



**California ISO**  
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## **Final Proposal**

### **Exceptional Dispatch: Market Power Mitigation and Supplemental Pricing**

**California Independent System Operator  
Posted May 13, 2008**

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# Final Proposal Exceptional Dispatch

## 1 Executive Summary

The purpose of this initiative is to propose modifications to the pricing rules for Exceptional Dispatch in the California Independent System Operator (CAISO) Market Redesign and Technology Upgrade (MRTU) Tariff. CAISO seeks to obtain Board of Governors and Federal Energy Regulatory Commission (FERC) approval for the proposed revisions. Under the current Tariff, units subject to Exceptional Dispatch would be paid the higher of their Bid or LMP, or the higher of their Default Energy Bid (DEB) or LMP if they did not have a Bid in the Markets. Issues associated with this rule for Exceptional Dispatch pricing became a higher priority for CAISO recently as a result of the stakeholder discussions over the proposed pricing rules for the Interim Capacity Procurement Mechanism (ICPM), which were filed with FERC in February 2008. One issue was whether resources receiving an (unmitigated) Bid offer price through Exceptional Dispatch would accept an ICPM designation. Those discussions lead to a re-examination of the local or temporal market power that could be exerted by resources subject to Exceptional Dispatch, and instigated a mitigation proposal by the CAISO Department of Market Monitoring (DMM). At the same time, suppliers have raised concerns about revenue and price impacts of the mitigation, including effects on forward Resource Adequacy (RA) procurement and the adequacy of fixed cost recovery by units without capacity contracts or designations (i.e., that do not hold contracts for RA or Reliability Must-Run (RMR) or an ICPM designation) and that are subject to both mitigation and Exceptional Dispatch.

In response to these stakeholder concerns, CAISO issued a White Paper and then a Straw Proposal that proposed that MRTU Tariff modifications could include both (a) market power mitigation of Exceptionally Dispatched resources under specific conditions, and (b) in some Exceptional Dispatch situations, supplemental payments, either directly via a Bid Adder or daily capacity payment, or indirectly through loosened or “relaxed” Bid mitigation, to resources subject to mitigation but that do not have capacity contracts/designations. Similarly to other provisions in the MRTU, such as the \$24/MWh Bid Adder for Frequently Mitigated Units (FMU) and the ability of non-RA resources to offer their capacity into the Reliability Unit Commitment (RUC) at an offer price up to \$250/MW, the supplemental payments under Exceptional Dispatch are justified for purposes of contribution to fixed cost recovery.

Based on additional stakeholder input and further internal review, in this Final Proposal, CAISO proposes an approach for achieving such supplemental payments that balances stakeholder views and is consistent with incentives to offer into the MRTU markets and voluntarily accept ICPM designations. Specifically, the CAISO proposes to relax the mitigation rule for Exceptionally Dispatched resources without capacity contracts. Bids submitted by such resources will not be subject to mitigation until their Exceptional Dispatch revenues in excess of short-term variable cost recovery, as reflected in the resource’s Default Energy Bid (DEB) for the relevant

market and period, accrue up to a monthly revenue cap at the resource's monthly ICPM rate.

However, CAISO proposes that during the initial two months of MRTU, the CAISO use a more restrictive approach to providing supplemental payments to eligible resources, such that their Bids subject to mitigation will be augmented with a \$24/MWh Bid Adder which would allow supplemental revenues to accrue at a slower rate. After this initial time period, the relaxed mitigation will be implemented (and the Bid Adder removed). While the CAISO is committed to addressing modeling issues prior to start up, this phased approach will allow the CAISO to learn from actual market operations and to enhance the market models to minimize the need for Exceptional Dispatch. A two-month "grace period" will serve as a safeguard against extraordinary costs in the event of frequent Exceptional Dispatches during the initial two months of operations.

Finally, ICPM is due to expire in December 2010. Accordingly, CAISO proposes that the proposed rules for mitigation and supplemental pricing under Exceptional Dispatch also expire with ICPM and new rules, if needed, be considered on the basis of market experience at that time.

The CAISO's goal is to file the mitigation rules and relaxed mitigation under Exceptional Dispatch as proposed tariff revisions with FERC on June 6, 2008 (please see key milestones in the section below) and to propose an effective date coincident with the start of the MRTU markets. At the culmination of this stakeholder process, the proposal that is presented to the CAISO Board should be compatible with the MRTU market design, and strike a reasonable balance between the views of the CAISO stakeholders.

## **2 Process and Proposed Timetable**

The topic of Exceptional Dispatch pricing was discussed over several months during the end of 2007 and was also been raised by stakeholders in the ICPM proceeding before FERC. For information related to those prior discussions please refer to the documents posted on the CAISO website at:

<http://www.aiso.com/1c89/1c89d76950e00.html> and  
<http://www.aiso.com/1c7f/1c7fe9985c80.pdf>.

The timetable below provides an overview of the key milestones and associated dates in the current stakeholder process, including Market Surveillance Committee (MSC) review, Board review and filing with FERC.

### **Key Milestones for Exceptional Dispatch Process**

Stakeholder Review of Initial White Paper	
CAISO issues market notice announcing issue and first meeting	March 14, 2008
CAISO posts White Paper	March 21, 2008
CAISO posts conference call agenda	March 21, 2008

CAISO holds stakeholder conference call on White Paper	March 28, 2008
Stakeholders submit their written comments on White Paper	April 4, 2008
CAISO posts the written comments submitted on White Paper	April 7, 2008
<b>Second Review —Straw Proposal</b>	
Based on comments CAISO posts updated White Paper	April 14, 2008
Stakeholder meeting to discuss revised White Paper	April 15, 2008
Final set of comments due from Stakeholders	April 22, 2008
<b>Final Proposal</b>	
Based on stakeholder comments CAISO posts draft final proposal	May 6, 2008
<b>Develop MSC Opinion</b>	
MSC Stakeholder Meeting	April 11, 2008
Conference call with MSC Chair Frank Wolak	April 17, 2008
MSC posts the draft MSC Opinion	May 1, 2008
MSC holds a conference call to adopt the MSC Opinion	May 5, 2008
MSC submits to CAISO the adopted MSC Opinion	May 8, 2008
<b>Prepare Board Documents</b>	
Final Board documents to Legal	May 12, 2008
CAISO requests approval from Board to make tariff filing	May 22, 2008

The CAISO will send out a Market Notice once the Exceptional Dispatch draft tariff language is posted that will include the comment period and conference call information.

### **3 Overview of the Exceptional Dispatch Issue**

This section provides background on the current Tariff rules on Exceptional Dispatch and examines some of the potential market results depending on whether and how the current Tariff rules are modified. For purposes of convenience, the descriptive sections of this Straw Proposal (which builds on the prior White Paper) excerpt sections from the prior MPD discussion paper and DMM white papers, with attribution where appropriate.<sup>1</sup> In addition, the current Tariff language and excerpts from the FERC orders approving the tariff rules for Exceptional Dispatch and clarifying CAISO Exceptional Dispatch authority are in Attachment 1.

#### **3.1 Current Tariff Rules on Exceptional Dispatch**

Exceptional Dispatch provides the CAISO with the capability to manually commit and/or dispatch resources (generation and participating loads) that are not cleared through the market software to maintain reliable grid operations. Exceptional Dispatch also is used for various other functions that require a resource to be

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<sup>1</sup> Papers and comments on Exceptional Dispatch can be found at <http://www.caiso.com/1c89/1c89d76950e00.html> and <http://www.caiso.com/1c7f/1c7fe9985c80.pdf>.

dispatched outside of a market schedule. The Exceptional Dispatch instruction can be for forced start-up, forced shut-down, operation at minimum operating level, incremental energy or decremental energy. Exceptional Dispatch can apply to all types of units in the CAISO system, including those with an RA contract or ICPM designation, and hence have a must-offer requirement into the MRTU Integrated Forward Market (IFM), RMR units, and resources that do not have any of those contracts or designations. Currently, the MRTU Tariff allows resources with offers in the markets to be paid the higher of their offer, Default Energy Bid (DEB) price or the LMP when Exceptionally Dispatched. Resources without offers in the market are paid the higher of their DEB or the LMP. Bids taken for Exceptional Dispatch do not set LMPs.

Exceptional Dispatch is also an action taken by operators for the following reasons (see Section 34.9 of the CAISO MRTU Tariff in Attachment 1):

- address transmission related modeling limitations,
- perform Ancillary Services testing,
- perform pre-commercial operations testing for Generating Units,
- mitigate for Over-generation,
- provide for Black Start,
- provide for Voltage Support,
- accommodate Transmission Ownership Rights (TOR) or Existing Transmission Contract (ETC) Self-Schedule changes after the Market Close of the Hour-Ahead Scheduling Procedure (HASP), and
- reverse a commitment instruction issued through the Integrated Forward Market (IFM) that is no longer optimal as determined through Residual Unit Commitment (RUC).

Under the current MRTU Tariff rules, resources dispatched under Exceptional Dispatch will be paid the higher of:

- their offer (Energy Bid price), whether submitted into the IFM, the RUC or the RTM,
- their Default Energy Bid price, if they have no offer in the markets, or
- the Locational Marginal Price (LMP) at their node.

This “higher of” pricing rule is needed because of the manual dispatch, under which the CAISO may be required to dispatch a resource with an offer price or DEB higher than the prevailing LMP.

Also, under the current MRTU Tariff rules, Exceptional Dispatch is not subject to the Market Power Mitigation and Reliability Requirement Determination process (“MPM-RRD”), which is the CAISO market power mitigation element to its Day-Ahead and Real-Time Market. However, Energy Bids are subject to the Bid caps; therefore, Exceptional Dispatch offer prices are capped at the same market offer caps that all resources are subject to.

### **3.2 Potential Market Impacts if Current Tariff Rules are not Modified**

CAISO has been evaluating the market impacts associated with the existing MRTU Tariff rules to determine whether MRTU Tariff revisions are necessary. This section examines the two primary market impacts considered so far: locational market power in energy and the incentive to accept voluntary designation as an ICPM resource.

#### **3.2.1 Locational Market Power in Energy**

CAISO expects the use of Exceptional Dispatch for reliability constraints to be extremely limited and most often to take place on an unpredictable basis, such that any resource that has offers in the market would have submitted those offers without expectation of additional post-IFM binding constraints that lead to locational market power. However, there is still uncertainty about the potential need to rely on Exceptional Dispatches and, as pointed out in the DMM White Paper<sup>2</sup>, the particular concern is primarily over localized constraints that are not modeled in the Full Network Model (FNM) incorporated in the CAISO’s IFM and HASP/RTM software. As noted in the MPD paper posted on October 22, 2007<sup>3</sup> there are two major potential reasons why Exceptional Dispatches may be needed for local reliability issues.

##### **3.2.1.1 Forced Transmission or Generation Outages**

Exceptional Dispatches may be triggered as a result of a forced transmission or generation outage. Under this scenario, the expectation is that within a short period, the CAISO will update the FNM to reflect the new situation, allowing for a return to reliance on market mechanisms to establish schedules. Specifically, the CAISO has indicated that forced transmission and generation outages or de-rates should be incorporated into the FNM within one hour to one day of occurrence. Presumably, if the FNM is updated within this time period, there would be limited potential for the exercise of locational market power under this scenario. However, since there is lack of experience with the MRTU software, at this time, CAISO cannot rule out the

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<sup>2</sup> DMM paper titled “Mitigation of Potential Market Power Under MRTU Exceptional Dispatch Provisions” located at: <http://caiso.com/1ca9/1ca98ee3221f0.pdf>

<sup>3</sup> MPD paper titled “Exceptional Dispatch and Proposed Interim Capacity Procurement Mechanism” located at: <http://caiso.com/1c7f/1c7fe9985c80.pdf>

potential for persistent local market power if FNM updates are not as timely as expected.

### **3.2.1.2 Local Reliability Constraints Not Modeled in Market Software**

In certain instances, it may also be possible that the FNM may not adequately model all local reliability constraints, leading to the need for Exceptional Dispatches to ensure local reliability.

For example, two specific examples of reliability constraints that are not modeled in the FNM include the following:

- **Voltage Stability Constraints.** Voltage support requirements can typically be met by dispatching a unit to operate at its Minimum Load level, so this type of constraint would not appear to require the use of Exceptional Dispatch for commitment but perhaps not for energy (above Minimum Load) at Bid prices that could significantly exceed competitive levels due to locational market power.
- **SP26 30-minute Dispatchable Energy Requirements.** Under current operating practices, units committed to ensure that sufficient 30-minute dispatchable capacity is online in SP26 are frequently dispatched in real time beyond their minimum operating levels (P-Min) up to their minimum dispatchable operating levels. Under current MRTU provisions for Exceptional Dispatch, a unit expecting to be dispatched up to its minimum dispatchable level could submit extremely high Energy Bid prices to the real time market. With the recent changes in the zonal RA requirements, effective for RA year 2008, there would likely be a reduction in the amount of non-RA resources committed for this particular reliability constraint. The Path26 allocation process was described in a market notice sent out by the CAISO on July 19, 2007 to Market Participants.<sup>4</sup>

In many or most cases, the CAISO expects that these reliability requirements are expected to be indirectly met as a result of other constraints incorporated in the FNM and market schedules resulting from the IFM. In addition, although voltage support and stability constraints are not modeled explicitly, these may in some cases be converted and modeled as flow based constraints. Similarly, some contingency constraints may also be converted and modeled as flow based constraints. Again, experience with MRTU market operations will clarify the market impact of the modeling of these transmission constraints, but evaluation at this time cannot rule out the potential for persistent local market power if Exceptional Dispatch is used more frequently than expected.

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<sup>4</sup> A copy of the market notice can be found at: <http://www.caiso.com/1c20/1c20ad8932cf2.html>

### 3.2.2 Exceptional Dispatch and Voluntary ICPM Designation

A second area of concern to CAISO and market participants is the relationship of Exceptional Dispatch and ICPM. The ICPM is CAISO's proposed mechanism for procurement of backstop capacity from resources that do not already have an RA or RMR contract under MRTU.<sup>5</sup> ICPM procurement will take place in two timeframes: the Type 1 procurement will backstop the forward (bilateral) RA market; and the Type 2 procurement in response to Significant Events, such as major generation or transmission outages, that take place in real-time operations and do not allow for all reliability criteria to be met with the available RA resources. CAISO has proposed the same ICPM price for both types of procurements: the higher of \$41/kW-year or a \$/kW-year rate based on a unit's actual going forward costs as filed at FERC. The final ICPM price has yet to be determined by FERC. The ICPM proposal as filed allows a generator to choose whether to accept designation. The expectation is that the price offer for designation will be sufficient that any generator will accept the offer voluntarily.

Some stakeholders have drawn a linkage between Exceptional Dispatch and ICPM, since in the event of an outage that is not reflected in the FNM, Exceptional Dispatch will be the method by which resources without capacity contracts that are off-line temporarily, are committed out-of-market and then possibly requested to remain available for a period in exchange for an ICPM designation. There are two primary market design issues. The first is whether, under the existing Tariff rules or any subsequent modifications of those rules, a unit without an RA contract will voluntarily accept designation as a backstop capacity resource under ICPM, under which it will be subject to the same daily must offer requirement and rules on RUC offers as an RA resource. The second issue, which assumes resolution of the first issue, is whether resources subject to Exceptional Dispatch should be eligible immediately for an ICPM designation or other supplemental payments to provide contribution to fixed cost recovery.<sup>6</sup>

Turning first to the issue of incentives, since the Type 1 procurement, as proposed, takes place in the forward time-frame at a tariff rate, there should be minimal interaction between the current rules for Exceptional Dispatch and the willingness of a resource to accept ICPM designation.<sup>7</sup> In contrast, the Exceptional Dispatch pricing rules could affect incentives to accept Type 2 designation. During a Significant Event, the CAISO will first rely on existing operational capabilities of RA and non-RA resources scheduled through the IFM or RUC and Exceptional Dispatch

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<sup>5</sup> The filed proposal can be found at <http://www.caiso.com/1bc5/1bc5db284cc80.html>

<sup>6</sup> Protest of Dynegy Moss Landing, LLC, Dynegy Morro Bay, LLC, El Segundo Power, LLC, and Reliant Energy, Inc. ("California Generators Protest") submitted in FERC Docket Nos. ER06-615-000, ER08-556-000; CAISO reply comments addressing Exceptional Dispatch will be filed in March 2008.

<sup>7</sup> First, Type 1 procurement is likely to be infrequent and since Load Serving Entities (LSEs) will be charged directly under this type of procurement they have an incentive to procure forward. Second, in the event that Type 1 procurement is needed, the generator resource will be choosing between a known payment and the uncertain possibility of an Exceptional Dispatch. Hence, Exceptional Dispatch pricing rules are unlikely to affect the willingness to voluntarily accept Type 1 designation.

for RA and non-RA resources needed that were not scheduled through the market. Following the evaluation of the expected scope and duration of the Significant Event, CAISO will determine whether to make an ICPM designation offer to specific generation units. The designation request will be accompanied by a \$/kW-year offer for the term of the designation, as specified in the ICPM proposal. When a generator is accepted for designation, it will be treated as an RA unit; e.g. subject to a must-offer into the IFM and no longer eligible to submit a non-zero offer into the RUC.

If the current MRTU Tariff rules for Exceptional Dispatch are maintained without revision (i.e., Bids would not be subject to mitigation), there should be no disincentive to accept an ICPM designation, as payments under an ICPM designation would be additional to any revenues that a resource would make under Exceptional Dispatch.<sup>8</sup> However, if the Tariff rules are changed to mitigate market power, a resource without a prior capacity contract may reject an ICPM designation under some possible rules. These incentive issues and possible corrective rules are discussed below.

With regard to the second issue -- whether and under what conditions a non-RA/RMR resource subject to Exceptional Dispatch should be eligible for an ICPM designation -- CAISO has recently indicated in the context of the ICPM proceeding that it: "does not want to have a prescriptive "hard trigger" for an ICPM Significant Event that does not allow it to exercise prudent judgment based on Good Utility Practice to avoid designations that are not required."<sup>9</sup> Exceptional Dispatch should not be used as such a hard trigger. As discussed above, Exceptional Dispatch may be needed for a very short-term and transitory reliability requirement; if the need is transitory, due, e.g., to a temporary inability to model a particular constraint or a reliability requirement that only occurs for a brief period, then a monthly or multi-month ICPM designation does not appear to be proportional to the need. On the other hand, a more major reliability event deemed a Significant Event should lead to the offer of an ICPM designation. This issue is currently before FERC and hence any FERC decision may change the nature of the present stakeholder proceeding.

In the alternative, CAISO is proposing here to relax mitigation subject to a revenue cap set at the monthly ICPM rate when a resource without a capacity contract is subject to both Exceptional Dispatch and mitigation. If this approach is adopted, then it may provide an adequate link between Exceptional Dispatch and ICPM from the perspective of stakeholders without resorting to automatic designation triggers. Discussion of such options begins in Section 5 below.

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<sup>8</sup> This is because both RA/ICPM and non-RA units could be subject to Exceptional Dispatch without mitigation under the current Tariff rules. So, accepting the ICPM designation, while it would impose a requirement to offer into the IFM, could still allow for a unit to collect unmitigated payments under Exceptional Dispatch.

<sup>9</sup> See ICPM Transmittal Letter, pg. 25, located at <http://www.caiso.com/1f67/1f67d9d453990.pdf>.

## 4 Exceptional Dispatch Mitigation Proposal

As noted above, CAISO has evaluated the circumstances for Exceptional Dispatch and found that at least in some circumstances, a resource subject to such dispatch may have substantial locational or temporal market power. Toward the end of 2007 and into early 2008 the CAISO's Department of Market Monitoring (DMM) held several stakeholder conference calls to discuss a DMM mitigation proposal for Exceptional Dispatch.

On November 30, 2007 DMM issued the first issue paper<sup>10</sup> titled "Mitigation of Potential Market Power Under MRTU Exceptional Dispatch Provisions". Written comments from stakeholders on that initial white paper were received on December 12, 2007. In response to these comments, DMM issued a paper with additional discussion and information on this issue on January 3, 2008.<sup>11</sup> DMM then discussed issues related to the proposed mitigation rule and other stakeholder questions at a teleconference on January 7, 2008. Additional written comments were received on January 14, 2008.<sup>12</sup> Based on these stakeholder discussions and comments – along with further consultation with CAISO Operations personnel and management – DMM developed a more specific revised proposal that was the basis for a briefing at the January 28-29, 2008 Board of Governors (BoG) meeting.

Prior to the January 2008 CAISO Board meeting, comments were received on the mitigation proposal that prompted CAISO to withdraw the proposal until further stakeholder discussion could be had on the broader implications of mitigation of Exceptional Dispatches. In particular, stakeholders raised concerns about fixed cost recovery, especially by resources without capacity contracts that were subject to Exceptional Dispatch and mitigation.

The DMM proposal would modify the current tariff to apply market power mitigation to resources subject to Exceptional Dispatch in situations where market power is likely to be prevalent. The basic mitigation rule being proposed here is the same approach incorporated in DMM's revised white paper. The following language was taken directly from the January 17, 2008 DMM paper on the revised mitigation proposal. Specifically, under the final proposal, some units receiving manual Exceptional Dispatches for energy needed to meet reliability requirements that cannot be addressed through the MRTU software would be paid the higher of:

- The unit's Default Energy Bid (DEB) , or

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<sup>10</sup> DMM paper title "Mitigation of Potential Market Power Under MRTU Exceptional Dispatch Provisions" located at: <http://caiso.com/1ca9/1ca98ee3221f0.pdf>

<sup>11</sup> Initial stakeholder comments along with the response to these comments can be found at <http://www.caiso.com/1c89/1c89d76950e00.html>.

<sup>12</sup> These comments can be found at <http://www.caiso.com/1c89/1c89d76950e00.html>.

- The LMP at their location.

However, under this revised proposal, the criteria for determining which Exceptional Dispatches would be subject to mitigation has been narrowed and more specifically defined. Specifically, the mitigation rule would not apply to Exceptional Dispatches for energy needed for:

- System-wide energy requirements; and
- Relief of congestion on competitive transmission constraints

The mitigation rule would apply to Exceptional Dispatches for energy needed for:

- Reliability requirements related to non-competitive transmission constraints;<sup>13</sup>
- Ramping units up from minimum operating levels to minimum dispatchable levels in order to protect against reliability contingencies that are not directly incorporated or sufficiently met by the MRTU software; and
- Other special unit-specific operating or environmental constraints not incorporated in the MRTU model.

The above categories were developed based on input from CAISO Operations staff on the potential reasons that Exceptional Dispatches may be issued under MRTU, and the ability of CAISO Operators to identify and log the reason for Exceptional Dispatches into various categories.

The rationale underlying this approach is that the categories for which the mitigation rule is applied involve conditions under which the potential for market power is likely to exist due to the need to issue Exceptional Dispatches for highly localized or unit-specific constraints, and other reliability requirements that are not subject to the automated Local Market Power Mitigation (LMPM) provisions incorporated in the MRTU software. In such cases, mitigating payments for any Exceptional Dispatches (for energy above a unit's minimum operating level) to the higher of the unit's DEB or the LMP at the resource's location closely mirrors the market result that would occur if the reliability requirement creating the need for the Exceptional Dispatch were incorporated in the MRTU software.

As noted in previous documents and discussions on this issue, the CAISO will post hourly information on the volumes, costs and reasons for all Exceptional Dispatches on OASIS in a timely manner. Although such publicly posted information typically needs to be aggregated at some level (e.g. by the various categories established for logging Exceptional Dispatches), DMM believes this will provide a high level of transparency to market participants concerning the frequency, volume, costs, causes and degree of mitigation of Exceptional Dispatches.

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<sup>13</sup> DMM presentation on Competitive Path Assessment can be found at: <http://www.caiso.com/1f52/1f52bd74746f0.pdf>

## **5 Description and Evaluation of Design Options for Supplemental Payments**

Stakeholders were divided on the mitigation proposal. While Load Serving Entities and the CPUC supported the mitigation proposal, most resource owners and WPTF raised concerns about whether CAISO's ability to call on resources through Exceptional Dispatch while mitigating their Bids to variable costs would suppress forward RA prices and affect RA procurement incentives, encourage excessive CAISO use of such dispatch, and leave certain infrequently operated generators unable to recover annual fixed costs, especially generators without capacity contracts. As noted, Exceptional Dispatch is expected to be an infrequent measure and as such is unlikely to have significant impacts on market prices or the revenues of specific generators. However, in response to generator stakeholder concerns, CAISO initiated a further stakeholder process to examine whether, if Exceptional Dispatch Bids are mitigated, modifications to the mitigation or other pricing rules were appropriate to compensate for some effects on prices and revenues, notably to provide a mechanism for a contribution to fixed cost recovery.

The starting point for CAISO's review of potential additional market pricing options was to examine whether the DMM mitigation proposal needed any further pricing augmentation or modification. In general, while some stakeholders argued for alternative principles for mitigation, such as mitigating only when there was evidence of exercise of market power, no stakeholder provided a fully developed alternative to the mitigation proposal, nor any clear evidence that the situations subject to mitigation were incorrectly identified. Hence, the CAISO determined to retain the Exceptional Dispatch situations identified for mitigation, and the basic approach to mitigation, but to examine methods to supplement the mitigation rules.

Exceptional Dispatch to support reliability will take place during many different market and system conditions. In some circumstances, such as outages or deratings of large generators or transmission facilities, LMPs should be high enough to provide appropriate market compensation and coverage of fixed costs even with mitigation. CAISO will also be introducing scarcity pricing within one year of MRTU start-up, which will further increase LMPs at those times when Exceptional Dispatch commitments may be more likely for reliability purposes.

However, CAISO did agree with certain stakeholders that the combination of mitigation and Exceptional Dispatch would at times suppress LMPs and hence the revenues of Exceptionally Dispatched units. The incremental energy from Exceptional Dispatch, which is settled financially out-of-market, will be considered in the real-time market as effectively zero price energy, thus lowering the LMP. In general, resources with types of capacity contracts – RA, RMR or ICPM – have a guaranteed contribution to fixed cost recovery and should be less susceptible to the market revenue impact of infrequent Exceptional Dispatches. For the remaining resources on the Grid without any such capacity contracts, mitigation to short-term variable cost could indeed affect recovery of fixed costs for individual plants that are

infrequently dispatched or persistently subject to mitigation while also being the marginal price-setting unit (although not necessarily for the portfolio of plants owned by a firm). To compensate for this type of situation when Bids are cleared through the markets, there is a Bid Adder of \$24/MWh for Frequently Mitigated Units (FMU) that have no or partial unit RA or ICPM contracts. This adder can set the LMP. Also, units without RA or ICPM contracts can submit Bids up to \$250/MWh in the RUC for their capacity.

Thus, an additional opportunity to earn revenues towards fixed cost recovery is reasonable in out-of-market Exceptional Dispatches where mitigated Bids may only cover variable costs for resources without capacity contracts and also to reflect the reliability benefits offered by such resources. There was substantial stakeholder acceptance of this point

## **5.1 Supplemental Payments to Mitigated non-RA Resources**

Supplemental payments to provide revenues towards fixed costs can be direct payments, either as an adder to the Bid or as a separate capacity payment, or alternatively, they can be provided indirectly by loosening or “relaxing” the Bid mitigation.

The options that CAISO has considered over the course of the stakeholder process have several market design precedents. In the current pre-MRTU market design, resources that do not have RA/RMR/ICPM status are eligible for a daily capacity payment under the Reliability Capacity Services Tariff (RCST) rate formula when subject to Must Offer Waiver Denials (MOWDs). There are also pricing measures under the MRTU tariff that provide opportunities for additional payments and relaxed bidding restrictions for units without a capacity contract/designation in some circumstances that differ from the rules for RA/ICPM/RMR units. These include the Frequently Mitigated Unit (FMU) Bid Adder and also the ability to submit unmitigated Bids up to \$250/MWh into the Residual Unit Commitment (RUC).<sup>14</sup>

### **5.1.1 Criteria for Selecting Options**

To evaluate the supplemental pricing options and provide a foundation for the final proposal, the CAISO has considered the following evaluation criteria:

- Provide suppliers without capacity contracts/designations with a reasonable opportunity to make revenues that contribute to fixed cost recovery;
- Provide incentives for suppliers without capacity contracts/designations to offer resources into the MRTU markets;
- Provide incentives for suppliers without capacity contracts/designations to make resources available for designation under ICPM or RA;
- Mitigate local market power through Bid caps and/or revenue caps;
- Minimize administrative costs and implementation issues.

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<sup>14</sup> RA/RMR/ICPM units are not eligible for the FMU Bid Adder nor can they submit positive Availability Bids into the RUC.

### **5.1.2. Rules for Eligibility**

CAISO proposes the following rules for eligibility for any supplemental payment:

1. Such payments would only be available to resources that do not have an RA or RMR contract or an ICPM designation.
2. Such payments would only be available to resources that are committed or dispatched under Exceptional Dispatch and selected for Bid mitigation under the rules proposed in Section 4.
3. A non-RA resource must have a Bid in the IFM and HASP/RTM for the applicable operating day or hour in which they were being issued an Exceptional Dispatch in order to be eligible for the supplemental payment or revenues; otherwise, the payment will be the higher of the DEB or the LMP.

This eligibility requirement is to ensure that resources do not exit the market either in anticipation of an Exceptional Dispatch or to force the CAISO to undertake an Exceptional Dispatch so as to obtain a supplemental payment. Note that a unit that does not have a Bid in the HASP/RTM in the first hour that it is subject to Exceptional Dispatch could submit a Bid into the subsequent hours of the HASP/RTM.

4. Upon designation as an RA or ICPM unit, if that takes place during the period that a unit is being subject to Exceptional Dispatch, eligibility to receive supplemental payments would end.

In general, stakeholders supported the eligibility requirements within the context of supplemental payments. However, WPTF and Reliant argue that the rule that requires Exceptionally Dispatched resources subject to forced start-up to have a Bid in the market to receive supplemental payments is unreasonable.

CAISO notes that if a unit has local market power and the ability to submit a Bid after the fact, there would be a clear incentive for resources to exit the market to get the supplemental payment in situations identified as likely to cause Exceptional Dispatch. In contrast, the requirement to Offer provides an incentive to continue to participate in the market while ensuring that if resources choose otherwise, they will still be compensated at a minimum through their DEB. Hence, CAISO proposes to continue the requirement that a supplemental payment requires having a Bid in the market. CAISO notes that the current tariff language approved by FERC, and the relaxed mitigation option discussed above, both would allow for “as-bid” payments only assuming that there is a Bid in the market. Hence, as under the current tariff, if a resource does not have a Bid in the market it would only be eligible to get paid the higher of LMP or DEB.

## 5.2 “Relaxed” Mitigation Proposal

In the prior White Paper and Straw Proposal, CAISO proposed a number of options to allow resources that meet the eligibility requirements to obtain supplemental revenues towards fixed costs. These options included (a) no Mitigation of eligible resources, (b) Mitigation supplemented by a daily capacity payment or a Bid Adder, and (c) the “relaxed” Mitigation that ultimately became CAISO’s preferred approach for the final proposal. The options not chosen are summarized in Attachment 1.

The variant of the relaxed mitigation approach that CAISO is proposing would allow eligible resources to be paid the higher of LMP or their *unmitigated* market Bid until supplemental revenues reach a revenue cap that is equivalent to a monthly ICPM payment. Once the revenue cap is reached, the resource’s Bids will be subject to mitigation for the remainder of the 30 day period that began with the first Exceptional Dispatch of the resource. Hence, the revenue cap is based on a rolling 30 day calculation. Note that resources will always keep any market revenues earned from LMPs at their locations; this relaxed mitigation rule allows them to augment the market revenues that they would have otherwise earned while subject to mitigation.

The advantage of such a rule is that it would allow such resources to recover fixed costs that result from an Exceptional Dispatch through their unmitigated market offer. The disadvantage of such a rule is that there is remaining uncertainty about the scope of Exceptional Dispatch and at least in some foreseeable circumstances, a resource without a capacity contracts could at times garner rents not consistent with the market and system conditions at the time. Moreover, such a resource in this situation may at least temporarily reject an ICPM offer of designation, which would bring it under the same mitigation rules as RA/ICPM/RMR resources. However, it would need to submit Bids into the CAISO markets to obtain the supplemental revenues and hence would remain visible to grid operators. On balance, the CAISO feels that the advantages of the rule outweigh the disadvantages, although as noted below, as a market start safeguard, the relaxed mitigation will be phased in over a two month period.

In this proposal, the revenue cap becomes the market power mitigation rule until the cap is reached. As noted, that cap is based on the resource’s ICPM monthly rate. CAISO has proposed that the ICPM Type 2 price is the higher of \$41/kW-year or a \$/kW-year rate based on a unit’s going forward cost and approved by FERC.<sup>15</sup> This proposed payment is not subject to a Peak Energy Rent (PER) deduction and each monthly payment is 1/12 of the annual payment. Upon expiration of ICPM in 2010, the ICPM price would be replaced by any subsequent price available for Type 2 backstop procurement or another pricing proposal if needed.

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<sup>15</sup> The filing can be found at <http://www.caiso.com/1bc5/1bc5db284cc80.html>. Note that, assuming that ICPM rates will follow the CAISO’s January filing to FERC, any resource that intends to file for a rate higher than the proposed \$41/kW-year rate will have to have this approved rate on file with CAISO. Otherwise, the CAISO will calculate the surplus revenues on the basis of the \$41/kW-year rate or other standard rate approved by FERC.

Exceptional Dispatch revenues subject to the revenue cap would be measured as total payments for incremental energy under Exceptional Dispatch (higher of Bid or LMP) minus the payments that would have taken place if the unit had been mitigated to DEB. That is, for a unit subject to Exceptional Dispatch with a Bid or LMP of \$100/MWh and a DEB of \$50/MWh, it is the \$50 difference per MWh that is providing the supplemental payments that provide a contribution to fixed costs.

Hence, the maximum ICPM monthly payment for a 100 MW unit at the standard filed rate would be \$41/kW-year  $\times$  1/12 months per year  $\times$  1000kW/MW  $\times$  100 MW = \$341,667. The same unit could thus hit the revenue cap after approximately 7-10 hours of Exceptional Dispatch if it was able to get selected with an Offer at the Offer Cap of \$500/MWh and depending on the contribution of its DEB. For example, if the DEB was \$100/MWh, this unit would reach its revenue cap in 8.5 hours.

When a supplier hits the revenue cap, it would be subject subsequently, for the remainder of the 30 day period beginning with the first Exceptional Dispatch, to full mitigation (i.e., higher of LMP or DEB).

**5.2.1 Mitigation and Settlement Rule**

The settlement rule for each resource can be stated more formally as follows:

Exceptional Dispatch Revenues per MWh for each 30 day period beginning with a first Exceptional Dispatch =

Max [Market Bid, LMP] for every Exceptional Dispatch settlement period that is in the set  $t^A$  (i.e., prior to hitting the revenue cap)  
+

Max [DEB, LMP] for every Exceptional Dispatch settlement period that is in the set  $t^B$  (i.e., subsequent to hitting the revenue cap),

where

$t^A + t^B$  consist of all Exceptional Dispatch settlement periods in a 30 day period,

$t^A$  is the set of settlement periods prior to the unit accruing supplemental revenues equal to or greater than the revenue cap (equal to the ICPM monthly rate for the mitigated resource);

$t^B$  is defined as the set of settlement periods beginning with the period when the sum of supplemental revenues in the prior periods,  $t^A$ , is greater than or equal to the revenue cap.

For purposes of this paper, supplemental revenues for a resource are defined as revenues above short-term variable cost:

$(\text{Max} [\text{Market Bid}, \text{LMP}] - \text{DEB}) \times \text{MWh}$ , for all hours under Exceptional Dispatch,

and Bid mitigation begins when

supplemental revenues  $\geq$  ICPM Monthly Rate.

Finally, if a resource submits a Bid lower than its DEB, and the LMP is lower than both Bid and DEB, it will be settled at its Bid rather than the DEB. This is similar to the settlement rule for market power mitigation in the current MRTU Tariff.<sup>16</sup> However, in the period where a resource's supplemental revenue is being calculated,  $t^A$ , and an eligible resource submits a Bid lower than its DEB, the CAISO will nevertheless continue to calculate the supplemental revenue as the difference between LMP and the DEB, if the LMP is higher than both DEB and Bid.

### **5.2.2 Relationship of Relaxed Mitigation under Exceptional Dispatch to ICPM Designation**

The ICPM is CAISO's backstop capacity payment triggered by real-time reliability events, which, as filed at FERC, provides a contribution to non-RA units towards recovery of going forward fixed costs. As filed, an ICPM designation is for a minimum of one month and requires the designated resource to offer into the MRTU markets for the period of designation. In some circumstances, a transmission or generation outage or some other event may require CAISO to start-up or redispatch non-RA units through Exceptional Dispatch and if the situation is considered an enduring Significant Event (a defined term under ICPM), the CAISO may also subsequently offer them an ICPM designation. However, many Exceptional Dispatches will not be correlated with enduring Significant Events but will rather be occasional manual actions by the grid operators. Hence, while some suppliers have argued both in this stakeholder process and in the ICPM proceeding currently before FERC that any Exceptional Dispatch of a non-RA unit should lead to an ICPM designation, CAISO has not agreed with that view. However, as discussed below, CAISO has proposed that the ICPM monthly payment should be a cap on the supplemental revenues accruing under Exceptional Dispatch, in recognition that the ICPM payment, as approved by FERC, can be considered a reasonable contribution towards fixed costs. Moreover, because it is possible to accrue revenues up to the ICPM payment in a relatively few hours under relaxed Mitigation, this approach would lead to a similar financial outcome in some circumstances to an ICPM designation for the month. However, when resources face competition for Exceptional Dispatch, supplemental revenues will accrue more slowly. Hence, the relaxed Mitigation

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<sup>16</sup> See sections 31.2.2.2 and 33.4 in the MRTU Tariff. Specifically, the payment when a resource is subject to mitigation would be:  $\text{Max}[\text{Min}[\text{Market Bid}, \text{DEB}], \text{LMP}]$ .

approach is a more flexible and market-based mechanism to meet supplier views, as expressed in filings to FERC, that an Exceptional Dispatch should lead automatically to an ICPM designation of one or more months. As noted, even when subject to mitigation, a resource under Exceptional Dispatch will never be prevented from retaining the market revenues at its location during the period of Exceptional Dispatch.

### **5.2.3 Market Start Safeguard**

CAISO Grid Operations anticipates that the most frequent use of Exceptional Dispatch will be for the first few weeks or months of market operations as operators become familiar with the new software and any software design flaws that were not perceived during the months of testing prior to launch become apparent. Hence, one of the major concerns with the Relaxed Mitigation approach is that it may allow for extraordinary payments to some generators in those first few weeks and months due not to true reliability needs but simply to temporary software issues. Although this issue was not raised in the stakeholder process, CAISO is thus proposing that for the first two months of operations, Exceptional Dispatch will be subject to mitigation but with the \$24/MWh Bid Adder as the supplemental payment, not Relaxed Mitigation. Relaxed Mitigation will begin in the third month of operations. CAISO notes that ICPM designations will be available in those first two months for any Significant Events that warrant backstop capacity procurement from non-RA/RMR resources.

### **5.2.4 Sunset Date**

Due to the many uncertainties surrounding the frequency and predictability of Exceptional Dispatch and the nature of ICPM designations, along with the ongoing evolution of the Resource Adequacy program, CAISO proposes that the rules for market power mitigation and supplemental pricing of Exceptional Dispatch will be subject to the same Sunset Date as the ICPM of December 31, 2010. The CAISO would retain all Section 205 rights with respect to the rules for supplemental payments under Exceptional Dispatch.

### **5.2.5 Market Monitoring**

Relaxed Mitigation will potentially allow units that recognize that grid operators must call on them in an Exceptional Dispatch to hit the revenue cap after a just a few hours. On the other hand, in local areas with more competition among resources available for Exceptional Dispatch, whether with capacity contracts or not, Bids used in Exceptional Dispatch should be more competitive. Hence, for non-RA resources it will likely take more hours of Exceptional Dispatch to reach the revenue cap. In addition, in Significant Events, the CAISO has the capability to offer ICPM designations.

The use of relaxed Mitigation will be subject to ongoing monitoring and review by the DMM after MRTU has been implemented and potential reconsideration by the CAISO of whether to file for approval from FERC to modify the Tariff rules for supplemental pricing.

## **6 Implementation Issues**

Some implementation issues were discussed in the original DMM paper issued on November 30, 2007<sup>17</sup> and focused on the application of a mitigation rule. Any of the proposed options discussed above – the proposed market power mitigation rule for Exceptional Dispatches for local reliability and any other pricing rules – would require certain modifications in the MRTU system or processes. Additional assessment of implementation issues by various other areas of the CAISO is ongoing as part of the CAISO’s overall assessment of this issue.

Grid Operations, Settlements, SIBR and MQS systems have been configured to handle the Exceptional Dispatch rules as described in the current MRTU Tariff and the exact impact of any changes created by the proposals above will need to be further explored when CAISO receives a FERC decision. Based on general discussions that have been had with the above mentioned groups any changes at this point in time will not be easily configured into the existing systems and tools but internal discussions will continue as we proceed through the market design process.

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<sup>17</sup> DMM paper title “Mitigation of Potential Market Power Under MRTU Exceptional Dispatch Provisions” located at: <http://caiso.com/1ca9/1ca98ee3221f0.pdf>

## Attachment 1

### Other Pricing Options Considered in Stakeholder Process

CAISO considered a number of other pricing options in the stakeholder process in addition to the final proposed approach. This section briefly reviews these options, including stakeholder views and CAISO response.

#### **Option 1 – No Mitigation for some or all resources subject to Exceptional Dispatch**

While the initial White Paper proposed that relaxation of mitigation should apply only to resources without capacity contracts, some stakeholders have proposed that no resources should be subject to mitigation. For example, in its comments WPTF argues that “to suggest that a unit that is subject to ED must be paid less because it is subject to a capacity payment implies that the same analogy will be applied to other market revenues, including ancillary service revenues and ultimately energy revenues.” The CAISO proposal began from a different starting point – not the intention to retract revenues from units with capacity contracts, but to mitigate local market power for all units in an “as-bid” situation due to Exceptional Dispatch. In that sense, the original DMM proposal did not discriminate among resources. The subsequent proposals to relax mitigation or provide supplemental payments for mitigated resources without capacity contracts were intended to provide for additional recovery of fixed costs by such resources. Similar arguments were used to justify, e.g., the current RCST daily capacity payments and the MRTU Frequently Mitigated Unit (FMU) Bid Adder. For that reason, CAISO does not support the argument for no market power mitigation under Exceptional Dispatch for all resources.

A second argument made by stakeholders for not imposing market power mitigation on all resources is that the DEB does not adequately provide mechanisms for recovery of types of short-term variable costs that might accrue under Exceptional Dispatch. For example, Reliant is concerned about recovery of “intra-day gas costs, which consist of LDC scheduling imbalance charges, firm access rights costs and gas costs for that day.” Reliant requests that the CAISO accept additional information on such costs to supplement the DEB calculation. CAISO feels that this issue has been decided in prior FERC orders, and is outside the scope of the present process.<sup>18</sup>

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<sup>18</sup> The proposal to use the DEB as the mitigated price was discussed and addressed by FERC in the September 21, 2006 Order. FERC stated that the variable cost plus 10% option would be sufficient to cover the various operating costs and “While this option accounts for a supplier’s operating cost, we note that a supplier whose bid is mitigated to cost plus ten percent will also have an opportunity to recover its fixed costs during times when it is not the marginal unit that sets the market clearing price in the market.” FERC also cited lack of evidence presented for the argument that the 10% adder would be insufficient. The FERC order can be found at: <http://caiso.com/1878/1878f9725ef80.pdf> with specific reference to paragraph 1045 for the FERC Determination.

We note further that the existing Exceptional Dispatch Tariff rule, that allows unmitigated Offers by all resources was not intended to cover costs not represented in the DEB, since the DEB was understood to be applicable in many instances of Exceptional Dispatch, notably when a resource did not have an offer in the market (see discussion in the FERC orders excerpted in Attachment 1).

### **Option 2 – Mitigation with Supplemental Daily Capacity Payment**

Under this proposal the CAISO would have mitigate Bids of all resources as described above but would also have provided a supplemental daily capacity payment to resources without a capacity contract/designation. CAISO proposed that the daily capacity payment would be a fraction to be determined of the ICPM monthly capacity payment amount. For each calendar month, CAISO would have limited the supplemental capacity payment to the amount that would have been received under the ICPM designation. Unresolved questions included whether to provide payment for full or partial capacity.

While several stakeholders and the CPUC supported this approach, on further consideration, CAISO withdrew it due to concerns that the potential complexity of this approach and the likelihood that key design parameters remain subject to FERC approval or otherwise will be difficult to resolve through the stakeholder process made a daily capacity payment less attractive than the alternatives. However, as noted above, the monthly ICPM payment, as approved by FERC, does offer a reference point as a capacity payment revenue cap, and hence has been retained in the proposed relaxed Mitigation.

### **Option 3 – Mitigation with Energy Bid Adder**

Under this proposal, the CAISO proposed that the supplemental payment would take the form of a Bid Adder. Following the non-RA FMU Bid Adder amount as noted in MRTU Tariff section 39.8.3, CAISO proposed to adopt a \$24/MWh Bid Adder. When applied in the market, the FMU Bid Adder would have been added to the resource's Bid and thus sets the LMP if the unit is marginal. When applied to an out of market settlement under Exceptional Dispatch, the payment would be the higher of the LMP or the DEB + \$24/MWh. In keeping with the general principle that in any one month, supplemental payments should not exceed the ICPM payment, CAISO also proposed to cap monthly revenues under the Bid Adder to the monthly ICPM capacity payment.

CAISO has proposed that, as a market start safeguard, for the first two months of MRTU operations, this option should be the supplemental pricing rule. Subsequently, the relaxed mitigation will be the pricing rule.

## **Attachment 2**

### **Relevant Excerpts on Exceptional Dispatch from the CAISO Tariff and FERC Orders**

#### **1. CAISO Tariff Excerpts (updated as of 10/12/07)**

##### **34.9 Exceptional Dispatch.**

The CAISO may perform Exceptional Dispatches for the circumstances described in this Section 34.9, which may require the issuance of forced Shut Downs or forced Start-Ups. The CAISO shall conduct all Exceptional Dispatches consistent with good utility practice. Dispatch Instructions issued pursuant to Exceptional Dispatches shall be entered manually by the Operator into the RTM optimization software so that they will be accounted for and included in the communication of Dispatch Instructions to Scheduling Coordinators. Exceptional Dispatches are not derived through the use of the RTM optimization software and are not used to establish the LMP at the applicable PNode. The CAISO will record the circumstances that have led to the Exceptional Dispatch. Imbalance Energy delivered or consumed pursuant to the various types of Exceptional Dispatch are settled according to the provisions in Section 11.5.6.

##### **34.9.1 System Reliability Exceptional Dispatches.**

The CAISO may manually dispatch Generation Units, System Units, Participating Loads, Dynamic System Resources, and Condition 2 RMR Units pursuant to Section 41.8, in addition to or instead of resources dispatched by RTM optimization software during a System Emergency, or to prevent an imminent System Emergency or a situation that threatens System Reliability and cannot be addressed by the RTM optimization and system modeling. To the extent possible, the CAISO shall utilize available and effective Bids from resources before Dispatching resources without Bids. To deal with any threats to System Reliability, the CAISO may also dispatch in the Real-Time Non-Dynamic System Resources that have not been or would not be selected by the RTM for Dispatch, but for which the relevant Scheduling Coordinator has submitted a Bid into the HASP.

##### **34.9.2 Other Exceptional Dispatch.**

The CAISO may also manually dispatch resources in addition to or instead of resources dispatched by the RTM optimization software to: (1) perform Ancillary Services testing; (2) perform pre-commercial operations testing for Generating Units; (3) mitigate for Overgeneration; (4) provide for Black Start; (5) provide for Voltage Support; (6) accommodate TOR or ETC Self-Schedule changes after the Market

Close of the HASP; or (7) to reverse a commitment instruction issued through the IFM that is no longer optimal as determined through RUC. If the CAISO dispatches an RMR Unit for Voltage Support, the RMR Unit will be compensated under its RMR Contract and not as an Exceptional Dispatch under the CAISO Tariff.

### **34.9.3 Transmission-Related Modeling Limitations.**

The CAISO may also manually Dispatch resources in addition to or instead of resources dispatched by the RTM optimization software, during or prior to the Real-Time as appropriate, to address transmission-related modeling limitations in the Full Network Model. Transmission-related modeling limitations for the purposes of Exceptional Dispatch, including for settlement of such Exceptional Dispatch as described in Section 11.5.6, shall consist of any FNM modeling limitations that arise from transmission maintenance, lack of voltage support at proper levels as well as incomplete or incorrect information about the transmission network, for which the Participating TOs have primary responsibility. The CAISO shall also manually Dispatch resources under this Section 34.9.3 in response to system conditions including threatened or imminent reliability conditions for which the timing of the Real-Time Market optimization and system modeling are either too slow or incapable of bringing the CAISO Controlled Grid back to reliable operations in an appropriate time-frame based on the timing and physical characteristics of available resources to the CAISO.

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### **11.5.6 Settlement Amounts for IIE from Exceptional Dispatch.**

For each Settlement Interval, IIE Settlement Amount from each type of Exceptional Dispatch described in Section 34.9 is calculated as the sum of the products of the relevant IIE quantity for the Dispatch Interval and the relevant Settlement price for the Dispatch Interval for each type of Exceptional Dispatch as further described below. For MSS Operators the settlement for IIE from Exceptional Dispatch is conducted in the same manner, regardless of any MSS elections (net/gross Settlement, Load following or opt-in/opt-out of RUC).

#### **11.5.6.1 Settlement for IIE from Exceptional Dispatches used for System Emergency Conditions, to Avoid Market Intervention, Overgeneration Conditions or to Prevent or Relieve Imminent System Emergencies.**

The Exceptional Dispatch Settlement price for incremental IIE that is delivered as a result of an Exceptional Dispatch for System Emergency conditions, to avoid a Market Interruption, to mitigate Overgeneration conditions, or to prevent or relieve an imminent System Emergency, including forced Start-Ups and Shut-Downs, is the

higher of the Resource-Specific Settlement Interval LMP, the Energy Bid price or the Default Energy Bid price, if applicable and the Energy that does not have an Energy Bid price, or the negotiated price as applicable to System Resources. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the incremental Energy Bid Cost in excess of the applicable LMP at the relevant Location is settled pursuant to Section 11.5.6.1.1. The Exceptional Dispatch Settlement price for decremental IIE not associated with an Energy Bid that is delivered as a result of an Exceptional Dispatch instruction to avoid a Market Interruption, or to prevent or relieve a System Emergency is the minimum of the Resource-Specific Settlement Interval LMP, the Energy Bid price, or the negotiated price, if applicable and the Energy that does not have an Energy Bid price. All Energy costs for decremental IIE associated with this type of Exceptional Dispatch are included in the total IIE Settlement Amount described in Section 11.5.1.1.

#### **11.5.6.1.1 Settlement of Excess Costs for Exceptional Dispatches used for Emergency Conditions, to Avoid Market Intervention, and Avoid an Imminent System Emergencies.**

The Excess Cost Payment for incremental Exceptional Dispatches used for emergency conditions, to avoid Market Interruption, or to avoid an imminent System Emergency is calculated for each resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.6.1 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and delivered Exceptional Dispatch quantity at one of the following three costs: (1) the resource's Energy Bid Cost, (2) the Default Energy Bid cost, or (3) the Energy cost at the negotiated price, if applicable, for the relevant Exceptional Dispatch.

#### **11.5.6.2 Settlement of IIE from Exceptional Dispatches caused by Modeling Limitations.**

##### **11.5.6.2.1 Exceptional Dispatches Not Associated with an Energy Bid for Transmission-Related Modeling Limitations.**

The Exceptional Dispatch Settlement price for IIE not associated with an Energy Bid that is consumed or delivered as a result of an Exceptional Dispatch to mitigate or resolve Congestion as a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 is the maximum of the Resource-Specific Settlement Interval LMP, Energy Bid Price or the Default Energy Bid price, if applicable and the Energy that does not have an Energy Bid Price, or the negotiated price as applicable to System Resources. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two Payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the incremental Energy Bid costs in excess of the applicable LMP at the relevant Location are settled per Section 11.5.6.2.3. The Exceptional Dispatch Settlement price for decremental

IIE for this type of Exceptional Dispatch is the minimum of the Resource-Specific Settlement Interval LMP Energy Bid Price or the Default Energy Bid price, if applicable and the Energy that does not have an Energy Bid Price, or the negotiated price as applicable to System Resources. Costs for decremental IIE associated with this type of Exceptional Dispatch are settled in two Payments: (1) decremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the decremental Energy Bid costs in excess of the applicable LMP at the relevant Location are settled per Section 11.5.6.2.3.

#### **11.5.6.2.2 Exceptional Dispatches Associated with an Energy Bid for Transmission-Related Modeling Limitations.**

The Exceptional Dispatch Settlement price for incremental IIE associated with an Energy Bid that is consumed or delivered as a result of an Exceptional Dispatch to mitigate or resolve Congestion as a result of a transmission-related modeling limitation in the CAISO FNM as described in Section 34.9.3 is the maximum of the Resource-Specific Settlement Interval LMP or the Energy Bid Price. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two Payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the incremental Energy Bid costs in excess of the applicable LMP at the relevant Location are settled per Section 11.5.6.2.3. The Exceptional Dispatch Settlement price for decremental IIE for this type of Exceptional Dispatch is the minimum of the Resource-Specific Settlement Interval LMP or the Bid price. Costs for decremental IIE associated with this type of Exceptional Dispatch are settled in two Payments: (1) decremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the decremental Energy Bid costs in excess of the applicable LMP at the relevant Location is settled per Section 11.5.6.2.3.

**2. Excerpt from *California Independent System Operator Corporation, Order Conditionally Accepting the California ISO's Electric Tariff Filing to Reflect Market Redesign and Technology Upgrade (Tariff Amendment No. 44 and Proposed MRTU Tariff) (September 21, 2006), in Docket Nos. ER06-615-000 and ER02-1656-027, et al.***

**266.** We deny WPTF/IEP's request to modify the proposed provisions for Exceptional Dispatch. WPTF/IEP objects that the definition of "system emergency" in the MRTU Tariff is too broad and that the proposal for Exceptional Dispatches would result in undue intervention in market outcomes. However, the CAISO has not proposed to change the definition of "system emergency" provided in the MRTU Tariff from the definition in the CAISO's existing tariff, which the Commission has found to be just and reasonable. We note that in instances where a system emergency exists, or

there is the potential, that cannot be addressed by the real-time market optimization software, it is reasonable for the CAISO to take whatever other actions may be available consistent with good utility practice to address the emergency. The proposal for Exceptional Dispatches would not result in undue intervention in market outcomes because section 3.9.1 does not authorize Exceptional Dispatches when the real-time market optimization software can address an imminent system emergency. We also disagree with WPTF/IEP and Constellation/Mirant that Exceptional Dispatches should be allowed to set the market price. LMPs should reflect the marginal cost of energy, in order to send accurate price signals. However, manual Exceptional Dispatch instructions differ from those derived from the real-time market optimization software. Units manually dispatched in Exceptional Dispatches need not represent the marginal units, and thus, we agree with the CAISO that it would not be appropriate for such units to set the market price. Units producing energy for Exceptional Dispatch are paid at least the higher of the applicable settlement interval LMP or the unit's bid price. For many types of Exceptional Dispatch, the unit may alternatively receive the default energy bid price (in the event that the energy does not have a bid price), which is higher than the applicable LMP, or the negotiated price as applicable to System Resources.

**267.** We do however share WPTF/IEP's and others' concern that Exceptional Dispatch should not become a frequent occurrence and should be reserved for genuine emergencies where the CAISO needs to take actions outside the market software for maintaining system reliability. Therefore, we direct the CAISO, for transparency reasons, to publish all instances of Exceptional Dispatch on its OASIS website beginning on the effective date of MRTU Release 1. The OASIS website report should include, at a minimum, total hourly volumes and hourly weighted average prices, by transmission operator service territory. We will monitor the occurrence of and the method by which CAISO employs Exceptional Dispatch and if necessary will direct changes.

**3. Excerpt from *California Independent System Operator Corporation, Order Addressing Requests For Rehearing And Clarification (Issued October 15, 2007)*, in Docket No. ER06-615-009**

**D. MRTU Tariff Section 34.9.3, Transmission-Related Modeling Limitation**

36. Under section 34.9.3 of the MRTU Tariff, the CAISO proposed to make clear that the CAISO has the authority to manually dispatch resources in order to address transmission-related modeling limitations in the Full Network Model (FNM). Specifically, the CAISO defined transmission-related modeling limitations as "any FNM modeling limitations that arise from transmission maintenance, lack of voltage support at proper levels as well as incomplete or incorrect information about the transmission network, for which the Participating Transmission Owners have primary responsibility."

37. In its comments to the CAISO's compliance filing, Southern California Edison Company (SoCal Edison) argued that the CAISO's proposed definition of transmission-related modeling limitation was overly broad, and requested that the Commission require the CAISO to revise proposed MRTU Tariff section 34.9.3 in order to specify that a modeling limitation "results when the real-time network constraints and limitations significantly differ from those that were assumed in the Integrated Forward Market, such that CAISO reliance on its real-time market would not be sufficient to maintain reliable grid operations."<sup>19</sup> The Commission agreed with SoCal Edison that the CAISO's proposed definition of transmission-related modeling limitation was too broad, but rejected SoCal Edison's requested modification to section 34.9.3, as too restrictive "because the definition would only be applicable to real-time occurrences where the CAISO has made use of all resources to maintain reliability."<sup>20</sup> The Commission further stated that:

to be consistent with sections 34.9.1 (System Reliability Exceptional Dispatches) and 34.9.2 (Other Exceptional Dispatch), the Commission directed the CAISO to modify section [34.9.3]<sup>21</sup> to acknowledge that Exceptional Dispatches will only be used in response to threatening/imminent reliability conditions for which the real-time market optimization and system modeling are either too slow or incapable of bringing the grid back to reliable operation in an appropriate time frame (*i.e.* less than 30 minutes).<sup>22</sup>

38. On rehearing, the CAISO states that it does not take issue with the Commission's directive to add language to section 34.9.3. However, the CAISO believes that the Commission should clarify that the CAISO will be permitted to issue Exceptional Dispatches prior to real time to address transmission related modeling limitation in the Full Network Model. The CAISO states that clarification is appropriate because it would be unreasonable to require the CAISO to wait until real time to issue an Exceptional Dispatch to address transmission-related modeling limitations in the Full Network Model if the CAISO has anticipated, prior to real time, that there will be threats to reliable grid operations that the CAISO cannot solve through real-time optimization and system modeling.

39. The CAISO also seeks clarification that the Commission directive in Paragraph 443, stating that "Exceptional Dispatches will only be used in response to threatening/imminent reliability conditions for which the real-time market optimization and system modeling are either too slow or incapable of bringing the grid back to reliable operation in an appropriate time frame (*i.e.* less than 30 minutes)," did not intend to imply that the CAISO's authority under section 34.9.1 or section 34.9.2 is limited to acting only in real time. The CAISO contends that it would be

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<sup>19</sup> June 25 Order, 119 FERC ¶ 61,313, at P 434-436.

<sup>20</sup> *Id.* P 442.

<sup>21</sup> P 443 of the June 25 Order contains a typographical error. The tariff section number should be "34.9.3."

<sup>22</sup> *Id.* P 443.

unreasonable to assume that the CAISO could not issue an Exceptional Dispatch during a System Emergency or to prevent an imminent System Emergency under these sections. Furthermore, the CAISO argues that the result is inconsistent with the September 21 Order stipulating that Exceptional Dispatches should be reserved for genuine emergencies.<sup>23</sup>

### **Commission Determination**

40. We grant clarification on the issue of the CAISO's ability to issue exceptional dispatches prior to the real-time market. In the June 25 Order, we explained that "[t]he Commission does not want to confine the CAISO to real-time solutions or comparing real-time conditions with planned conditions, especially if the CAISO is capable of resolving any reliability concerns before they reach the emergency stage."<sup>24</sup> Because exceptional dispatches are designed to cope with events that occur outside of normal market operations, in order to address specific reliability problems,<sup>25</sup> we clarify that the CAISO should not be prohibited, under sections 34.9.1 and 34.9.3, from issuing manual dispatch instructions during system emergencies, threatening/imminent emergencies, or to correct transmission-related modeling limitations. We further clarify that these sections are not limited to only real-time decisions but also allow the CAISO to respond to reliability conditions prior to real time. We find it reasonable for the CAISO to have the ability to manually dispatch units without delay or, at minimum, provide notice to those units that require more time to start-up and synchronize with the system to address certain reliability conditions prior to real time. For these reasons, we grant clarification on this issue.

41. We further clarify that it was not the intent of the Commission to limit the CAISO's authority under section 34.9.2 (Other Exceptional Dispatches) to only threatening/imminent reliability conditions, which the real-time optimization software cannot address. The CAISO listed three types of activities that it does not believe would be covered by section 34.9.2 under the Commission's current interpretation of that section. Specifically, the CAISO states that these activities include ancillary services testing, performance of pre-commercial operations testing for generating units and to accommodate ETCs or TOR) self-schedules. For instance, it explains that in order to honor ETC/TOR schedule changes, the CAISO will at times have to manually dispatch units under its exceptional dispatch authority because the real-time market optimization software is incapable of addressing such ETC/TOR schedule changes.

42. We accept the CAISO's rationale for having the flexibility to dispatch units under exceptional dispatch authority beyond those circumstances that threaten system reliability. We note that it was never the Commission's intent to limit that the CAISO's ability to honor these contracts to circumstances that threaten reliability. Thus, we grant clarification on this issue. We recognize that it may be necessary for the

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<sup>23</sup> CAISO cites to September 21 Order, 116 FERC ¶ 61,274 at P 267.

<sup>24</sup> June 25 Order, 119 FERC ¶ 61,313 at P 442.

<sup>25</sup> See September 21 Order, 116 FERC ¶ 61,274 at P 245-265.

CAISO to issue exceptional dispatch instructions to address specific reliability issues that are outside of normal market operations. Notwithstanding, we note that the CAISO must use all resources made available to them, as appropriate, prior to dispatching units under its exceptional dispatch authority. We also note that the CAISO, consistent with previous findings, must publish all instances of exceptional dispatch on its OASIS web site beginning on the effective date of MRTU Release 1.<sup>26</sup>

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<sup>26</sup> Id. P 267.

## Attachment 2

### List of Acronyms

CAISO	California Independent System Operator
DEB	Default Energy Bid
FERC	Federal Energy Regulatory Commission
FMU	Frequently Mitigated Unit
FNM	Full Network Model
ICPM	Interim Capacity Procurement Mechanism
IEP	Independent Energy Producers Association
IFM	Integrated Forward Market
LMP	Locational Marginal Price
LMPM	Local Market Power Mitigation
LSE	Load Serving Entity
MOWD	Must Offer Waiver Denials
MRTU	Market Redesign and Technology Upgrade
MSC	Market Surveillance Committee
MW	Megawatt
MWh	Megawatt hour
PER	Peak Energy Rent
RA	Resource Adequacy
RMR	Reliability Must-Run
RUC	Residual Unit Commitment
WPTF	Western Power Trading Forum