Western Area Power Administration-Sierra Nevada Region
Comments on CAISO's 2021-2022 Transmission Planning Process
Reliability Study Preliminary Results
October 12, 2021

The Western Area Power Administration-Sierra Nevada Region (WASN) appreciates this opportunity to provide comments on the California Independent System Operator Corporation's ("CAISO") 2021-2022 Transmission Planning Process ("TPP") Reliability Assessment Results and proposed mitigations as presented at stakeholder meetings on September 27-28, 2021.

WASN owns, operates, maintains, and plans transmission facilities in northern California that are used to reliably deliver hydroelectric power to the Central Valley Project, Washoe Project, local utilities as well as federal end-users. WASN also maintains ownership of 500 kV facilities that are part of the Pacific AC Intertie. It is the operator of the California-Oregon Transmission Project (COTP) 500 kV line, and a party to the California-Oregon Intertie ("COI") Owners Coordinated Operations Agreement (OCOA) and the COI Path Operator Agreement.

WASN's primary interest is in maintaining and improving reliability of its transmission system and supporting similar efforts for neighboring systems also within the northern California region. To this end, WASN is most interested in the CAISO TPP reliability studies for areas adjacent to the WASN transmission system and the 500 kV bulk system in northern California.

WASN would like to submit for consideration, the following comments to the CAISO's 2021-2022 TPP preliminary study results and proposed mitigation for the PG&E Bulk System and North Valley Area.

PG&E Bulk System Reliability Study

WASN recommends that CAISO includes additional clarity regarding the simulation mechanics and proposed mitigation for the P3 (G-1/L-1) Outages that resulted in thermal overloads on the 500 kV system. In the preliminary results there were several P3 (G-1/L-1) outages that included the loss of one Diablo unit that resulted in thermal violations for multiple 500 kV and 230 kV facilities in northern California with proposed mitigation for the outage to reduce COI flows.

WASN does not disagree with these results. However, it should be mentioned that the outages were simulated as simultaneous N-2 outages but not as an overlapping N-1-1 outages that allows for system adjustments following the first event per TPL-001. WASN has simulated this outage with the data provided by CAISO and noticed that the COI north-to-south pick-up was significant following the first outage of the Diablo unit. As expected, the higher flows on COI then resulted in new or exacerbated overloads on the 500 kV system following the next L-1 outage when the P3 outage is simulated as N-2. However, simulating the outage as an overlapping N-1-1 outage and reducing COI flows to the pre-contingency level following the first outage of the Diablo Unit, will reduce the resulting thermal loading following the second L-1 outage to that resulting from the related P1 outage.

In addition, the voltage collapsed in the 2023 summer peak case for the P3 outage of the Diablo 1 unit and the Round Mt. -Table Mt 500 kV line when the Round Mt. -Table Mt. RAS was tested as potential mitigation option in the CAISO study. This voltage collapse appears to have occurred because the FACRI RAS was not simulated. The FACRI RAS would have been expected to operate given the significant voltage dip at Malin following the P3 outage when it is simulated as N-2.

WASN supports the Round Mountain -Table Mountain 500 kV line RAS to mitigate the thermal impacts of the Round Mountain STATCOM project to avoid adverse impacts to COI N-S transfer capability. As mentioned in other forums, WAPA supports the Round Mountain STATCOM project and acknowledges the past CAISO studies that have demonstrated the reliability need for additional voltage support that the project will provide. However, the current plan for interconnecting the project results in the exacerbation of the post contingency loading on the remaining Round Mountain -Table Mountain 500 kV line following an outage of the adjacent Round Mountain -Table Mountain 500 kV line. This impact is evident in the CAISO preliminary results of the 2026 and 2031 Summer Peak cases that include the project when comparing the results of the 2023 Summer Peak study that does not include the project. The studies with the project indicate an increased loading of between approximately 9% to 13% when compared to the results of the 2023 Summer Peak study that does not include the project. The Round Mountain -Table Mountain 500 kV line outage and thermal limitation on the adjacent transmission line is one of the most limiting conditions on COI N-S transfers.

The Round Mountain -Table Mountain 500 kV line RAS has been proposed in past CAISO TPP studies, but it has yet to be approved. This RAS or another solution will be needed to mitigate the thermal impacts of the approved Round Mountain STATCOM project. Otherwise, there will be adverse impacts to COI N-S transfer capability and by extension California import capability.

PG&E North Valley Area Reliability Study

WASN supports the proposed upgrades to the protection systems at the Round Mountain and Cottonwood substations needed for reliability. The preliminary results of the North Valley area study clearly indicated the reliability need for protection upgrades at Round Mountain and Cottonwood following the P5 outages. The reliability concern identified would also directly impact the WASN system. WASN agrees with the CAISO's proposed mitigation solution that the reliability concern can be addressed by upgrades to the protection system.

WASN would be glad to participate in any mitigation efforts to offer its expertise with the goal to address the underlying reliability concern.