Memorandum

To: ISO Board of Governors

From: Benjamin F. Hobbs, Chair, ISO Market Surveillance Committee

Date: November 7, 2018

Re: **Briefing on MSC activities from August 25 to November 4, 2018**

This memorandum does not require Board action.

During the period covered by this memorandum, the MSC held a general session meeting on September 28, 2018. Three ISO initiatives were on the agenda, including local market power mitigation enhancements; day-ahead market enhancements / 15-minute granularity; and reliability must run and capacity procurement mechanism enhancements. The presentations and discussions are briefly summarized below.

General Session Meeting of September 28, 2018[1]

1. Local market power mitigation enhancements

This initiative was also addressed in the August 3, 2018 MSC meeting. The agenda item started with a presentation by Mr. Donald Tretheway, Sr. Advisor-Market Design Policy for the ISO. His presentation summarized four sets of issues and the status of the policy developments concerning each. Most of the presentation and discussion focused on the first two issues below.

1. **The market power mitigation process for the real-time market**, in particular the potential for flows between balancing authorities in the energy imbalance market to reverse direction and for balancing authority exports to increase as a result of mitigating offers to below market clearing prices. The major concern raised was that outside of the California ISO, the energy imbalance market is a voluntary market without must offer obligations. It was noted that preventing changes in flow or exports would not be economically efficient, it was desirable to many balancing areas because of the market's voluntary nature. After Mr. Tretheway introduced this issue, there was significant discussion among MSC members and meeting attendees about this concern and how changes in exports and flows can arise due to changes in market prices from interval to interval. Mr. Tretheway summarized the ISO's idea of

[1]All presentations are available at http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=36B072DE-5004-43EF-BD4C-783F966EA911

recalculating the competitive price basis for setting mitigated bids and for implementing a nominal adder to the mitigated bid calculation. He then presented several illustrative examples of how the idea would work. This was followed by a discussion by MSC members and stakeholders of alternative ways in which mitigation could be targeted or changes in exports could be limited to prevent this from happening. MSC member Dr. Scott Harvey pointed out that there are potentially efficiency benefits arising from allowing some changes in flows and exports in a given market run because net load conditions will have changed from what was assumed in the corresponding advisory interval in the previous market run.

2. **The appropriate default energy bids for use-limited resources**, especially hydropower resources in the energy imbalance market that have energy limitations. The difficulties in determining default energy bids in this case were pointed out in the MSC Board memo of August 28, 2018, which summarized discussion of this issue that took place during the August 3, 2018 MSC meeting. These difficulties were further discussed by MSC members, ISO staff, and stakeholders. Conceptual difficulties raised included the relationship between the amount of storage (measured in months) and the relevant opportunity cost and probability of spillage.

3. **The need for reference level** adjustments to better capture natural gas price volatility, and to be applied to default energy bids for use-limited resources in the energy imbalance market. Examples of issues discussed included the possibility that day-ahead price indices may inaccurately characterize opportunity costs for hydro resources with short-term operating constraints, and that day-ahead indices may understate suppliers' actual real-time costs during times of high volatility.

4. **Adjustments to the list of gas price index publishers** within the tariff.

It is anticipated that the MSC will prepare a formal opinion on this initiative when it is brought to the ISO Board of Governors.

2. Day-ahead market enhancements, Phase 1: 15-minute granularity

Mr. Tretheway also made a presentation on Phase 1 of the day-ahead market enhancements initiative. The MSC anticipates submitting a formal opinion on Phase 1 at the time that the proposal is submitted to the ISO Board of Governors.

Mr. Tretheway presented a graphical illustration of why the present 1 hour granularity of the day-ahead market can result in inaccurate characterization of net load changes, particular during steep evening ramps. He summarized the operational advantages of a finer (15 minute) temporal granularity, and then reviewed the practical implementation challenges. One tradeoff highlighted in the MSC member and public comments was the tradeoff between moving the offer submission deadline one hour earlier (which means that forecasts will have more error) versus the operational benefits of a quarter-hour granularity.

Mr. Tretheway discussed the particular elements of the energy and ancillary service definitions and market processes that would be altered to accommodate 15 minute day-ahead granularity. There would also be design changes in the energy imbalance market. MSC member Dr. Harvey highlighted a concern about 15 minute energy transactions requiring a full hour of transmission services from neighboring balancing authorities, which could discourage 15 minute offers.

3. Reliability must-run and capacity procurement mechanism enhancements

As noted in the August 28, 2018 MSC Board memo, this ISO initiative is in response to recent increases in the need to retain capacity on the system, as well as manage shortfalls of resource adequacy procurement that have been experienced in the California market, in which less capacity has been designated in some areas than has been required to maintain reliable grid operations.

Mr. Keith Johnson, Infrastructure & Regulatory Policy Manager for the ISO and Mr. Gabe Murtaugh, Senior Infrastructure & Regulatory Policy Developer prepared a joint presentation on this initiative as a follow-on to their presentations and stakeholder discussions at the August 3, 2018 MSC meeting. They asked for discussion by the MSC and meeting attendees of six topics under this initiative:

1. **Role of Reliability Must-Run Agreements** ("RMR") in ISO market design. The ISO proposes to retain both RMR and the capacity procurement mechanism ("CPM"), because of their distinct and separate purposes. The presentation provided details on the circumstances under which each would be appropriate.

2. **Compensation for RMR resources,** in particular: (a) including a rate of return in compensation; (b) method for determining a rate of return; and (c) paying full cost of service versus going-forward fixed costs. Regarding (b), the issue of using utility rate-of-returns when a resource's tax circumstances may differ from a utility's was raised by MSC Chair Dr. Ben Hobbs. Cost-based bids are to include major maintenance adders and opportunity costs. Concerning (c), MSC Member Dr. Jim Bushnell discussed the questions and possible responses involved in determining whether a resource should recover its full (depreciated) costs or just its going-forward costs. Any payment between those two should encourage the resource to stay in the market, so the relevant questions are less about efficiency, and more concerned about fairness and precedent.

3. **Whether to have "Condition 1" as RMR option.** Condition 1 is proposed by the ISO to allow a resource to have, at ISO discretion and in limited circumstances, the right to make market-based offers and to retain the resulting market revenues. In this case, the resource would not be paid its full cost of service. The MSC members noted the efficiency benefits of providing an incentive to participate and bid efficiently into ISO markets. Extensive discussion ensued about the exact nature of the circumstances that this would be desirable, including the desire to streamline negotiations.

4. **Bidding rules for RMR resources,** especially whether they should have a must-offer obligation. The ISO presentation discussed this at length, including ISO procedures to substitute cost-based bids if a resource fails to make an offer.

5. **Prices for bids above the soft-offer cap prices** for the CPM Competitive Solicitation Process. The ISO presentation discussed the procedure for resources whose costs are not covered by the soft-offer cap, including the necessary approval (after-the-fact) by the Federal Energy Regulatory Commission.

6. **Application of CPM status to a whole resource,** rather than only part of a resource. This is proposed by the ISO because of concerns of the difficulties involved in untangling the CPM and non-CPM portions of the resource's operation, costs, and revenues.

This initiative will likely be the subject of a MSC Opinion, to be submitted to the ISO Board of Governors when it considers the initiative.