

# Memorandum

**To:** ISO Board of Governors  
**From:** Eric Schmitt, Vice President, Operations  
**Date:** May 9, 2012  
**Re:** **Decision on Dispatch Priority of Operating Reserves**

---

*This memorandum requires Board action.*

## EXECUTIVE SUMMARY

Management proposes to create functionality that would allow ISO operations to change the order of dispatch during major contingency events. Operating reserve capacity is procured by the ISO to ensure sufficient resources are available in case of a contingency event. Contingency events occur due to generation or transmission outages.

Currently during contingency events, the ISO economically dispatches both energy only resources and resources awarded operating reserve capacity. Management proposes to prioritize use of operating reserve capacity following a potential reportable disturbance on a system-wide or regional basis. A reportable disturbance is defined by NERC as a contingency that is greater than or equal to 80% of the most severe single contingency. The change in dispatch order is necessary because the ISO has observed that energy only resources respond more slowly than do resources with awarded operating reserves. The slow response of energy only resources during contingency events could lead to potential violations of reliability standards.

Management proposes the following motion:

***Moved, that the ISO Board of Governors approves the proposed tariff change regarding prioritization of operating reserves, as described in the memorandum dated May 9, 2012; and***

***Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.***

## DISCUSSION

The North American Electric Reliability Corporation Reliability Standard on Disturbance Control Performance (BAL-002-1) provides that:

- Reportable Disturbances are contingencies that are greater than or equal to 80% of the most severe single contingency
- The Balancing Authority shall
  - Activate sufficient Contingency Reserve to comply with the Disturbance Control Standard (DCS)
  - Return (within 15 minutes of a Reportable Disturbance) its ACE to
    - Zero, if pre-disturbance ACE was zero or positive or
    - Its pre-disturbance value, if pre-disturbance ACE was negative
  - Complete the Disturbance Control Recovery within 15 minutes of the start of the Reportable Disturbance.

As a balancing authority, the ISO must comply with the above requirements. Failure to do so may result in substantial financial and regulatory penalties. The current contingency dispatch does not differentiate between the capacity dispatched from certified and awarded operating reserves and capacity without awarded operating reserves. Tariff-defined operating reserve consists of spinning reserve and non-spinning reserve. Resources providing either product are required to respond within ten-minutes. Resources providing spinning reserve are operating and synchronized to the grid. Resources providing non-spinning reserve need not be operating or synchronized. In addition to procured operating reserves, in the event of a contingency, other resources that have capability can be utilized to aid in the recovery. The ISO market procures sufficient operating reserves for dispatch in the event of a real-time supply contingency.

Management has observed that energy only resources do not respond to real-time contingency dispatches as reliably or as quickly as resources with certified and awarded operating reserve capacity. Therefore, the ISO often dispatches more resources than necessary to resolve a contingency event. The additional resources help to ensure that sufficient capacity will respond to mitigate the risk of failing to meet the reliability standards.

Management also is concerned with how NERC and WECC might view a disturbance control standard violation under circumstances where the ISO relies on economic dispatch which relies more heavily on energy only capacity, rather than energy from operating reserve. This concern is underscored by a recent “lessons learned” guidance document issued by NERC to the System Operators.<sup>1</sup> In this guidance document, one recommendation is not to rely on economic dispatch during the recovery period and only return to an economic dispatch solution when the contingency has been resolved. Management proposes to implement this recommendation.

Management also proposes to develop an alternative contingency dispatch option to improve the responsiveness to disturbance control standard events by prioritizing operating reserve capacity. The improved contingency dispatch feature has tentatively been named, real time disturbance dispatch. The new functionality would include energy bids from operating reserve capacity as well as energy bids from non-operating reserve capacity to recover from a major disturbance control standard event caused by a major disturbance but will give priority to energy bids from resources with operating reserves over energy only bids. The real time disturbance dispatch will be deployable on a system wide or regional basis. The current contingency dispatch methodology of using economic dispatch for both operating reserves and capacity without operating reserves will be retained and would still be used for non-disturbance control standard contingencies.

The real time disturbance dispatch method would use in-market resources which would be prioritized in merit order where the price from the highest priced resource would set the market clearing price. The software would create two merit order stacks – one stack with operating reserves and a second stack with other energy only capacity. Each stack would be based on merit order.

The highest priced resource dispatched will be used to set the market price on a system-wide basis without losses or congestion. While it is possible that operating reserve capacity will have higher energy bid prices than non-operating reserve capacity, the ISO believes that relying on more reliable capacity for one or two ten minute intervals in order to timely recover from a disturbance control standard event justifies potentially higher market prices.

---

<sup>1</sup> May 4, 2011 NERC lessons learned document refers to an Area Control Error Event where in an Eastern Interconnect Balancing Authority area, the recovery did not meet the disturbance standard control requirement. Findings indicated that resources did not respond as expected and that the economic dispatch which contained decremental instructions was a contributing factor to the inability to recover in the required time.

## **POSITIONS OF THE PARTIES**

The general response and feedback from the stakeholder process has been supportive and mostly non-contentious.

Pacific Gas & Electric requested that the ISO report back to stakeholders how often potential disturbance control standard events occur and the pattern of generator response in such events from participating generation. The ISO agrees to perform the analysis and present it to the stakeholders during the Market Performance and Planning Forum twelve to fourteen months after this new method of deploying operating reserves is activated and in use by System Operations.

Southern California Edison submitted a suggestion that the ISO use prudent utility practice while meeting its reliability needs. Specifically, resources awarded operating reserve are procured for the loss of large resources, load forecast errors, forced outages and local area protection. The ISO agrees and indeed follows prudent utility practice per the guidance issued by both NERC and WECC.

Southern California Edison continues to oppose the proposal on the basis that the ISO will be allowing “out-of-market” resources to set market wide prices. NRG Energy, Inc. expresses a similar concern that prioritizing operating reserves will lead to energy only bids not being dispatched even though their energy bids were economic. The ISO is not proposing to use “out-of-market” resources but rather to use “in-market” resources, but prioritize the resources awarded operating reserve over energy only. The ISO would dispatch operating reserves in merit order and use the price from the highest price resource to set the market clearing price.

## **MANAGEMENT RECOMMENDATION**

Management recommends that the Board approve the proposal to develop an alternative contingency dispatch option that will prioritize use of operating reserves as described above. The new methodology will provide the needed flexibility to quickly respond to disturbance control standard events and mitigate the potential of not meeting the reliability standards. Management proposes to implement this functionality this fall.