

Memorandum

To: ISO Board of Governors
From: Petar Ristanovic, Vice President of Technology
Date: February 9, 2012
Re: **Market Initiatives Release Plan**

This memorandum does not require Board action.

EXECUTIVE SUMMARY

With the third anniversary of the new market design approaching in April 2012, Management intends to deploy enhancements that evolve the market and prepare for the integration of renewable resources. The spring 2012 release provides the software changes associated with *Enhancements in Local Market Power Mitigation* which will satisfy the FERC mandate to make improvements to the current market design. In the same timeframe, the *Regulation Energy Management* initiative allows non-generator resources to provide regulation service to support the integration of renewable resources. The spring 2012 release also includes changes in *Default Operations and Maintenance Adder Values*, the remainder of the *Multi-Stage Generator Modeling Enhancements*, and the activation of the *Reliability Demand Response Product*.

The fall 2012 release will complete the non-generator resource model by supporting non-regulation energy management and the third phase of *Data Release*, providing market data to enhance transparency of market results. Management is addressing pending regulation related to *FERC Order 745 Net Benefits Test*, *FERC Order 755 Pay for Performance Regulation* and *Greenhouse Gas Regulation* which may be mandated in this timeframe. Management will also address two additional market enhancements, including the *Transmission Reliability Margin* modifying an operational process and the *72-Hour Residual Unit Commitment* which is deferred from this year due to higher priorities.

Management intends to pace the release activities this year with focus on quality and in alignment with the technology roadmap. As a result, each market initiative will be assessed with the intended architectural framework in mind. While this may extend some efforts, the return will come in terms of improved system availability, common user interface, and reduced support costs.

Looking ahead to 2013, Management will start implementation of new market design changes proposed through the *Renewable Integration Market and Product Review*. Currently targeted in the spring of 2013 is the full implementation of *Dynamic Transfers* and the *Flexible Ramping Product*. In the fall of 2013, Management will implement the changes in bid cost recovery and lower the bid floor cap. Management will refine the release plan as the market initiatives progress through the stakeholder phase and implementation impacts and efforts are known.

THE RELEASE PLAN

Spring 2012 release

Enhancements in Local Market Power Mitigation

Management plans to simplify and improve the design for local market power mitigation in accordance with FERC mandate to address issues with the current design. Staff is currently testing the software design changes in an integrated test environment. Management is preparing to conduct market simulation in February with deployment on April 10, 2012. Staff is also preparing to report back to the Board on the impact of these enhancements with and without the dynamic competitive path assessment.

Regulation Energy Management

Regulation energy management is a proposed market enhancement to the rules the ISO uses for procuring regulation services. This enhancement will allow new types of storage resources, such as batteries and electric vehicles, to provide regulation service. Implementing regulation energy management will lead to increased participation in the ancillary service market by energy storage and demand response resources and will support the integration of additional renewable resources. *Regulation energy management* also allows new storage technologies to provide regulation energy over a continued sustained period.

Management is continuing to pursue a phased approach with market simulation planned in the spring and full deployment in the fall. The vendor delivered the software at the end of January and testing is underway. Management filed for extension of the date according to the phased approach.

Staff made significant progress in defining the non-generator resource model for regulation energy management as well as for non-regulation energy management; however market participants have questions related to dispatchable demand response resources. As a result, management has agreed to provide a workshop in February to work with market participants on this aspect of the non-generator resource model. All parties agree that this in depth review of the dispatchable demand response model will result in a better design, even if it delays the implementation.

Default Operations and Maintenance Adder Values

As part of the *bidding and mitigation of commitment costs* initiative which was presented to the Board in July 2010, the final proposal committed to a review and update of default operations and maintenance cost adder values every three years. Staff presented a survey of these values to market participants with a recommendation for new adder values to be implemented in the spring of 2013. The final proposal was approved by the Board in December and system changes are underway to be implemented on April 1, 2012.

Multi-Stage Generator Modeling Enhancements

The ISO implemented the multi-stage generation modeling functionality in December 2010 that optimizes the commitment and dispatch of generating units that have multiple operating configurations. Through analysis of commitment, dispatch and market outcomes for multi-stage generation resources, the ISO and stakeholders have identified potential refinements to the procedure. Management included one enhancement in the December 2011 monthly release and the remaining enhancements will be implemented in the spring of 2012.

Reliability Demand Response Product

The *reliability demand response product* is a wholesale demand response product that enables compatibility with, and integration of, existing retail emergency-triggered demand response programs into the ISO market and operations, including newly configured demand response resources that have a reliability trigger and desire to be dispatched only under particular system conditions.

The *reliability demand response product* was originally planned for deployment in the fall of 2011 to enable registration of reliability demand response resources and a market effective date of April 1, 2012. On August 26, 2011, FERC requested additional information on the reliability demand response product tariff amendment and the ISO filed a response on September 21. FERC requested additional information regarding the tariff filing. The ISO responded in December 2011 and is awaiting further direction from FERC. Management intends to execute an end to end market scenario through market simulation in February as a final preparation for activation. It is possible that the FERC order could require software revisions, which may in turn impact the schedule up to and including the April 1, 2012 implementation.

Fall 2012 release

Data Release Phase 3

Data release phase 3 is the final phase of an initiative established in 2009 to address the request of market participants to review the ISO's data release and accessibility policy following the implementation of the new market design. The objective is to

release data which will enable market participants to better understand market results and participate more effectively in the ISO market. Phase 3 will address additional market data which will further improve overall market efficiency. Software design is underway with the intent to deploy in the fall of 2012, leveraging architecture work to create a common user interface for all systems.

FERC Order 745 Net Benefits Test

Based on the compliance order, as of January 1, 2012 Management is proceeding to post supply curves and threshold prices associated with the demand response net benefits test, but did not implement the bidding rule that would reject bids below the threshold as determined by the net benefits test. The current process is manual and will be automated through system changes in the fall 2012 release.

FERC Order 755 Pay for Performance Regulation

FERC Order 755 requires the ISO to modify the compensation mechanism for regulation to include a performance payment with an accuracy adjustment in addition to existing capacity payment. FERC requires tariff language for the design to be filed in April 2012 and implementation by October 2012. Staff's assessment of the effort required to meet this order is very large with most market systems being impacted. At this time, it is unlikely that the October 2012 timeline can be achieved and management will take appropriate steps to request an extension.

Greenhouse Gas Regulation

Management is planning to start a stakeholder process in early 2012 to address the new regulations that go into effect in 2013 related to greenhouse gas policy. The stakeholder process would address changes required to include greenhouse gas costs as part of other changes in commitment costs. The greenhouse gas changes would need to be implemented on January 1, 2013.

Transmission Reliability Margin

Currently, the ISO implements certain adjustments to intertie schedules within operating hours. Using a mechanism known as *Transmission Reliability Margin*, the ISO will be able to anticipate these transmission constraints in advance by reflecting them in market processes before schedules are awarded in the hour-ahead scheduling process. This initiative will require tariff revisions and the staff is currently drafting the NERC required transmission reliability margin implementation document. The document will provide greater clarity regarding ISO management of transmission constraints in the real-time market. The system changes are planned to be implemented in the fall of 2012.

72 Hour Residual Unit Commitment

The 72-hour residual unit commitment is intended to improve economic efficiency and reliability by extending the unit commitment process to 72 hours, rather than the current process of 24 hours. It will automate extremely long start process that economically commits the extra long start units for the trade days after the next day. The

development of the base functionality is complete and testing is underway; however additional software changes are required. Accordingly, Management has moved the deployment date to fall 2012.

Spring 2013 release

Other market initiatives, such as full scope of *Dynamic Transfers* and *Flexible Ramping Product*, are being added to the release plan, populating the spring 2013 release timeline for full functionality.

Dynamic Transfer

Following an interim solution, the full implementation of dynamic transfers will extend the dynamic scheduling policy for pseudo-ties and develop solutions to issues affecting *dynamic transfers* as presently offered in the market, including both conventional resources and renewable intermittent resources. Staff has drafted the business requirements and will engage in a technical review with the vendor in February. Following the review, the business requirements will be posted for market participants to start their implementation planning efforts.

Flexible Ramping Product

In December 2011, staff deployed the flexible ramping constraint interim compensation methodology. In parallel, management committed to begin a stakeholder initiative to evaluate the creation of a flexible ramping product that will allow the ISO to procure sufficient ramping capability via economic bids. Through this initiative, the ISO is evaluating allocating costs to generation and load in accordance with cost causation principles. Management anticipates that a final draft proposal will be presented to the Board in May 2012 for approval, requesting implementation in spring 2013.

Fall 2013 release

Renewable Integration Market and Product Review Phase 1

The *renewable integration market and product review phase 1* has identified two areas of implementation: changes in the bid floor cap and changes in bid cost recovery. The impact assessment of these efforts is complete and implementation will begin as resources are available.

LOOKING FORWARD

By investing in the technology roadmap over the next two years, future market initiatives will be able to take advantage of a more robust architecture and consolidated system design. The release plan balances the investments in technology and market design with two releases per year, which is the pace agreed upon with market participants and other partners. Keeping a two year release horizon allows all parties to plan and execute with greater visibility and accuracy.