

**Western Power Trading Forum Comments on Generator Contingency and Remedial Action Scheme Modeling
Straw Proposal issued on November 7, 2016.**

Carrie Bentley, Resero Consulting for WPTF, 916 217 1571, cbentley@resero.com

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WPTF appreciates the opportunity to provide comments on the G-RAS Straw Proposal and Revised Issue Paper. In general we are supportive of the direction of the initiative and are looking forward to the next draft which is expected to include additional details on the preventative constraint and how the Congestion Revenue Rights processes will need to be adjusted to accommodate these changes.

WPTF supports adding a preventative constraint to maintain transmission security during loss of generation due to RAS operation.

WPTF notes that today the CAISO maintains emergency ratings on effected elements through numerous ad hoc and varying PI¹ screens and excel calculations that involve operations personnel having to actively monitor transmission elements without any automated control. Operators then have to exceptionally dispatch resources (out-of-market dispatch) to maintain security, which risks reliability and fails to price physical generator movement into the LMP. It is unclear whether the CAISO is proposing at this time to include a preventative constraint for loss of generator or only loss of RAS generation. WPTF supports initially implementing a preventative constraint initially for loss for generation due to RAS operation and then determining whether additional modeling is needed.

The methodology to include the preventative constraint into the LMP seems reasonable; however, WPTF disagrees with any premise that the LMP is providing a signal for generators to invest in RAS additions.

The methodology described in the November 7 paper appears reasonable. The key appears to be that loss of generation with the RAS element does not impact the emergency rating and so is not impacted by the preventative constraints additional congestion component to the LMP. This leads to the potential for two generators at the same node to be priced differently. Another way to think about the LMP methodology is the line emergency rating is actually the emergency limit plus output from the RAS generator. Therefore, the RAS generator has no impact on the binding constraint.

WPTF asks for the following clarifications to be made in the next draft:

- The executive summary states that the CAISO intends to model loss of generation. WPTF is unclear whether this is actually the case.
- Whether the constraint will be in the day-ahead and real-time market.
- How exactly the preventative constraint will be included in the CRR model.

¹ <http://www.osisoft.com/Presentations/How-the-PI-System-Supports-California-ISO-Operations-and-Grid-Reliability/>