

Western Power Trading Forum comments on Frequency Response Straw Proposal

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WPTF appreciates the opportunity to provide these comments on the CAISO's Frequency Response Straw Proposal dated October 16, 2015, call held on October 19, 2015, and Technical Appendix posted October 21. We also note that the technical appendix was helpful and would appreciate further technical details be included in an updated appendix as they are developed. Our comments, using the ISO provided template format, are as follows.

Frequency Response Standard

The ISO believes the straw proposal and its accompanying technical appendix covers the standard's requirements for compliance purposes. The ISO is endeavoring to provide sufficient information to stakeholders for effective evaluation of the ISO's proposal. The ISO seeks comments on whether any unresolved questions on the standard and the ISO's obligation still exist.

Comments: WPTF believes that the straw proposal and more notably, the technical appendix, have provided sufficient information on the standard itself. However, neither paper provides sufficient information on the *proposal* for WPTF to provide detailed feedback or support.

Frequency Response Drivers

Several factors contribute to the primary frequency response performance of participating generators having governors. The ISO discusses some of the main drivers of PFR performance in Section 4.2 of its straw proposal. These factors include (1) magnitude of frequency deviation, (2) amount of synchronous on-line capacity providing sustained PFR, and (3) headroom available from that connected on-line capacity.

The ISO is evaluating what additional data points would need to be included in its Masterfile or through other mechanisms to facilitate a market tool or product to be designed. The ISO seeks comments on what factors influence a generators ability to provide PFR in the event of a frequency disturbance and the pieces of information necessary to estimate expected PFR.

Comments: As noted in the above answer, it is difficult to comment on additional information or data points that should be included in the market tool or Masterfile given the lack of detail surrounding design and intent of the proposed tool. WPTF highly encourages the ISO to produce another draft prior to the draft final proposal

Above the proposed tool is described as a “market tool.” WPTF is unsure whether this is the same tool described previously as an “out-of-market tool” that would be used by operators to determine the amount of reactive power need in the near-term (also described below as the “look ahead” tool?) WPTF has different recommendations depending on the purpose of the tool and what the ISO would do with the tool results.

Without additional information, WPTF cannot provide feedback at this time except to note the following:

- A simple version of a “look ahead” tool could be to use static data to determine a simple formula that fixes the total MW value of frequency response the grid must have in any hour.
- A simple alternative to gathering large amounts of onerous information (including governor control system data) from scheduling coordinators in order to predict the amount of frequency response each resource could provide, is to simply allow the generator to bid in an amount each hour and hold the resource financially responsible for the provision of that amount.
- Any look ahead tool should have its methodology and outputs fully transparent in real-time. This is of great importance to WPTF as often these tools are opaque and developed after the stakeholder initiative is completed. Any tool that affects the market outcome as this one does vis a vis the spinning requirement needs to be completely transparent to all market participants.

Phase 1, addressing real-time deficiencies

The first step discussed in section 6.2.1 is to develop “look-ahead” tools to assess the PFR capability of the system at various time horizons in the future based on current system conditions. If the look ahead indicates an anticipated deficiency of PFR the ISO can take actions to address the deficiency. The ISO seeks comments on its proposal for addressing real-time PFR deficiencies for 2017 compliance period.

Comments: If WPTF understands the ISO’s proposal correctly, the first step from the ISO will be to increase the spinning reserve requirement or proportion spinning reserve that meets the spinning requirement. (WPTF is assuming the ISO is not counting regulation capacity as available to meet the frequency reserve requirement.) No other constraints will be added, i.e. this will be done without adding a resource constraint to limit the amount of spinning reserve a resource can provide to the amount of frequency response they can provide. The idea is simply to “see if this works” and if the market does not procure additional needed frequency response then the ISO will use the exceptional dispatch tool to directly procure additional frequency response capability.

WPTF seeks clarification in regards to timing of the use of the tool and the procurement of additional spinning reserves. If the ISO determines, for example, 4 hours ahead of

time that additional frequency response is needed, when will the incremental need be added to the spinning requirement and when will the ISO validate that additional MWs of spinning reserve were sufficient? In real-time any incremental ancillary services are re-optimized with energy every 15-minutes. It seems like the ISO will not know for certain whether there is sufficient frequency response on the system until the binding FMM interval procures the additional spinning reserve. The only way the ISO could ensure the additional spinning capacity would yield sufficient frequency response is by adding a constraint in resources (especially MSG) that have restricted frequency response to spinning reserve ratios.

Phase 1, tariff and interconnection revisions

The first step discussed in section 6.2.2 is to revise the tariff to include requirements for all participating synchronous generators with governors, not just those providing spinning reserves, to set governors to specified droop settings and deadbands, and to not override governor response through outer-loop controls or other mechanisms. The ISO seeks comments on the tariff revisions it is proposing to help the ISO ensure sufficient frequency responsive headroom and whether other revisions should be considered.

Comments: WPTF supports defined parameters for synchronous generators; including acceptable droop settings, non-responsive bandwidth and outer loop control system parameters. Once the ISO defines parameters, and generators are given the opportunity to modify systems, the CAISO should reevaluate the overall performance and the need for any performance requirements and non-compliance penalties.

Phase 1, ISO's practice of preserving operating reserve headroom

The first step discussed in section 6.2.3 is to revise the tariff to clarify the authority of the ISO to designate any reserve not previously identified as Contingency Only by a Scheduling Coordinator (SC) as Contingency Only reserves.

Comments: WPTF has no objection to this proposal, but requests clarification on why this is necessary. It is our understanding that non-contingent spin is only "released" and able to be dispatched as energy if the ISO has sufficient spinning reserves to meet the requirement. If the ISO's plan is to increase the requirement, why would the ISO need to designate incremental spinning reserves as contingent-only?

Phase 1, performance requirements

The first step discussed in section 6.2.4 is to include frequency response performance requirements for resources with governor control and frequency responsive capacity available. The ISO will continue to develop the details of a proposed performance requirement and seeks comments from stakeholders on an appropriate performance requirement.

Phase 1, allocation of BAL-003-1 non-compliance penalties

The first step discussed in section 6.2.5 is considering provisions for allocating any non-compliance penalties associated with BAL-003-1, should they be imposed on the ISO, to resources that should have provided more PFR than they actually delivered during frequency

events. The process discussed in ISO tariff section 14.7 applies to an allocation of any reliability-based penalty.

The ISO seeks comment on how it could apply these tariff provisions to BAL-003-1 compliance and whether it should explore additional tariff provisions beyond those set forth in section 14.7 to impose responsibility for penalties on any resource that fails to provide primary frequency response for which it has an obligation to provide.

Comments: WPTF requests additional details and has many concerns regarding this proposal. In general, there is significant risk in creating artificial performance thresholds. An example of how something that sounds reasonable in theory, but work out terribly in practice is the original regulation threshold created in pay-for-performance.¹ It is important to recognize within the policy that there are units or parts of units that will not respond to frequency perturbations – either because of operational conditions or because some mechanical governors have a response time lag- and will not provide a response in the evaluated time horizon.

Phase 2, long-term approaches

Phase 2 of the initiative will evaluate if a market constraint or product is better suited to competition for frequency response capability (Section 6.3 of straw proposal). Such market-based mechanisms could not be designed, approved and implemented by December 1, 2016, and therefore the ISO will need to consider them in a second phase of this initiative.

Comments: WPTF reiterates its skepticism that the current ISO proposal is implementable by December 1, 2016, but a simplified market product is impossible. Currently the ISO is proposing a complicated look-ahead tool, large data gathering efforts in Masterfile, and an after-the-fact check and penalties. A biddable ancillary service product would from an implementation perspective be a simple copy of the current ancillary service products software design and only require minor changes to Masterfile. If it requires additional time, WPTF suggests relying temporarily on exceptional dispatches while the product is finalized.

¹ http://www.caiso.com/Documents/DraftFinalProposal_PayForPerformanceRegulationYearOneDesignChanges.pdf
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