

PG&E's Comments

Generation Contingency and Remedial Action Scheme Modeling Issue paper

Submitted by	Company	Date Submitted
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PG&E appreciates the opportunity to comment on the California ISO's (CAISO) Issue Paper on "Generator Contingency and Remedial Action Scheme (RAS) model," dated April 19, 2016. In summary of CAISO's Issue Paper:

- 1) **N-1 security including loss of generation**
 - a) **Transmission security for transmission contingencies:** will be addressed by Contingency Modeling Enhancements (CME) initiative.
 - b) **Transmission security for generator contingencies:** Generation loss could dramatically impact flows and even cause operating limit exceedances and violations.
- 2) **Current contingency reserve procurement**
The ISO currently defines Ancillary Service (AS) regional constraints to reflect transmission limitations between regions within the balancing authority area footprint. The AS regional constraints do not consider more localized limitations to ensure sufficient deliverable contingency reserve procurement.
- 3) **Infeasible contingency reserve procurement**
Contingency reserves could be procured behind a transmission path with an emergency rating that would prevent the eventual deployment of those reserves.
- 4) **Insecure transmission given the potential loss of generation**
A transmission path would be overloaded above its emergency rating after the loss of a generator and subsequent deployment of contingency reserves.
- 5) **Uneconomic dispatch given RAS generation loss**
Many of the Remedial Action Schemes (RAS) in the ISO involve the loss of a transmission element along with the subsequent loss of all or a portion of generation. If not explicitly modeled in the market, the ISO may be producing an uneconomic dispatch behind certain constraints

In response, PG&E offers the following comments and clarification questions:

- PG&E is interested in this initiative as it could improve procurement of reserves and bring more transparency to the market by reducing exceptional dispatches. PG&E looks forward to more details regarding the proposed methodology so that it can consider the potential costs of implementing systems to deal with the market changes. Also, information on the current

level of exceptional dispatches to deal with procuring reserves that are not trapped by transmission constraints would help in assessing the benefits that could be provided by the increased solution complexity. This would help PG&E determine whether it can support the proposal.

- PG&E requests more detail on the interaction (and potential overlaps) between this initiative and the related components of the Contingency Modeling Enhancements initiative. Specifically, PG&E seeks detailed information about selected RAS and CME scenarios. Do they match or are there differences among them? If they differ, how it will affect the CRR component of the CME design?
- PG&E requests that CAISO indicate the number of generator contingencies to be modeled in this initiative. Also, it will be very helpful to understand the selection criteria.
- PG&E requests that CAISO clarify whether it proposes to replace the current off-line zonal AS deliverability studies used to specify zonal Ancillary Service (AS) requirements by including energy and AS deliverability constraints in the market commitment and dispatch functions using the mechanisms to be developed under this initiative.
- PG&E is concerned about the potential impacts on the size of the data and process interfaces (both for CAISO's successful implementation as well as impacts on market participants).
- PG&E requests that CAISO to provide a statistical view of existing exceptional dispatches related to each component of this initiative and how they will be reduced by the proposed solution in the straw proposal.
- PG&E requests that CAISO adds a market simulation to its design steps presenting the efficacy of the solution methodology on cost effectiveness.