

Memorandum

To: ISO Board of Governors
From: Petar Ristanovic, Vice President of Technology
Date: March 15, 2012
Re: **Market Initiatives Release Plan**

This memorandum does not require Board action.

EXECUTIVE SUMMARY

Management continues to implement 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* and the remainder of the *Multi-Stage Generator Modeling Enhancements*. FERC rejected the proposed tariff changes for the *Reliability Demand Response Product*; therefore, it is deferred from the spring 2012 release.

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* 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, *Contingency Dispatch Enhancements* and the *72-Hour Residual Unit Commitment*. Further, Management is preparing for the inclusion of Valley Electric Association into the ISO control area. Management recommends deferring the *FERC Order 755 Pay for Performance Regulation* until the spring of 2013 due to the magnitude of changes required to meet the market design changes.

Also in 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 a FERC mandate to address issues with the current design. Staff successfully completed market simulation in February and is currently conducting a final regression test of the system changes. Based on FERC's approved, Management is moving forward with deployment on April 10, 2012.

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 and filed for extension of the date according to the phased approach. Management reports that functional testing is progressing according to plan and anticipates the start of market simulation on April 16, 2012 as planned.

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, the ISO facilitated a workshop in February to work with market participants on this aspect of the non-generator resource model. All parties agreed that more discussion is required, even if it delays the implementation. Management plans to continue this discussion while ensuring that the non-generator resource model is flexible enough to allow both positive and negative MW.

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 with a market effective date of April 1, 2012. On February 16, FERC rejected the reliability demand response product tariff amendment on the grounds that it did not comply with FERC Order 745 since reliability demand response resources are permitted to bid economically in the day-ahead market and are therefore not exclusively emergency triggered. Based on the order, Management will not implement the *reliability demand response product* in the spring 2012 release and is in the process of determining next steps.

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.

Greenhouse Gas Regulation

The California Air Resources Board is implementing a cap-and-trade program for greenhouse gas emissions starting in January 2013. Under cap-and-trade, an overall limit on greenhouse gas emissions from capped sectors, including electricity generating facilities, will be established and facilities subject to the cap will have to acquire allowances to emit greenhouse gases. By slowly lowering the number of available allowances, the cap-and-trade program is intended to reduce greenhouse gas emissions to 1990 levels by the year 2020, and ultimately achieving an 80% reduction from 1990 levels by 2050. Management started a stakeholder process to address the new regulation related to greenhouse gas policy as part of a more general set of commitments cost refinements. 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 to OASIS are planned to be implemented in the fall of 2012. The ISO is currently working on an interim solution so the transmission reliability margin can be utilized during the summer months when it is most beneficial.

Contingency Dispatch Enhancements

The ISO is proposing *Contingency Dispatch Enhancements* to improve grid operations relating to disturbance control standard events. The ISO proposes to modify its energy dispatch order so it can prioritize the real-time energy dispatch of resources that are certified and have been awarded operating reserves (spin and non-spin) over energy-only resources to recover from a disturbance control standard event. These enhancements are planned for 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. This approach will automate an 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.

Footprint Expansion

Management is also taking the appropriate measures to prepare for the planned inclusion of the Valley Electric Association into the ISO control area as of January 1, 2013. In addition to changes in the full network model, Management is planning to address other system and business process changes to incorporate the new load zone seamlessly into system operations.

Spring 2013 release

Other market initiatives, such as full scope of *Dynamic Transfers*, *Flexible Ramping Product*, and *FERC Order 755 Pay for Performance Regulation* 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 drafted the business requirements and engaged in a technical review with the vendor in February. Staff is currently preparing the detailed project plan and assigning development resources. The external business requirements will be posted in March 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.

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. Due to the scope and complexity of these proposed modifications, it is not possible to implement these changes by the October deadline. Management will be requesting authority from FERC to implement this enhancement in the spring of 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

Management acknowledges the continued fast pace of implementing market initiatives. Market participants have voiced concerns about the ability to keep up with these changes and the need to demonstrate a business case for making further investments. Management strives to find the most effective implementation for each proposed market design enhancement maximizing benefits while reducing costs.