Memorandum

To: ISO Board of Governors

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

Date: February 9, 2012

Re: **Briefing on Local Market Power Mitigation Enhancements**

This memorandum does not require Board action.

EXECUTIVE SUMMARY

At the July 2011 Board of Governors meeting, the Board approved a set of enhancements to the ISO's local market power mitigation rules. The enhancements included a new local market power mitigation methodology and a dynamic competitive path assessment to identify competitive and noncompetitive transmission paths. To address implementation concerns, Management proposed a phased implementation of the new functionality. Under the phased implementation, the new local market power mitigation methodology would be implemented in both the day ahead and real time markets in spring 2012. During this same timeframe, the ISO would also implement the dynamic competitive path assessment functionality in the day- ahead market. However, due to the complexity of implementing the dynamic competitive path assessment in the real time market, Management proposed delaying the implementation of this functionality until fall 2012.

Some stakeholders argued that the phased approach for implementing the dynamic competitive path assessment could result in a higher number of uncompetitive paths and over mitigation of generation resources during the summer of 2012. Based on these concerns, the Board directed Management to conduct an analysis of the expected impacts of the phased implementation plan and report back on the findings.

The Department of Market Monitoring has completed the analysis using historical data. The analysis supports the proposed phased implementation schedule and demonstrates that the enhancements will result in significant increases in the accuracy of the local market power mitigation under each phase of the implementation. The increased accuracy should produce reduced levels of

mitigation even prior to the implementation of the dynamic competitive path assessment in the real time market.

DISCUSSION AND ANALYSIS

Background

In July, the Board approved proposed changes to the local market power mitigation rules set forth in the tariff. These changes would:

- Meet the requirement set forth in the September 21, 2006 FERC order to base the market power mitigation on *bid-in demand* rather than the current practice of using *forecast demand,*

- Incorporate design elements to reflect the implementation of convergence (virtual) bidding and new demand response resources;

- Improve the accuracy of bid mitigation in both the day-ahead and real time markets; and

- Incorporate *dynamic competitive/non-competitive path designation* into the LMPM process in place of the current practice of using a more static seasonal designation.

Management proposed a two phase implementation of dynamic competitive path assessment due to the complexity surrounding the implementation of the real time changes. The first phase was proposed to be implemented in the spring of 2012 along with the local market power mitigation enhancements and would include a dynamic competitive path assessment in the day-ahead market only. For the day-ahead market, a transmission path would be determined to be uncompetitive only if it fails the pivotal supplier test rather considering a path uncompetitive by default. Because the dynamic competitive path assessment would not be applied in the real time market in the first phase, the current approach using static path assessments would be applied in the real time market. Under the static path designation approach, each transmission path is deemed uncompetitive by default unless it is tested and found to be competitive in the current seasonal assessments that are performed by the ISO Department of Market Monitoring.

The second phase, scheduled to be implemented before the end of 2012, would add two dynamic competitive path assessments in the real time market; one in the hour-ahead scheduling process and a second in the 15-minute pre-dispatch process.

Analysis and Results

On February 8 the ISO published a report prepared by the Department of Market Monitoring that described the analysis conducted to project the impacts of the dynamic path assessment and new local market power mitigation methodology and the results of that analysis. The methodology used to conduct the analysis and results were discussed with stakeholders on February 13.

To perform the analyses, the proposed dynamic competitive path assessment approach and an approximation of the proposed new local market power mitigation methodology were applied to historical market outcomes for both the day-ahead and real time markets. The analyses focused specifically on the three-month period from July 1, 2011 through September 30, 2011. The results of the analyses indicated the following:

- **More accurate, less frequent mitigation in the day-ahead market.** Implementation of both the dynamic competitive path assessment and new local market power mitigation process in the day-ahead market resulted in reduced frequency of mitigation and increased accuracy of mitigation. The dynamic path assessment more accurately assessed local market power and reduced the frequency that binding transmission constraints are identified as uncompetitive by 28 percent. This resulted in a reduction in the frequency of mitigation over the study period. The new mitigation process mitigated more resources when local market power was identified, however it also eliminated “spurious”, or unintended mitigation that frequently occurs under the current structure, with the net impact being a thirteen percent reduction in the number of mitigated resources as compared to the current structure.

- **Using bid-in demand (including all convergence bids) in the day-ahead market power mitigation processes improved the accuracy of congestion prediction, which improved the accuracy of local market power mitigation.** The current day ahead local market power mitigation process does not consider demand or virtual bids, whereas the actual day ahead market does. Consequently, there is a disparity in observed congestion between the two processes where the mitigation process under-predicts 80 percent of the internal congestion that is observed in the actual day ahead market. Since under the current mitigation process, bids are only mitigated when congestion is identified on uncompetitive transmission constraint, the under-detection of congestion in this process can result in under mitigation. Over-identification of congestion in the current mitigation process also occurred, but was much less frequent.

- **The impact of implementing the new mitigation methodology in the hour-ahead scheduling process but maintaining the current static path designations (phase 1) results in increased mitigation accuracy.** For the hour-ahead scheduling process, the net impact of implementing the new mitigation process alone is a decrease in the frequency of mitigation of 48 percent compared to keeping the existing mitigation process through phase 1. This reflects not only a decrease in the frequency of mitigation, but also a dramatic improvement in the accuracy of mitigation. These results indicate that for the real time market, retaining the static path assessment combined with the implementation of the new mitigation process in phase 1 will improve the accuracy of mitigation and reduce the frequency of mitigation.

- **Implementing the dynamic path assessment and additional mitigation process jointly (phase 2) in the real time market provides additional accuracy over the interim (phase 1) implementation.** Introducing the dynamic competitive path assessment (and applying the new mitigation) in the 15-minute pre-dispatch reduces the under-identification of local market power from 20 percent to about 9 percent of instances. This greatly reduces the likelihood that local market power will be undetected and unmitigated.

As shown by the ISO's analysis, the dynamic path assessment, new mitigation method, and phased approach proposed by Management will result in improvements in accuracy and reduction in frequency of mitigation in phase 1 and additional improvements in phase 2. Therefore, Management intends to follow the phased implementation approach as presented in July.