Nomogram sensitivity study. To mitigate this reliability issue, the CAISO listed either to reduce COI N-S flows or to bypass the series capacitor on the overloaded Round Mountain -Table Mountain 500-kV line.

TANC suggests indicating specifically that the bypassing of the series capacitors would be a part of a new Remedial Action Scheme (RAS) as described in past CAISO TPP studies. Also stated in past comments, TANC supports the addition of this proposed new RAS since this would not only improve COI N-S transfers during high northern California hydro conditions; but also, more importantly, during the many planned maintenance outages that occur on the bulk transmission system annually and impact COI transfer capability.

In addition, TANC suggests adding the reduction of local generation to the potential mitigation solutions listed for this thermal overload in the assessment results. As shown in the COI N-S Nomogram sensitivity, reducing Colusa generation and Hatchet Ridge generation is also effective in mitigating the overloads.

3. In the off-peak load studies with COI flows exceeding 3,300 MW S-N, an overload resulted on the Olinda 500/230-kV transformer following the loss of the Round Mountain 500/230-kV transformer and vice versa. The proposed mitigation for these overloads is to reduce COI S-N flows.

TANC suggests that the CAISO further investigate the relationship between the hydro generation output from the Shasta and Pit river systems to the impacts resulting across the Olinda and Round Mountain 500/230-kV transformers. The CAISO pointed out in the COI S-N Nomogram sensitivity that the resulting loading on the Olinda 500/230-kV transformer significantly depends on the Shasta generation output. It would be equally important to understand if the Round Mountain 500/230-kV transformer overload is primarily driven by the Pit river hydro output.

If reducing the generation from these regions is determined effective in mitigating these overloads in the reliability assessment cases, TANC suggests including details of the findings in the subsequent 2019-2020 TPP studies.

4. Also, in the off-peak load studies (with COI flows exceeding 3,300 MW S-N), the results indicated an overload on the Table Mountain 500/230-kV transformer following up to twenty different system outages. The proposed mitigation for these overloads is to simply

reduce COI S-N flows.

The Table Mountain 500/230-kV transformer overload was also the most limiting condition in the COI S-N Nomogram sensitivity studies. The CAISO identifies the relationship between the overload and the output of the Hyatt and Thermalito hydro generation. The CAISO also pointed out that the resulting loading on the Table Mountain 500/230-kV transformer significantly depended on the Hyatt and Thermalito generation output.

TANC suggests that the CAISO further investigate the relationship between the Hyatt and Thermalito generation output to the overload resulting on the Table Mountain 500/230-kV transformer. If reducing the generation from these plants is determined to be effective in mitigating the overload in the reliability assessment cases, TANC suggests including details of the findings in the final TPP report.

The COI S-N Nomogram was developed in operations in 2019 as a result of the high COI S-N demand that occurred during February and March of 2019. At that time, resources from California were exported over COI to assist in the reliable operation of the Pacific Northwest (PNW) system as an extended cold front had hit the PNW region while the availability of regional hydro resources was limited. To maintain a high COI S-N transfer capability for those times most needed, a further understanding of the relationship between the limiting facilities and the output of localized hydro generation systems will be needed.

With respect to the studies underlying assumptions and the goals of the TPP process, TANC's comments are as follow:

TANC believes that robust regional transmission is critical to supporting reliability, the ongoing development of regional markets (Energy Imbalance Market (EIM) and Extended Day-Ahead Market (EDAM)), and meeting capacity requirements to serve load (including RA in CAISO). Thus, current mitigation schemes that relieve overloads through interregional flow reductions, and in particular, by curtailing flows on COI, are at odds with meeting the overall goals noted above and need to be consistent with contractual obligations among the COI owners. In instances where limiting interregional flows are proposed as solutions in the TPP, TANC suggests other alternatives be evaluated.

The TPP studies should consider known system challenges and be consistent with findings in other CAISO or regulatory proceedings. For example, the CAISO has recently provided comments and analysis in the California Public Utilities Commission's (CPUC) Integrated Resource Planning (IRP) proceeding detailing specific near- and long-term issues and proposed solutions. Specifically, the CAISO's October 2, 2019 Comments to the CPUC in Rulemaking 16-02-007 make several recommendations to the CPUC including support of: (1)

4,700 MW of incremental procurement; (2) planning and procurement for the retirement of the Diablo Canyon Power Plant; (3) procurement of incremental resources that support renewable integration and specifically address operational issues presented by the CAISO; (4) use of import assumptions commensurate with the RA program; and (5) recognition that RA and operational needs are at the system level and are not unique to the SCE Transmission Access Charge area. The TPP's modeling assumptions should incorporate this information and other CAISO analysis and work that provides guidance and insight regarding future system needs.

In summary, TANC appreciates the opportunity to comment on the technical aspects of the current TPP studies. TANC believes that the TPP could be improved by incorporating additional data and information on both the base case assumptions used in the model (e.g., CPUC's various data sets) and on the sensitivity analyses conducted (e.g., incorporate more significant variations in generation, load, transmission, transmission outages and other inputs). The CAISO is the correct agency and the TPP is an appropriate forum for the CAISO to lend its insights and understanding of the regional grid to be proactive and seek to address future challenges before they have a chance to become crises. The proposed solutions identified in the TPP should not default to relying on mitigation schemes that reduce interregional transfer capability and, to the extent transmission solutions are identified, should recognize the long lead times necessary for implementing transmission solutions. TANC's obligation is to ensure that its interstate transmission resource remains available for efficient use by TANC and its Members which in-turn complements the state's goals for reliability, regional markets and additional state policies. TANC looks forward to continuing to be an active stakeholder and offering our input to the CAISO in this critically important effort.