

TANC COMMENTS
ON THE CAISO'S 2015-2016 TRANSMISSION PLANNING PROCESS

The Transmission Agency of Northern California (TANC) appreciates this opportunity to provide comments on the California Independent System Operator's (CAISO) 2015-2016 Transmission Plan November 16, 2015 stakeholder meeting primarily detailing results of the policy and economic studies. TANC is encouraged that the 2015-2016 economic studies are starting to reflect a more realistic estimate for congestion on the California-Oregon Intertie (COI) and/or full system; however, we remain concerned that the current approach still does not accurately reflect existing and future conditions and the current approach for this critical transmission path underestimates flows and congestion on the COI.

Summary of TANC Comments

1. TANC recommends that the CAISO Transmission Plan include proposals for PG&E to implement mitigation measures or make upgrades to the Delevan-Cortina 230-kV line, Round Mountain-Table Mountain 500-kV lines and the Round Mountain-Cottonwood 230-kV lines.
2. The CAISO economic assessment does not adequately account for the impact of routine and seasonal maintenance outages. The planning process should be informed by routine planned maintenance (insulator washings, breaker maintenance, etc.) and make allowance for unplanned outages affecting the system operating limits (SOLs) on major studied import and export paths. While it is desirable that most elective maintenance can be deferred to low usage periods, historic operating experience shows that this is not always possible. As noted below, the 2015 Operating Procedures show more outage scenarios that impact the COI transfer limit.
3. TANC requests that the CAISO quickly (before the January release of the next draft) make the study results of its 50% RPS special studies case available and provide additional study results supporting the removal of the 11 PG&E area projects already described and the 19 projects still under review, previously approved by the CAISO.

Economic Studies

The 2015-2016 CAISO economic studies shows a low level of congestion for the COI that is far removed from historical levels of congestion and its concurrent costs (although above levels shown in prior TPP studies). The presentation from the November 16, 2015 meeting indicated 266 hours of congestion in 2020 and 94 in 2025, with just \$718,000 and \$252,000 in respective costs. The following table shows the historical amount of congestion as indicated in the annual Market Monitoring Reports as well as this year-to-date as indicated from the

CAISO Open Access Same-time Information System (OASIS). As shown below the economic results presented at the TPP meeting differs significantly from the historical levels as reported by the CAISO's Department of Market Monitoring.

	Congestion Costs ISO COI (\$mil)	# of Hours¹	% of Hours²
2009	49.9	438	5%
2010	41.2	964	11%
2011	49.5	1,139	13%
2012	84.7	3,689	42%
2013	34.0	1,844	21%
2014	88.7	2,190	25%
2015 Through Nov	35.2	2,119	26%
Total	342.1	10,075	20%

¹ The # of Hours is the percentage of Hours times 8760 or 8784 for a leap year, except for 2015 which is the actual hours.

² The % of Hours is the maximum of the % of hours indicated for COTPISO and PACI in the indicated sources.

Sources: For 2009, 2010 and 2011, "2011 Annual Report on Market Issues and Performance," CAISO Department of Market Monitoring, p. 133. For 2012, 2013 and 2014 "2014 Annual Report on Market Issues & Performance," p. 145. 2015 is from the CAISO OASIS website, <http://oasis.aiso.com>.

TANC understands that the CAISO TPP modeling methodology used for the economic studies assumes that everything is online and all transmission facilities are operational. While we agree that this approach provides a "best case" scenario, and is appropriate for a potential planning horizon, history indicates that it is not a likely scenario for the COI. The following table shows the actual percentage of time that the transfer capability from North to South on the COI has achieved 4,800 MWs.

	COI Transfer Limits (MW)		
	% of Hours		
	4800	> 4000	> 3200
2009	3.3%	39.5%	74.6%
2010	8.0%	50.2%	91.0%
2011	13.5%	59.6%	89.7%
2012	13.3%	35.1%	63.2%
2013	22.2%	50.7%	93.7%
2014	31.4%	49.7%	79.6%
2015	38.1%	75.9%	90.3%

Source: Bonneville Power Administration website

<http://transmission.bpa.gov/Business/Operations/Paths/default.aspx>

TANC is also concerned that based upon the 2015 Operating Procedures for COI, outages on numerous facilities in northern California can have a major impact on the COI transfer capability. This may lead to more hours in the future where 4,800 MW cannot be achieved and lower transfer capability in general when different facilities are out for maintenance.

TANC would note that this issue is not confined to COI, but is an issue with many of the most frequently congested and costly paths, such as Path 15, Path 26 and the Nevada-Oregon Border (NOB). As such it may be appropriate for the CAISO to consider some sensitivity studies on the major paths within its BAA that are more reflective of operating realities. Specifically, scenarios that would limit the amount of transfer capability based on both historical information as well as any known future restrictions that may occur for routine maintenance under the existing operating procedures. TANC notes that the WECC provides several variants to the base case that the CAISO uses for its economic studies that could be incorporated into these sensitivity studies.

Recently approved economic projects such as the Devers-Colorado River Project and Harry Allen relied heavily on capacity value to make them economically viable, and not on the mitigation of congestion costs. The valuation of capacity should be given more consideration in the determination of which paths are to be considered. TANC believes that the CAISO should reconsider the methodology it employs in its economic studies in future study cycles that could look at historic performance and/or sensitivity studies. At congestion cost approaching \$350 million over the past seven years on the COI alone, additional studies seem appropriate, warranted and necessary.

At the meeting on November 16 the CAISO also presented preliminary information related to the 50% special studies case and mentioned nineteen previously approved PG&E projects that are currently under review for possible cancellation. TANC would urge the CAISO to release information related to these two topics as soon as possible and not wait until the late January release of the Draft Transmission Plan to allow stakeholders to better understand the results. With regard to the cancelled projects, TANC would recommend including more detail rather than less.

With respect to previously approved projects in the PG&E area, it is TANC's understanding that the Table Mountain-Rio Oso 230-kV Line Project is to be completed by December 2019 (according to the CAISO's 2009 TPP report this Project was planned to be in-service in 2011). However, studies done as part of the 2015-2016 TPP show overloads on this line in both the 2020 and 2025 summer peak studies. TANC suggests that, in addition to taking steps to

cancel “unnecessary” projects, the CAISO should become more active in assuring that approved projects are completed on a timely basis.

TANC also notes that the 2015-2016 TPP study results contain the following information on impacted facilities and potential solutions for mitigating the noted impacts.

Impacted Facility(ies)	Critical Outage(s)	Potential Mitigation Solutions
Delevan-Cortina 230-kV line	Several P1, P4, and P7 outages	Reduce Colusa generation or upgrade the line
One Round Mountain-Table Mountain 500-kV line	Other Round Mountain-Table Mountain 500-kV line	Bypass series capacitors in overloaded line or reduce COI transfers
Round Mountain-Cottonwood #2 and #3 lines	Table Mountain-Tesla and Table Mountain-Vaca Dixon 500-kV lines	Upgrade the two lines or reduce COI transfers

Based on recent studies done by a joint study group involving the CAISO, PG&E, TANC, and numerous other parties, TANC recommends that the CAISO and PG&E:

- Implement an SPS that would curtail the Colusa generation or upgrade the Delevan-Cortina 230-kV line
- Implement an SPS that would bypass series capacitors to mitigate impacts on the Round Mountain-Table Mountain 500-kV lines
- Initiate the activities to upgrade the Round Mountain-Cottonwood 230-kV lines