

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR TRANSMISSION PLANNING
STANDARDS REVISIONS – FINAL DRAFT PROPOSAL**

**COMMENTS OF THE STAFF OF THE CALIFORNIA
PUBLIC UTILITIES COMMISSION**

* * * * *

August 11, 2014

The Staff of the California Public Utilities Commission (“CPUC Staff”) appreciates this opportunity to provide comments on the California Independent System Operator’s (“CAISO”) proposed *Revision to ISO Transmission Planning Standards* as described in the July 16 Final Draft Proposal. CPUC Staff understand and partly support the proposed approaches regarding non-consequential load dropping for Category C contingencies and regarding San Francisco Peninsula extreme event risks, but have specific concerns in both areas as summarized below.

Nonconsequential Load Dropping for Category C Contingencies May be Generally Undesirable in “Dense Urban Areas”, but Should be Allowed on a Case-Specific Basis Where Appropriate.

It is not in ratepayers’ best interest to have the CAISO’s hands tied in a manner that forces uneconomic infrastructure investments or an overly narrow consideration of options.

The CAISO currently proposes that its Transmission Planning Standards would categorically disallow nonconsequential (controlled) load dropping to address any Category C (multiple outage) contingency in a “dense urban area” defined as a U.S. Census Bureau-designated urbanized area having a population of one million or greater. These areas encompass diverse electrical, physical, and socioeconomic circumstances, and CAISO should not be unnecessarily bound to a rigid planning standard that does not allow consideration of unique circumstances.

The majority of Californians reside in “dense urban areas” as being defined. (Based on CPUC staff review of 2010 census information, 64 percent of California’s population resided in such areas.) The CAISO points out that conditions in such areas often make nonconsequential load dropping for Category C contingencies undesirable, such as due to the potential for disrupting

critical services heavily relied upon by many facets of an urban society. However, for some electrical contingencies in some “dense urban” areas, nonconsequential load dropping may be an appropriate mitigation – especially where the MW of load dropping is limited and does not significantly harm critical services, restoration is likely to be fast, and the probability of the precipitating multiple transmission outage is low.

Therefore, nonconsequential load dropping for Category C contingencies should be considered to be available in “dense urban areas” on a case-specific basis. Avoidance of nonconsequential load dropping could be the *default*, but not the categorically required choice. A categorical requirement could necessitate approval of high cost transmission upgrades to address extremely low probability events having limited consequences.

The CPUC Staff Agrees San Francisco Peninsula May Warrant Further Unique Consideration for Extreme Event Risk Mitigation, but Such Studies Must Sufficiently Quantify Risks and Risk Mitigation Relative to Mitigation Costs (and Relative to Other Risks) and Must Take Into Consideration Environmental Feasibility of Mitigation Options.

CPUC Staff agrees that the San Francisco Peninsula may warrant consideration for mitigation of extreme event risks, and appropriate studies to illuminate both the risks and the cost-effectiveness of mitigation measures can be valuable. Such studies must be subjected to critical cross-disciplinary validation that takes into consideration more than just electrical system impacts.

Such studies should also make it objectively clear why the San Francisco Peninsula uniquely requires consideration of extreme event mitigation. In this regard, the CAISO has pointed out “unique characteristics” of the San Francisco Peninsula including high density urban loads, “geographic and system configuration”, certain risk drivers (especially earthquakes), and “challenging restoration times.” However, it is not objectively (and perhaps not intuitively) obvious that (or why) special extreme event mitigation studies are needed here but not anywhere else.

The CAISO should thus demonstrate semi-quantitatively and/or relatively (relative to other risks) that the combination of physical event *probability*¹ and event *consequence*² translates into a

¹ such as regarding earthquakes of certain locations and magnitudes

² e.g., amounts and types of load loss, length of restoration time such as due to undergrounding and geologic properties

total risk (expected societal impact) that falls in a range that clearly warrants consideration of mitigation. Such demonstration might be based in part on analogy or historical precedent with other risks that we do (or do not) mitigate, such as more conventional risks due to higher probability outages combined with load growth, or due to other (perhaps less complex) extreme events.

Additionally, before pursuing mitigation measures that are costly and potentially challenging for environmental permitting:

- The CAISO should open a consultation process with State of California emergency planning officials to work cooperatively on the extreme event planning. For example, certain extreme events may damage not only key electric infrastructure but also (1) the loads it would serve, and (2) infrastructure associated with or needed by contemplated mitigation measures.
- The CAISO should provide information to the State of California on the mitigation alternatives under consideration so that those alternatives can be screened for environmental feasibility, roughly analogous to the recent screening of SONGS area transmission options prepared by ASPEN. The CAISO should then consider feedback on which alternatives to pursue further, and which alternatives are highly likely to be completely infeasible for social or environmental reasons.
- The CAISO should consider whether a combination of non-transmission alternatives including long-duration storage and demand-side measures could help address reliability needs especially during a restoration period, reducing the need for major transmission solutions.
- The CAISO should continue to review and pursue no/low regrets measures that can help mitigate extreme event impacts but that also provide substantial value under less extreme (higher likelihood) conditions.

Contacts:

Keith White, kwh@cpuc.ca.gov