

TANC COMMENTS
ON THE CAISO'S DRAFT 2019-2020 TRANSMISSION PLAN
FEBRUARY 21, 2020

The Transmission Agency of Northern California (TANC) appreciates this opportunity to provide comments on the California Independent System Operator's (CAISO) Draft 2019-2020 Transmission Plan (DTP) published on January 31, 2020, and the subsequent stakeholder meeting held on February 7, 2020.

TANC's comments are summarized below and discussed in more detail in these comments.

- TANC strongly supports the addition of the California-Oregon Intertie (COI) Nomogram sensitivity study in this year's DTP and agrees on the importance of maintaining the current COI rating.
- Regarding the North-to-South (N-S) Study, TANC supports the recommended solution of installing a Remedial Action Scheme (RAS) that will bypass the series capacitors on Round Mountain–Table Mountain 500 kV lines to prevent the thermal overload.
- Regarding the South-to-North (S-N) Study, TANC (1) suggests that CAISO remove the first paragraph on page 83 as it appears to be intended for the COI N-S flows section, (2) agrees that the primary driver of the Table Mountain 500/230-kV transformer overload is low regional load and Northern California Hydro (NCH) generation levels also located in the region, and (3) agrees that the output of the Shasta and Keswick hydro generation could impact the thermal loading on the Olinda 500/230-kV transformer during off-peak load conditions and high COI S-N flows, but suggests the CAISO use a broader narrative since other generation within the region also have a similar impact.
- Regarding the reliability studies, TANC (1) strongly supports the recommended mitigation option of implementing the RAS to bypass the series capacitors on the overloaded Round Mountain-Table Mountain 500 kV line, (2) agrees that the option of reducing COI N-S flows according to the seasonal Nomogram was not an appropriate solution, and (3) suggests adding the base case thermal loading of the Table Mountain 500/230-kV transformer to the Thermal Overloads Table in Appendix C.

1. Nomogram/Hydro Dispatch

TANC strongly supports the addition of the COI Nomogram sensitivity study in this year's Transmission Planning Process (TPP) and firmly agrees with the importance of maintaining the current COI rating in the long-term planning horizon. With regards to the results and related discussion in the draft TPP, TANC provides the following comments.

North-to-South (N-S) Study

In the COI Nomogram N-S study, the most limiting P1 contingency listed and discussed in the draft report was the Round Mountain -Table Mountain 500-kV line outage due to the resulting thermal overload on the adjacent Round Mountain -Table Mountain 500-kV line. This has been a known limitation for COI N-S transfers that has historically resulted in the TPP reliability studies. Since the P1 outage would be the most limiting for COI N-S transfers during normal operation, TANC supports the CAISO recommended solution of installing a RAS that will bypass the series capacitors on Round Mountain –Table Mountain 500 kV lines to prevent the thermal overload.

South-to-North (S-N) Study

TANC appreciates the CAISO including the COI S-N nomogram study since the COI S-N Nomogram recently created in 2019. For that reason, the relationships between the COI S-N transfers, NCH generation levels, and system load to the system limitations are less understood as those captured in the much more thoroughly studied COI N-S nomogram. However, TANC would like to make the following comments and suggestions that pertain to the narrative that summarizes the results of the COI S-N study in the DTP on pages 83 to 85.

- Remove from page 83, paragraph 1 of the “S-N flows on COI” section: The paragraph appears to be misplaced and intended for the COI N-S flows study section.
- Table Mountain 500/230-kV transformer overload: TANC agrees with the CAISO’s conclusion that the primary driver of the Table Mountain 500/230-kV transformer overload is low regional load and NCH generation levels also located in the region.
- Olinda 500/230-kV transformer overload: TANC agrees that the output of the Shasta and Keswick hydro generation could impact the thermal loading on the Olinda 500/230-kV transformer during off-peak load conditions and high COI S-N flows. However, TANC suggests that the CAISO use a broader narrative since other generation within the region also has a similar impact.

2. Reliability

Regarding the CAISO draft TPP 2019-2020 reliability studies, TANC provides the following comments and suggestions.

PG&E Bulk Peak Load study with COI transfers N-S

The resulting overload of the Round Mountain -Table Mountain 500-kV line following the P1 outage of the adjacent Round Mountain -Table Mountain 500-kV line is a well-known limitation for COI N-S flows, which has been identified in past CAISO TPP studies for some time now. The COI N-S Nomogram sensitivity study also found this to be the most limiting P1 outage.

TANC strongly supports the CAISO’s recommended mitigation option of implementing the RAS to bypass the series capacitors on the overloaded Round Mountain-Table

Mountain 500 kV line. This option has been studied in previous TPP studies and determined to be an effective solution.

TANC agrees with the CAISO's conclusion that the other option of reducing COI N-S flows according to the seasonal Nomogram was not an appropriate long-term planning solution for this thermal concern. Since the Round Mountain -Table Mountain 500-kV line overload is also the limitation driving the COI N-S Nomogram, limiting the COI via the seasonal Nomogram is not a valid long-term option.

PG&E Bulk Peak Load study with COI transfers S-N

The Table Mountain 500/230-kV transformer overload was found to be the most limiting in the COI S-N Nomogram sensitivity study and identified in the Off-peak load study following 22 different outages listed in Appendix C. Several of the results in Appendix C indicate that the thermal loading was "<P0". The notation itself is understood, but the base case thermal loading (P0) is not provided in the overall thermal results. TANC suggests that the base case thermal loading (P0) of the Table Mountain 500/230-kV transformer be added to the Thermal Overloads Table in Appendix C as a footnote for the Off-peak load study.