



Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market & Infrastructure Development

Date: March 17, 2016

Re: **Decision on local market power mitigation enhancements proposal**

This memorandum requires Board action.

EXECUTIVE SUMMARY

The ISO's market design includes market power mitigation provisions to ensure that market participants cannot create uncompetitive energy prices in transmission-constrained areas. The ISO's local market power mitigation system measures the competitiveness of the market and mitigates market participant bids where and when necessary. This memorandum describes proposed enhancements to the local market power mitigation provisions. Although the current local market power mitigation provisions are very effective, Management proposes enhancements that can improve the accuracy of market power mitigation. These proposed enhancements are now possible due to technological enhancements in the ISO's market systems that enable the market systems to run faster.

The current real-time dynamic competitive path assessment and local market power mitigation work in a predictive manner. The congestion and competitiveness in each binding market run are predicted based on data from an earlier advisory run of the ISO's optimization and dispatch systems. When the results of the advisory run differ from the results of the binding run, this can result in under-mitigation or over-mitigation. The advisory and binding market runs can be different due to changes in the inputs to the two runs, such as load forecast or variable energy resource output. Under-mitigation can occur when constraints that do not bind in the predictive local market power mitigation run are subsequently binding in the financially binding interval. On the other hand, over-mitigation can occur when predicted congestion does not materialize in the financially binding market run.

Management proposes enhancements to the current system of measuring and mitigating market power in the real-time market to address potential under-mitigation and over-mitigation in the real-time 15-minute and 5-minute markets. These modifications are designed to significantly improve the accuracy of mitigation by

ensuring that mitigation is applied when constraints may be binding, while avoiding mitigation when constraints are not binding in the real-time market. The enhancements will be applied to real-time mitigation procedures within the ISO balancing area as well as to balancing areas in the energy imbalance market.

Management has determined that the proposed enhancements to the 15-minute market are limited process improvements that are within the ISO's current tariff authority, however, the proposed modifications to the 5-minute market require Board approval and tariff changes.

Management proposes the following motion:

Moved, that the ISO Board of Governors approves the local market power mitigation enhancements proposal, as described in the memorandum dated March 17, 2016; 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 AND ANALYSIS

Issue

The ISO's real-time market local market power mitigation system determines whether to mitigate suppliers' bids based on an advisory interval in the 15-minute market. The advisory interval is run prior to the binding interval that determines resources' dispatch instructions. If a resource's bid is mitigated in the 15-minute market advisory run, the mitigated bid is used for both the binding 15-minute market run and the 5-minute market dispatch. There is no additional analysis of the competitiveness of the 5-minute market. When the results of the advisory run differ from the results of the binding run, this may result in under-mitigation or over-mitigation. Under-mitigation occurs due to constraints that do not bind in the predictive local market power mitigation run but are subsequently binding in the financially binding interval for either the 15-minute market or the 5-minute market. In other cases, over mitigation may occur when congestion that results in local market power in the advisory run does not materialize in the financially binding market run.

Proposed change

Due to technological enhancements in the ISO's market optimization systems, Management has determined that the systems can now run fast enough to allow the ISO to run its market power mitigation procedures on the financially binding interval in the 15-minute real-time market. Therefore, Management plans to apply the local market power mitigation process to the financially binding interval in the 15-minute market. Management expects the planned change will significantly increase the accuracy of ISO's market power mitigation in the 15-

minute market. With the planned enhancement in place, the mitigation accuracy in the 15-minute market should be similar to the accuracy of the ISO's day-ahead market's local market power mitigation results. As reported in the 2014 Department of Market Monitoring Annual Report, day-ahead market congestion was accurately predicted 88 percent of the time, compared to 69 percent of the time for the real-time market under the current system. The improvement in the accuracy of the local market power mitigation in the 15-minute market is a result of eliminating errors in the inputs to the mitigation run. Eliminating errors to inputs such as load and renewable generation forecasts will virtually eliminate any over- or under-predicted congestion. With the proposed change to run the local market power mitigation and binding market run in the same interval, any changes in congestion between the local market power mitigation run and the binding 15-minute market run will be solely due to differences in the market solution between the run with unmitigated bids and the run with mitigated bids.

Management also proposes to apply the real-time local market power mitigation system to the 5-minute market, which is not done today. Today, the mitigated bids from the 15-minute market are carried over to the 5-minute market. Due to the shorter time lag between intervals in the 5-minute market, Management proposes to apply the market power mitigation on an advisory interval using the same method that is currently applied to the 15-minute market.

POSITIONS OF THE PARTIES

Most stakeholders support the proposed changes to the ISO's real-time local market power mitigation system. However, several market participants, including PG&E, SCE, SDG&E, and Western Power Trading Forum, expressed concerns about how the proposed enhancements could impact market run times, and possibly lead to increased instances of failed market solutions that require the ISO to resort to backup DC solutions. Management does not believe that the proposed changes will have an impact on the number of DC solutions. DC solutions are due to issues related to network modeling and therefore the changes to the local market power mitigation process should not impact the frequency of DC solutions. Moreover, the proposed changes will be thoroughly tested and only implemented when the ISO is confident in the performance of the market systems with the new design.

CONCLUSION

Management requests Board approval of the proposal discussed above. The proposed change will increase market efficiency by more accurately applying the ISO's real-time local market power mitigation provisions.