

**Comments of Powerex Corp. on Draft Generator Contingency & RAS Modeling
Revised Straw Proposal**

Submitted by	Company	Date Submitted
Mike Benn 604.891.6074	Powerex Corp.	April 5, 2017

Powerex appreciates the opportunity to comment on CAISO’s March 15, 2017 Generator Contingency & Remedial Action Scheme Modeling Revised Straw Proposal (“Draft Proposal”). In the Draft Proposal, CAISO proposes to enforce a preventative constraint in its day-ahead and real-time markets that will reserve transmission capacity to account for changes in flows associated with generator loss and remedial action scheme (“RAS”) operation. CAISO explains that such transmission capacity reservations are necessary to ensure secure grid operations, and that this is currently achieved through manual interventions by its operators. The Draft Proposal is intended to reserve the necessary transmission capacity directly within the market optimization, reducing the need for manual intervention and reflecting the cost of positioning the system to account for generator contingencies and RAS operations in locational marginal prices (“LMP”). In addition, CAISO offers two potential solutions to protect against the possibility that enforcement of the constraint will result in Congestion Revenue Right (“CRR”) revenue inadequacy:

- CAISO will enforce its proposed constraint when conducting its simultaneous feasibility test of the CRR market in the same manner as the constraint will be enforced in the day-ahead market in the relevant season and time of use; or
- CAISO will de-rate paths in the CRR market based upon the maximum amount of transmission capacity that would need to be reserved in a given month based on historical data.

Powerex supports CAISO’s efforts to reduce the need for out-of-market action by modeling generator contingencies and RAS operations in its day-ahead and real-time markets. Powerex believes that CAISO’s proposal will enhance reliability by including in the market optimization the need to position its system so that transmission facilities will not overload in the event that a generator contingency or RAS event occurs. Powerex also believes that CAISO’s proposal will appropriately reflect in LMPs the reliability benefits that are provided by resources participating in RAS. In particular, the output of resources participating in RAS does not contribute to congestion on post-contingency constraints (since the resource is armed to take remedial action in the event of such a contingency). It is therefore appropriate that the congestion component of its LMP is different from that of resources that do not participate in RAS, even at the same location.

Powerex also appreciates CAISO's decision to proactively consider steps that it can take to align implementation of the proposed constraint across the day-ahead, real-time, and CRR markets.

Regarding CAISO's specific CRR-related proposals, Powerex believes that de-rating CRRs based upon the maximum amount of transmission capacity needed to address generator and RAS operations in a given month would be unduly conservative and could impede the ability of market participants to obtain CRRs to manage congestion charges in connection with physical power deliveries. Powerex believes concerns related to CRR revenue adequacy can be addressed in a manner that does not unnecessarily restrict the CRRs made available to market participants. As an alternative to reduce the quantity of CRRs available in the annual and monthly auctions based on the "worst-case scenario" in a particular month, Powerex believes that it would be more effective to consider "de-rating" CRRs on a day-to-day basis to reflect expected transmission availability.

More specifically, each day, prior to the deadline for submission of IFM bids, CAISO could volumetrically reduce the effective quantity of CRRs outstanding to reflect the quantity of transmission that it anticipates reserving to address generator contingencies and RAS operations in the upcoming day-ahead market run on a given day. This approach would align, on a daily basis, the quantity of CRRs that will receive congestion revenues with the quantity of transmission capacity that will be made available in the day-ahead market. Such an approach would likely ensure a higher level of revenue adequacy than could generally be expected through any global de-rate applied in the annual or monthly CRR auctions, which lack the daily and hourly granularity and also rely on information farther in advance than the day-ahead market. Critically, however, the daily de-rate under Powerex's proposed approach would be communicated to CRR holders prior to submitting day-ahead bids or self-schedules, which would allow CRR holders to adjust their physical use of the grid in light of their exposure to congestion charges.