COMMENTS OF THE STAFF OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION

ON TRANSMISSION PLANNING STANDARDS REVISIONS

Regarding the revised draft posted May 28 and discussed in a June 4 webconference

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June 18, 2014

The staff of the California Public Utilities Commission ("CPUC Staff") appreciates this opportunity to comment on the May 28 revised draft of the California Independent System Operator's ("CAISO") proposed revisions to Transmission Planning Standards. We appreciate the additional clarification provided in the revised draft. Our comments briefly cover (1) aspects of proposed formal preclusion of controlled load shedding for Category C contingencies in "dense urban areas" and (2) concise delineation of why the San Francisco Peninsula warrants unique status and studies regarding low probability high consequence events.

1. "High Density Urban Areas" Where Controlled Nonconsequential Load Shedding is Proposed to be Precluded as a Mitigation for Category C Contingencies Should be <u>Clearly Defined Electrically</u>, and Load Shedding Should Still be Considered if Warranted by Case-Specific Circumstances.

The CAISO proposes to formally preclude controlled nonconsequential load shedding for Category C (multiple outage) contingencies in "dense urban areas". Those areas are defined as statistical *Urbanized Areas*¹ (*UA*) having a population of at least one million ("large UA"), as illustrated by a map on page 6 of the May 28 revised draft proposal.

How the definition of "dense urban areas" (large UA) for load shedding purposes would be applied *electrically* should be clarified, ultimately including more detailed maps. For example, must the load that would be dropped fall within a large UA, and would this be identified based on substations? How *much* of the dropped load needs to be within the large UA?

¹ This appears to refer to metropolitan (population 50,000+) areas the geographic "delineation" of which is conducted by the U.S. Office of Management and Budget (OMB) by applying published standards to Census Bureau data.

How much of that load needs to be in a *CAISO member* service territory? Does it matter whether the transmission element(s) contributing outage contingency or overload/violation are located within the large UA? What if there are ways to control the load shedding that do not involve significant load in a large UA?

As is clear when viewing the map on page 6 of the revised proposal, large UAs can encompass diverse electrical, socioeconomic and physical conditions. Controlled load shedding should not be categorically precluded for Category C contingencies in such "dense urban areas" without considering fundamental risk, impact, and mitigation cost factors, similar to what the CAISO describes as appropriate for other parts of the grid. This represents both fairness and cost-effectiveness. Risk- and impact-related information might clearly and even readily rule out load shedding for Category C contingencies in an area meeting the "dense urban" definition, but this should not be prejudged.

 Justification of Unique Focus on the San Francisco Peninsula for Extreme Event Studies Should Include a Clear Internally Consistent and Generalizable (to Other Areas) Framework or Table Showing the Explicit Linkage of (Events/Probabilities → Electrical Outage → Outage Exacerbating Factors)... That in its Entirety Presents Unique Risk.

In the May 28 Revised Draft of the CAISO's *Revision to ISO Transmission Planning Standards*, the CAISO proposes to identify the San Francisco Peninsula as having "unique characteristics" that "form a credible basis for considering for approval corrective action plans to mitigate the risk of outages that are beyond the application of mitigation of extreme events in the reliability standards to the rest of the ISO controlled grid." In confidential Appendix D to the 2013-2014 Transmission Plan and in the separate confidential document *San Francisco Peninsula Area Unique Characteristics and Risk of Extreme Events* the CAISO describes several types of credibly unique circumstances. It is presumably the *entirety* of these circumstances, including their *linkage* (they are causally connected and could reasonably all occur together) that creates the unique situation justifying special studies and consideration of mitigation measures.

Thus, to the proposed justification of special status for the San Francisco Peninsula the CAISO should add a concise, structured presentation (such as a table) of the sequential causal chain: credible events and probabilities \rightarrow credible electric outage (MW, locations) specifically

arising from those events \rightarrow exacerbating consequences credibly associated with those outages (such as long restoration times or heavy disruption of critical services). Such a synopsis might entail approximations or ranges, but it should be internally consistent. In other words, the presented outage levels (and their locations/probabilities) should be clearly consistent with the postulated causal events (and their probabilities), and the outage exacerbating factors such as restoration times or loss of critical services should be clearly consistent with the outages. This synopsis would support appreciation of how the San Francisco Peninsula rises above extreme event situations *elsewhere* on the grid. It should be suitable for translation to other parts of the grid, where it would presumably demonstrate lower need for "special status." It could also provide foundation for a study methodology based on a broadly similar but more detailed causal chain.

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