

126 FERC ¶ 61,082  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Acting Chairman;  
Suedeen G. Kelly, Marc Spitzer,  
and Philip D. Moeller.

California Independent System Operator Corporation                      Docket No. ER09-241-000

ORDER ON TARIFF REVISIONS

(Issued January 30, 2009)

1. In this order, we conditionally accept for filing, subject to modification, revised tariff sheets submitted by the California Independent System Operator Corporation (CAISO) on November 10, 2008, adopting a price cap and price floor on Market Redesign and Technology Upgrade (MRTU)<sup>1</sup> market clearing prices to be effective on the date of MRTU implementation. We direct the CAISO to submit, within 30 days of the date of issuance of this order, a compliance filing, as discussed below. We also direct the CAISO to make an informational filing specifying the effective date of the tariff sheets being accepted herein prior to the implementation of MRTU.

**I. CAISO Filing**

2. The CAISO proposes to adopt a price cap of \$2,500/MWh and a price floor of negative \$2,500/MWh on the locational marginal prices (LMPs), Residual Unit Commitment prices, and ancillary service prices in all of the MRTU markets. According to the CAISO, the proposal will prevent severe settlement impacts of extreme prices that could result from unanticipated and unusual circumstances as the CAISO transitions into the MRTU market.

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<sup>1</sup> The MRTU Tariff was accepted for filing with a future effective date in September 2006. *See Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 1 (2006) (MRTU Order), *order on reh'g*, 119 FERC ¶ 61,076 (2007); *see also Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,313 (2007).

3. The CAISO further states that the proposed cap and floor levels are based on its examination of prices resulting from MRTU market simulation and its investigations into the causes of such prices.<sup>2</sup> The CAISO argues that the price cap and floor are necessary because despite the existence of bid caps, prices in excess of the bid caps may occur for various reasons.<sup>3</sup> The CAISO explains that when there are binding transmission constraints in the load areas, and a resource whose bid is accepted to relieve that constraint is distant from and not very effective in resolving the constraint it may take many megawatts of energy from that less effective resource to relieve one megawatt of overload in the constrained area. As a result, the LMP in the constrained area would be a multiple of the accepted energy bid price from that distant resource and could thereby produce LMPs in the constrained area significantly above the energy bid cap. The CAISO thus concludes that the existing bid cap under the MRTU will not limit the effect of transmission congestion and supply conditions that can play a significant role in setting prices. In addition, the CAISO argues that the proposed price cap and floor levels will not dampen economic price signals, but will protect against extreme market outcomes.

4. The CAISO emphasizes that it does not intend to use the proposed price cap and price floor as a band-aid and that it remains committed to identifying and resolving market related issues prior to the MRTU launch date. The CAISO also states that after MRTU goes live, it does not plan to rely on the price cap and floor as a substitute for prompt and thorough investigation into the causes of all extreme prices and the development of appropriate remedies. While the CAISO does not propose a specific expiration date for the price cap and floor, it commits to re-assess the need for and level of the price cap and floor through a stakeholder process during the first year of MRTU operation. In addition, the CAISO proposes to assess the operation of the price cap and floor in the quarterly market performance reports required to be filed with the Commission. Furthermore, the CAISO commits to publish the original prices as calculated by the market software

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<sup>2</sup> The CAISO states that, in consultation with market participants, it has purposefully created and tested extreme operational scenarios, such as binding transmission constraints and lack of adequate ramping capability. *See* CAISO Filing at 4.

<sup>3</sup> The CAISO states that, as demonstrated through market simulations, more than 99 percent of the nodal prices in the integrated forward market and 99 percent of the prices in the real-time market have fallen within the \$2,500/MWh cap and floor range; 100 percent of the Load-Aggregation Point prices in the integrated forward market and 99 percent of Load-Aggregation Point prices in the real-time market have fallen within the \$2,500/MWh cap and floor range. *Id.* at 6.

prior to applying the price cap and floor to ensure transparency in the application of the cap and floor

## **II. Notice of Filing, Motions to Intervene, and Responsive Pleadings**

5. Notice of the CAISO filing was published in the *Federal Register*, 73 Fed. Reg. 69,630 (2008), with interventions, comments, and protests due on or before November 24, 2008. Timely motions to intervene were filed by entities listed in the Appendix to this order. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2008), the filing of timely, unopposed motions to intervene serve to make the movants parties to the proceeding.

6. The Transmission Agency of Northern California (TANC) filed a motion to intervene out-of-time. Given the lack of undue prejudice and TANC's interest, we find good cause to grant under Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2008), TANC's unopposed, untimely motion to intervene.

7. The following parties submitted comments and/or protests along with their motions to intervene: Sacramento Municipal Utility District (SMUD), California Department Of Water Resources State Water Project (SWP), Powerex Corp. (Powerex), Western Power Trading Forum (WPTF), Northern California Power Agency (NCPA), Dynegy Morro Bay, LLC and Dynegy Moss Landing, LLC (collectively, Dynegy),<sup>4</sup> the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, Six Cities), California Municipal Utilities Association (CMUA), Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), and Reliant Energy, Inc. (Reliant). The issues raised in these comments and protests are addressed in detail below.

8. The CAISO filed an answer to protests and comments on December 15, 2008. Rule 213(a) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a) (2008), prohibits answers to protests and answers unless otherwise permitted by the decisional authority. We accept the CAISO's answer to protests because it has assisted in our decision-making.

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<sup>4</sup> Dynegy supports WPTF's comments.

### **III. Discussion**

#### **A. Necessity for the Price Cap and Floor**

##### **WPTF's Protest**

9. WPTF asserts that the proposed price cap and floor would add another layer of price suppression to the already highly mitigated MRTU markets. WPTF claims that the CAISO's proposal is based on market simulation experience that may both be extreme and inapplicable, and on vague fears of the unknown and concerns about MRTU market outcomes. WPTF notes that according to the CAISO, there is nothing to indicate that so-called "extreme" prices will be frequent or will greatly affect overall prices.

10. WPTF argues that the CAISO does not identify a particular behavior that warrants the price suppression, so the proposal is an invalid mitigation measure. WPTF adds that the CAISO's MRTU Tariff already contains many protections against market manipulation. WPTF concludes that it is unjust and unreasonable for the Commission to impose price controls based on intentionally extreme market simulation conditions or on fears of unspecified market participant behavior.

11. WPTF argues that, as stated by the CAISO itself, the effects of "extreme" prices will be small. WPTF explains that under MRTU, the vast majority of load will not pay the LMP at its node, but will instead pay a price based on the aggregation of nodal prices in its utility's service territory, i.e., Load-Aggregation Point prices. WPTF claims that these aggregated prices will largely insulate load from the effects of localized high prices by spreading out those prices over a much larger volume of load. WPTF concludes that load aggregation, coupled with the CAISO's expectation that high prices will be infrequent and will apply to a small volume of real-time transactions, provides sufficient protection to consumers.

12. WPTF also argues that the price cap and floor would not enhance reliability and would blunt price signals. WPTF thus urges the Commission to reject the CAISO's preemptive cap and floor proposal and instead accept the CAISO's pledges for swift action if real facts, rather than speculation, demonstrate that such price controls are necessary. WPTF states that if the CAISO believes that a cap is necessary after MRTU starts, it can swiftly apply for that authority. In the alternative, WPTF requests that if the Commission approves the proposed price cap, the CAISO should be directed to implement the cap at the aggregated load level and not on a nodal basis. In WPTF's opinion, this would ensure that the proposed price cap and floor is truly a damage control cap and does not blunt meaningful nodal price signals.

### **Comments in Support**

13. In contrast, SMUD, NCPA, Six Cities, and CMUA state that they do not oppose the CAISO's price cap proposal. The following parties also voiced their support for the instant proposal: PG&E, SCE, and Reliant.

14. PG&E states the CAISO's proposal protects market participants against software flaws that could remain hidden in the market software. PG&E argues that the \$2,500 price cap is just and reasonable because it allows appropriately high price signals during periods of congestion while protecting consumers against extreme prices, especially during the initial phases of MRTU start-up. Finally, PG&E cautions that the cap should not be viewed as a "band-aid" fix and urges that the CAISO be vigilant in identifying and resolving any issues that arise with the MRTU markets.

15. Reliant supports the CAISO proposal because it is interested in successful implementation of MRTU and accepts the CAISO's assurance that the cap will not be a substitute for thorough testing of MRTU software and correction of any identified problems before MRTU begins.

16. SCE also states that price caps and floors are necessary in transitioning to MRTU as a means to protect consumers from excessive LMPs. SCE argues that during the simulation process, it became obvious that the MRTU model can produce prices that are spurious and clearly unjust and unreasonable. In addition, SCE states that even prices that are "mathematically correct," but are the result of the optimization not being able to find a feasible solution in the time allotted, have substantially exceeded the negative \$30/MWh bid floor and the \$500/MWh bid cap.

### **The CAISO Answer**

17. The CAISO states that WPTF's arguments are misplaced. The CAISO claims that it explained in its filing that, based on experience in MRTU market simulation, infrequent but repeated instances of extreme positive and negative prices warrant the price cap and floor protective measure. The CAISO asserts that it has taken significant measures during market simulation and testing to ensure that it knows the cause of any observed extreme prices and that over the past several months it has discussed with market participants the findings of its analysis. However, the CAISO explains, in certain cases, while it can find no problem with the bids submitted and cleared, or with the performance of its market clearing software, extreme positive or negative prices have still arisen that are not based on legitimate economic price signals and are not the result of aberrational circumstances. The CAISO argues that while these extreme prices are anticipated

to be infrequent, when they do occur, it is not appropriate that market participants be exposed to them. The CAISO thus asserts that its proposal is a prudent approach that protects consumers without constraining the ability of market prices to reflect the interaction of locational supply and demand within the bounds of the caps. The CAISO adds that prices above and below the proposed cap and floor also occurred under “normal” testing scenarios, not only under extreme scenarios created and tested in the market simulation.

18. Furthermore, the CAISO disagrees with WPTF’s suggestion that the price cap should only be implemented if prices above the cap or below the floor materialize in the MRTU market. The CAISO states that the purpose of the cap and floor is to avoid economic harm to market participants in the first place. The CAISO asserts that the prudent approach in this situation is to put the cap and floor in place and to diligently study and regularly report on price data; then, based on such analyses, evaluate the need for and/or function of the cap and floor on an ongoing basis.

19. The CAISO disagrees with WPTF’s suggestion that a price cap should apply only to load prices determined at the Load-Aggregation Points. The CAISO contends that capping nodal LMPs protects all market participants against the effect of extreme prices. Capping only Load-Aggregation Point prices does not accomplish this, because not all markets settle at Load-Aggregation Point prices.<sup>5</sup> The CAISO argues that WPTF’s suggestion does not take into account potential negative prices charged to suppliers, which will also be settled at individual LMPs.<sup>6</sup> The CAISO concludes that WPTF’s approach would result in an arbitrary and discriminatory pricing scheme. Finally, the CAISO notes that WPTF’s proposal has the possibility of creating a revenue shortfall if Load-Aggregation Point prices are capped but the nodal price components of the Load-Aggregation Point prices are not, and that this shortfall would have to be allocated to market participants in some manner.

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<sup>5</sup> According to the CAISO, Participating Load resources will be settled at individual nodal LMPs rather than aggregated Load-Aggregation Point prices. *See* CAISO Answer at 6.

<sup>6</sup> The CAISO states that if the price cap were only applied to Load-Aggregation Points, then suppliers would be exposed to extreme charges in circumstances where energy prices fall below the proposed negative \$2,500 floor. *Id.*

### Commission Determination

20. We find that the CAISO's proposal to establish a price cap and price floor is a just and reasonable approach to limiting extreme market clearing prices during the first year of MRTU market operations. We disagree with WPTF's assertion that there is no need for such protective measures. As explained by the CAISO, pre-MRTU market simulations have shown that there can be extreme market clearing prices under MRTU that were not anticipated by either the CAISO or its market participants. Although these anomalous prices stem from market simulations and are not based on actual market experience, we disagree that this makes them meaningless. Instead, we agree with the CAISO that these simulation results demonstrate the importance of having *interim* price mitigation measures, as market participants transition into a new market design and gain experience under MRTU.

21. We disagree with WPTF that the potential for extreme prices exists only under extreme scenarios or due to certain market participant behavior. As the CAISO explains, extremely high prices have occurred during the simulation of "normal" market conditions.<sup>7</sup> Further, as explained by the CAISO, market participants' behavior is just one of *several* factors that may affect market clearing prices. Other factors include software limitations that under a new market design may not appropriately consider operating constraints, such as ramp rates. Therefore, we disagree that the proposed price cap should be implemented only if the CAISO can identify market participant behavior that warrants mitigation.

22. Additionally, clearing prices that exceed the proposed cap and floor are predicted to be infrequent. However, we disagree that the infrequent nature of extreme prices provides market participants with sufficient protection as they commence MRTU operations. While the price cap and floor proposal could be implemented after the launch of MRTU, we find that the simulation results demonstrate the need to provide market participants with increased price protection at the start of MRTU.

23. Moreover, we will not direct the CAISO to implement the \$2,500 price cap only at the Load-Aggregation Point. As argued by the CAISO, this could lead to a revenue shortfall.<sup>8</sup> Further, some market participants will use the nodal market prices for settlement purposes. If the price cap and floor were implemented only at the Load-Aggregation Point level, they would not provide these participants any protection from extreme clearing prices.

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<sup>7</sup> The CAISO's Answer at 4.

<sup>8</sup> *Id.* at 6.

24. We also disagree that the proposed price cap will “blunt” the market price signal associated with an LMP-based market. As discussed in more detail below, we find that for this transitional period as the CAISO moves to MRTU the price cap level is high enough and the floor is low enough so that any impact on pricing signals should be relatively small.

25. Finally, to ensure that the proposed price cap and floor do not become a permanent “band-aid” fix for software malfunctions, unexpected results from unanticipated bidding behavior, and market inefficiencies, we will establish a sunset date for the price cap and floor, as discussed more fully below.

## **B. Appropriate Levels for Price Cap and Floor**

### **Protests and Comments**

26. WPTF states that the CAISO justifies its proposed levels based on its experience with the current MRTU market simulation, observing that it chose these levels because prices exceeded or fell below these levels less than 1 percent of the time in the MRTU market simulation. WPTF points out that the CAISO admits that market simulation was intended to test extreme scenarios and may not predict market participant behavior after MRTU goes live. WPTF argues that the likely distribution of prices from a series of extreme scenarios does not indicate the prices that will likely result from more typical scenarios. Accordingly, WPTF concludes that the CAISO failed to provide adequate justification for the levels of the proposed cap and floor.

27. WPTF adds that the CAISO’s proposed \$2,500 price cap is five times the CAISO’s \$500 offer cap and that the proposed negative \$2,500 price floor is, by contrast, 83 and one third times the CAISO’s MRTU offer floor of negative \$30. While PG&E and SCE do not object to the price cap five times higher than the current energy bid cap, they argue that the CAISO’s proposal to introduce a price floor value of negative \$2,500 is insufficient to ensure that rates remain just and reasonable. PG&E argues that the proposed price floor would unfairly expose must-take facilities such as renewable facilities, Qualifying Facilities, run-of-the-river hydroelectric generation and nuclear units to significant financial liability. PG&E and SCE argue that similar to the price cap set at five times the bid cap, the price floor should be set at five times the bid floor, which is \$150. SCE claims that this price floor should provide ample room for economic solutions to establish market prices, while at the same time protecting the market from unjust and unreasonable rates.

28. Six Cities state that although they agree that a price cap and price floor are appropriate, it is not clear that \$2,500 is the right level for the price cap and floor. SMUD also asserts that while some price cap is better than none, the \$2,500 price cap proposed by the CAISO would seem to offer little real protection, because its simulations have only rarely exceeded \$2,500, even in periods of high demand, operational constraints or supply shortages.

### **The CAISO Answer**

29. The CAISO explains that it determined that \$2,500 is an appropriate level based on market simulation results to date, which indicated that the cap at this level would apply to less than one percent of LMPs in the integrated forward market and the real-time market. The CAISO states that the more recent market simulation data show even far lower frequencies. The CAISO asserts that market simulation experience demonstrates that the overwhelming majority of prices will fall within this range and that a \$2,500 cap leaves significant room for prices to rise when economic conditions dictate accordingly.

30. The CAISO acknowledges that there is no price at which price signals suddenly cease to be meaningful. However, the CAISO asserts that as prices reach the multiple-thousands of dollar range they become increasingly less meaningful and more punitive. The CAISO states that incremental price increases above such levels do little more than penalize market participants without conveying any additional meaningful economic information or incentives.

### **Commission Determination**

31. We accept the CAISO's proposal to set the price cap level at \$2,500 and set the price floor level at negative \$2,500. Any proposed price mitigation level must balance the economic importance of minimizing the impact on competitive market clearing prices and the economic signals they provide with the goal of protecting market participants from extreme and unanticipated prices at the start of MRTU markets. The proposed price levels reasonably balance these two objectives.

32. Regarding the impact on market prices, the CAISO states that proposed price cap levels are based on MRTU market simulation results, which indicate that the proposed levels would apply to less than one percent of MRTU market clearing prices. In these limited circumstances, it is unlikely that the proposed price cap and floor would significantly distort economic incentives. We agree with CAISO that the proposed levels leave adequate room for prices to fluctuate in response to system conditions.

33. The proposed price cap and floor will provide market participants with reasonable price certainty at the start of MRTU operations. While we acknowledge market participants have different opinions on the appropriate price level to delineate meaningful price signals from punitive prices, we are not persuaded by SCE and PG&E that their proposal is preferable to CAISO's proposal to implement a symmetrical cap and floor level. We disagree with the contention that the proposed price floor unfairly exposes certain resources to significant financial liability. The price cap and floor are not designed to address issues relating to resources with particular operating characteristics, such as must-take resources. These issues must be addressed through the scheduling practices of the CAISO.

34. Accordingly, we find that the \$2,500 price cap and floor is a reasonable transitional accommodation during the startup of MRTU that sufficiently protects market participants from both extreme positive and negative market clearing prices.

### **C. Term of Price Cap and Floor Proposal**

#### **Comments**

35. Reliant states that the CAISO's commitment to reassess the price cap and floor during the first few months of MRTU operation is appropriate, but argues that a sunset date 180 days after MRTU starts would be more appropriate than a commitment to conduct a stakeholder process. Reliant states that a fixed sunset date would require the CAISO to complete its review in consultation with stakeholders during the 180-day transition to assess whether the maximum and minimum prices for settlements are still required. Reliant explains that should the CAISO determine that some form of cap and floor must be maintained, the CAISO can file a tariff amendment, complete with evidence based on the first 180 days of MRTU operation regarding the specific circumstances in which the cap and floor were triggered.

36. WPTF argues that if the Commission approves the CAISO's proposal, it should direct that the tariff provision sunset three months from the implementation of MRTU. WPTF states that by that time, the CAISO will have executed nearly 90 iterations of its integrated forward market and dispatched over 25,000 real-time five-minute dispatch intervals through its MRTU software. WPTF states that the three-month period should provide sufficient time to identify and correct price anomalies that may result from software deficiencies, especially given that the CAISO pledges that the MRTU software will be thoroughly tested prior to MRTU beginning. WPTF argues that leaving the proposed price cap and floor in place over the summer peak operating season without any evidence of market design or

software flaw would only serve to blunt the critically important operational price signals that MRTU was intended to produce, which will be most evident over the peak summer operating season.

37. WPTF argues that the Commission should require the CAISO to justify extending the price cap beyond the three-month period based on evidence rather than relying on the results of a stakeholder process. WPTF states that the parties that support the cap and floor now will likely support it in the stakeholder process, and the parties that oppose the cap and floor now will likely oppose it. WPTF notes that the Commission has already determined that the MRTU offer cap should automatically increase from its initial level of \$500 to \$1,000 over a two-year period absent a demonstration by the CAISO that the CAISO's markets are uncompetitive and the offer cap should not increase.<sup>9</sup>

### **The CAISO Answer**

38. The CAISO argues that an automatic sunset would be inappropriate. The CAISO states that the timeframes proposed by WPTF and Reliant would be inadequate because the CAISO market undergoes significant seasonal variation in conditions and, as a result, it would not be prudent to lift the price cap and floor before the CAISO and market participants have had the benefit of a full year's experience with MRTU.

39. The CAISO states that it will be diligent in its investigation of high prices and will address the functioning of the price cap in its quarterly MRTU performance reports.<sup>10</sup> The CAISO indicates that it will provide the Commission (and stakeholders) with sufficient information to monitor the cap and floor.

### **Commission Determination**

40. As discussed above, the Commission finds that based on the results of the simulations provided by the CAISO, the price cap and floor provide an appropriate level of protection during the initial year of operation of MRTU. However, we share the concerns raised by Reliant and WPTF about the term of the price cap proposal. The proposed price cap and floor should not become a permanent band-

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<sup>9</sup> WPTF cites to *Cal. Indep. Sys. Operator Corp.*, 112 FERC ¶ 61,013, at P 104 (2005).

<sup>10</sup> MRTU Order, 116 FERC ¶ 61,274, at P 1417 and Ordering Para. (Z).

aid for inefficient market solutions resulting from software limitations. We agree that the CAISO should be required to make a demonstration before the Commission that ongoing price mitigation is warranted based on actual market data. However, expiration of the tariff provision three months or 180 days may not provide the CAISO sufficient time to evaluate actual market outcomes due to the seasonal variations that might occur outside the proposed time periods. Instead, we find that a twelve month period will provide the CAISO with sufficient time to evaluate market outcomes under both peak and non-peak conditions. Accordingly, we direct the CAISO to make a compliance filing, within 30 days of the date of this order, implementing a price cap and floor sunset date twelve months after MRTU begins.

#### **D. Release of Pricing Information**

##### **Protests and Comments**

41. SCE argues that there is no valid reason for the CAISO to publish clearing prices beyond the price cap and floor, knowing that those prices will not be used in actual market settlements. SCE contends that the publishing of these prices will just create confusion for stakeholders when trying to validate market settlements against published LMP results. SCE notes that bilateral transactions that settle based on posted CAISO prices in near real-time may be settling against incorrect prices.

42. SCE requests that the Commission require the CAISO to post only the mitigated prices to the market. Alternatively, SCE states that it would be open to the CAISO flagging prices that have been adjusted to provide transparency to stakeholders. SCE does not object to the CAISO storing the unmitigated prices in an internal system so that the CAISO can use this information to diagnose software errors and to make future improvements to its pricing methodology. SCE argues that internally storing all unmitigated prices and externally flagging all prices adjusted to cap or floor levels would provide the transparency needed by stakeholders, as well as provides the CAISO with the necessary information to thoroughly test the MRTU software and correct any identified problems.

43. Similarly, PG&E maintains that posting both sets of prices will result in confusion and complexity to the settlement process for market participants. However, PG&E claims that the unmitigated price data is useful feedback to market participants regarding the overall functioning of the market optimization. Therefore, PG&E supports the posting of only final prices to the settlement files and requests that the CAISO publish the unmitigated price data in a separate document.

44. Reliant argues that the Commission should direct the CAISO to publish both the original and the mitigated prices, as well as periodic reports that explain the circumstances that cause the caps to be triggered for whatever period those caps are in effect. Additionally, Reliant requests that the CAISO explain the specific settlement consequences that result from the application of the cap or floor by identifying what and how specific charge codes are affected.

45. WPTF also requests that the CAISO make public and readily available both sets of prices, i.e., to post on its website all mitigated and unmitigated prices. In addition, WPTF urges the Commission to require the CAISO to make publicly available the results of its analysis of the cause of any prices that exceed the price cap so that market participants know whether the CAISO is applying the cap and floor to prices that are the result of legitimate market activity and a functional market or to prices that exceed the cap for some other reason.

46. Powerex argues that the CAISO should analyze why prices exceeded the cap or floor in each instance and include this analysis in its quarterly reports. Powerex argues that including such an analysis in the quarterly MRTU reports will provide market participants and the Commission with valuable information regarding the operation of the price cap and floor.

### **The CAISO Answer**

47. The CAISO states that it agrees with the concerns raised by SCE and PG&E, and in fact, states that the publishing of any prices that may be revised (including for price cap reasons) could create added confusion for stakeholders and interject unnecessary complexity into the price validation process.<sup>11</sup> Accordingly, the CAISO is proposing to delay the publication of such prices until they can be verified or corrected.

48. The CAISO further states that its proposal to delay publication of prices that may likely be revised prior to settlement is consistent with section 35.1 of the MRTU Tariff, which states that the CAISO has the authority to correct prices that are inconsistent with the provisions of the Tariff prior to the publishing those prices on its Open Access Same-time Information System (OASIS) system. The CAISO states that if it encounters a price exceeding the \$2,500 cap or floor, it can

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<sup>11</sup> The CAISO states that participants will look to the posted LMPs to structure their bilateral trades because the CAISO markets do serve as price discovery measures for market participants. The CAISO also states that it understands that certain participants are seeking to validate their settlements from the posted prices. *See* CAISO Answer at 12.

correct that price before the deadlines for publishing prices to its OASIS and in settlements data to market participants. The CAISO claims that the detailed analysis on the application of the price cap and floor that it will include as part of its regular MRTU performance reports will provide market participants with sufficient transparency regarding the application and operation of the price cap and floor.

49. In addition, the CAISO states that prices exceeding the price cap or floor are not the only instances in which prices produced by the MRTU market clearing software may need to be corrected.<sup>12</sup> The CAISO states that, pursuant to section 35.1, it will make every attempt to identify and correct such prices. The CAISO states that there will be circumstances under which it will be impossible to analyze whether a price should be corrected and, if necessary, perform a correction within the time frame between the closing of the market and the time the CAISO must post prices under its Tariff. Therefore, in order to avoid burdening market participants with the confusion and additional complexity associated with publishing prices that may not actually be used in settlement (regardless of the reason for the price excursion), the CAISO proposes the following measures.

50. The CAISO proposes to delay posting any prices if it knows before the deadline for posting the prices cleared through its markets that these prices are not likely to be used for settlement purposes because they have a reasonably significant chance of being corrected pursuant to section 35 of the MRTU Tariff, including any price that exceeds the \$2,500 cap or negative \$2,500 floor.<sup>13</sup> However, in any event, the CAISO commits to post the price no later than provided for by the timeline for price corrections as set forth in section 35.2 (i.e. no later than 1700 hours of the eighth calendar day following the relevant

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<sup>12</sup> The CAISO cites to section 35.4 of the MRTU Tariff providing that the CAISO may correct prices whenever the CAISO identifies an invalid market solution or invalid prices in an otherwise valid market solution. According to the CAISO, the circumstances in which the CAISO may determine that an invalid market solution or invalid prices exist include: (1) data input failure; (2) hardware or software failure; or (3) a result that is inconsistent with the CAISO Tariff. The CAISO states that these categories of corrections, as well as corrections made pursuant to the price cap, are not mutually exclusive. *See* the CAISO Answer at 13.

<sup>13</sup> The CAISO notes that the occurrence of a price outside the range of the proposed price cap and floor does not automatically mean that the respective price cap or floor would be the final settlement price. The CAISO validation process could find that the correct price is within the cap and floor range. *Id.* at 14.

trading day). The CAISO then proposes to follow the process in section 35.6 to summarize and report on any price corrections.

51. The CAISO states that if the Commission believes this proposed methodology is appropriate to resolve the issues identified by SCE and PG&E, the CAISO would, on compliance, conduct a short stakeholder process to determine the criteria that will be used to identify such prices. The CAISO recognizes that this proposal will require other changes to the price validation and correction procedures in section 35 to incorporate this additional correction step and would include these changes in the above proposed stakeholder process preceding its compliance filing.

52. Finally, the CAISO argues that it is imprudent to implement Powerex's requirement to include in the quarterly report an analysis of every instance of a 5-minute price exceeding \$2,500 over the course of a quarter, due to the fact that such an analysis may prove to be meaningless.<sup>14</sup> The CAISO states that it commits to meaningful and detailed analysis on the price cap and price trends in its quarterly market performance reports, upon which Powerex can comment on the reports and request additional information at that time.

### **Commission Determination**

53. We agree with SCE and PG&E that the release of market prices subject to modification should be completed in a manner that does not complicate the settlement of MRTU market transactions. Posting such prices directly to settlement files could create uncertainty about which prices should be used for settlement purposes and could ultimately complicate the settlement process. We also agree that the MRTU markets should be as transparent as practical. We find that the CAISO's proposal to revise prices subject to the proposed price cap and floor prior to releasing such prices to settlement files sufficiently addresses the concerns raised by SCE and PG&E. Nonetheless, the CAISO must ensure that the transparency of the MRTU markets is maintained. In this regard, we accept the CAISO's commitment to perform a detailed analysis on the application of the price cap and floor and to report these results as provided for under section 35. However, the release of such information in an aggregated form will not accomplish transparency objectives. Therefore, we will require the CAISO to release, in a non-aggregated form, all prices that exceed the cap and floor to market participants as part of their reporting requirements..

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<sup>14</sup> The CAISO states that, for example, every five minute price may not be significant for the ten minute settlement interval which is based on an average of the two five minute intervals. *Id.* at 15.

54. Accordingly, we accept the CAISO's commitment to initiate a stakeholder process and make a compliance filing proposing appropriate modifications to MRTU Tariff section 35. The CAISO is directed to make the compliance filing within 30 days of the date of this order.

### **E. Requests for Additional Information**

#### **Comments**

55. SWP requests clarification about the proposal to ensure that the ratemaking cost, settlement, revenue and allocation consequences of the cap/floor are fully understood. Specifically, SWP argues that the CAISO should clarify whether the cap/floor will apply in all settlement calculations, including, for instance, calculating Congestion Revenue Rights payments and charges, and calculating Bid Cost Recovery payments and cost allocations. Further, SWP states that the CAISO should explain whether the use of the cap and floor will result in over- or under-recoveries of revenue.

56. Six Cities claim that limited settlements data have been released through the MRTU simulations process and that market participants have had a very limited opportunity to evaluate those data. Six Cities argue that if the simulated settlements data indicate that extreme price outcomes are having a significant impact, it may be more appropriate to establish the price cap and floor at levels closer to the previously-accepted bid caps. Six Cities urge the Commission to allow additional comments on the CAISO's price cap/floor proposal fifteen days after the publication of a full month of accurate simulated settlements data.

57. WPTF claims that the CAISO has not provided sufficient information to allow the Commission and market participants to assess the impacts of the proposed price cap and floor. If the Commission does not reject the CAISO's proposal on principle, it should condition its approval on the CAISO's submission of the Business Practice Manual and Tariff revisions needed to reflect appropriate changes in the energy settlement and explain why they are just and reasonable, or why such changes are not needed. Following the submittal of this information, WPTF argues that stakeholders should be afforded the opportunity to comment on the proposed full design.

#### **The CAISO Answer**

58. The CAISO clarifies that the price cap and floor will apply to all settlements for energy, Residual Unit Commitment, and ancillary services cleared through the market. With respect to energy and Residual Unit Commitment prices, the CAISO explains that the cap and floor will be applied to nodal prices so

the cap and floor should not result in any shortfalls or over-collections on nodal prices. The CAISO also asserts that in the energy markets these capped nodal prices will be used to calculate Load-Aggregation Point prices. The CAISO claims that because this will generally reduce the congestion component of the LMP, Congestion Revenue Rights will be settled based on the capped congestion price because that is the price charged to market participants with flows on that particular path. The CAISO states that it does not expect any Congestion Revenue Rights shortfall or over-collection to result from this methodology. According to the CAISO, any such shortfall or over-collection that might occur will be cleared through the Congestion Revenue Rights Balancing Account under section 36 of the MRTU Tariff.

59. In response to WPTF, the CAISO claims that it has submitted all of the necessary tariff language to implement the price cap and floor. The CAISO acknowledges that some changes to various Business Practice Manuals may be necessary, but those changes would reflect a straightforward application of the caps and floors. The CAISO does not expect these changes to rise to the level of necessitating additional tariff language revisions and that any Business Practice Manual refinements need not stand in the way of approval of the price cap filing. The CAISO commits to working with stakeholders on any necessary Business Practice Manual changes as quickly as possible after the price cap proposal is accepted by the Commission.

### **Commission Determination**

60. We accept the CAISO's clarification that the proposed price cap and floor will apply to all settlements involving energy, Residual Unit Commitment capacity, and ancillary services, and that Congestion Revenue Rights will be settled based on mitigated prices. Further, we agree with the CAISO that its proposal to apply the price cap and floor at the nodal price level should eliminate any concerns regarding revenue shortfalls and overcollections.

61. We deny Six Cities' request that we allow additional comments on the CAISO's price cap and floor proposal fifteen days after the publication of a full month of accurate simulated settlements data. As discussed above, we find this to be an appropriate transitional provision for the CAISO as it moves to MRTU, and have established a sunset date for the price cap and floor twelve months after the MRTU begins. If at the end of that time the CAISO proposes to extend this transitional measure, all interested parties would have an opportunity to comment on issues relating to the price cap and floor, including the settlement data, which would be available for all four seasons of the first MRTU operational year.

62. While the implementation of the price cap and floor proposal may require changes to the Business Practice Manuals, the CAISO states that it is committed to working with its stakeholders to complete such changes, we find that there is no reason to direct the CAISO to file revised manuals with the Commission. We note that in response to the Commission directive, the CAISO has established a formalized process for amending the Business Practice Manuals.<sup>15</sup> The Commission has also directed Commission Staff to convene a technical conference six months following MRTU implementation to provide parties with a final opportunity to identify remaining provisions contained only in the Business Practice Manuals that should be included in the MRTU Tariff.<sup>16</sup> Accordingly, no further action is required at this time.

## **F. MRTU Readiness**

### **Comments**

63. CMUA argues that the issue of the price caps and floors is central to the MRTU design and that a significant filing just weeks before the market start-up should be a signal to the Commission that serious implementation issues remain and that any certification of readiness of MRTU systems by the CAISO must be carefully considered and scrutinized.

64. Similarly, NCPA states that the CAISO's request for a price cap and floor merely highlights the CAISO's own uneasiness about the readiness of the upcoming MRTU Tariff implementation. NCPA claims that price caps are not the only last-minute change that CAISO has sought to make to the MRTU Tariff.<sup>17</sup> NCPA states that last-minute changes represent an attempt to bolster the MRTU Tariff against uneconomic results surfacing in the simulations rather than addressing design and software flaws. While NCPA states that some protection is obviously better than none, it argues that MRTU implementation should not be rushed.

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<sup>15</sup> See MRTU Tariff section 22.11.

<sup>16</sup> See *Cal. Indep. Sys. Operator Corp.*, 122 FERC ¶ 61,271, at P 123 (2008).

<sup>17</sup> NCPA refers to the CAISO's filings in Docket Nos. ER09-213-000 (requesting deferral of four operational features) and ER09-240-000 (proposing changes to the Exceptional Dispatch mechanism).

65. NCPA states that the continued simulation problems and the last-minute tariff changes warrant re-examination of the Commission's conditional acceptance of MRTU. NCPA argues that implementation may still go forward, but it should do so only subject to refund, in order to maximize the protections available to ratepayers. NCPA asserts that the Commission should examine the new changes and initiate its own investigation into whether the MRTU Tariff remains just and reasonable.

66. SMUD claims that the price cap and floor filing was prompted by the CAISO's concern about its market simulations and how well MRTU will work at start-up. SMUD argues that while the addition of a price cap is prudent protection against start-up difficulties; it is no substitute for ensuring that MRTU is ready for implementation.

67. Six Cities request that the Commission make clear that the layer of protection provided by the cap and floor should not delay rapid evaluation and correction of market design or software flaws or deficiencies that are the causes of extreme pricing outcomes. Six Cities state that a price cap and floor at this late stage of MRTU development provides a clear signal that the complex MRTU processes may not be functioning as expected or intended. Six Cities maintains that while protecting market participants from extreme outcomes is important, it is even more important to address the causes of such outcomes quickly and decisively.

### **The CAISO Answer**

68. The CAISO argues that comments regarding the MRTU readiness have no bearing on whether the price cap and floor are just and reasonable. The CAISO states that the proposed cap and floor will not be a substitute for thorough testing of the MRTU software and the correction of any identified problems prior to MRTU start-up. After MRTU start-up, the CAISO states it will not rely on the price cap and floor as a substitute for prompt and thorough investigation into the causes of extreme prices and the development of appropriate remedies where warranted. The CAISO notes that it has created a separate forum to discuss readiness issues, and all interested parties will be permitted to comment on the CAISO's MRTU readiness certification when filed at the Commission. The CAISO also notes that its Board of Governors, based on the opinion of the CAISO management and the comments from market participants, agreed that additional time is required to resolve the outstanding concerns regarding MRTU readiness. The CAISO explains that these evaluations and decisions regarding MRTU readiness are not related to the proposed price cap and floor.

### Commission Determination

69. As stated above and based on the results of MRTU simulations, we find the price cap and floor proposal to be a just and reasonable transitional approach to protecting ratepayers from extreme market clearing prices that might occur during the initial year of MRTU market operations. The degree of readiness of the CAISO's software for the MRTU launch is not contingent on this determination. Issues relating to the CAISO's readiness to implement MRTU are beyond the scope of this filing. The CAISO made its readiness filing in Docket No. ER06-615-038 on January 16, 2009, and parties are free to file comments in that proceeding. If issues with the implementation of MRTU markets remain, the Commission will continue to address them in the appropriate forum. For these reasons, we reject the requests to delay the MRTU implementation by CMUA, SMUD, Six Cities, and NCPA as premature.

70. Similarly, we deny NCPA's request that we re-examine our conditional acceptance of MRTU and allow it to go forward only subject to refund. We find this request too broad and that it is unsubstantiated to warrant relief, and a collateral attack of our prior orders. Parties seeking Commission action must, at a minimum, make specific allegations and provide some basis to question the reasonableness of an accepted tariff.<sup>18</sup> The Commission has interpreted the section 206 burden to require a customer to provide some basis to question the reasonableness of the overall rate level, taking into account changes in all cost components and not just the challenged component.<sup>19</sup> NCPA does not explain how the proposed price cap and floor would affect the justness and reasonableness of the entire MRTU Tariff. The imposition of a temporary price cap and floor designed to protect ratepayers from unexpected extreme pricing without significantly affecting price signals does not automatically render the entire MRTU Tariff unjust and reasonable.<sup>20</sup> Moreover, as we found above, the proposed price cap and floor are just and reasonable because they provide the necessary protection from extreme prices during the initial year of the MRTU

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<sup>18</sup> *Algoma Group v. Wis. Pub. Serv. Corp.*, 61 FERC ¶ 61,265, at 61,959 (1992).

<sup>19</sup> *See Ameren Servs. Co. v. MISO*, 121 FERC 61,205, at n.25 (2007) (citing *Sithe/Independence Power Partners, L.P. v. FERC*, 165 F.3d 944, 951 (D.C. Cir. 1999)).

<sup>20</sup> *Dynegy Midwest Gen., Inc.*, 116 FERC ¶ 63,052, at P 24 (2006) (citing *Houlton Water Co. v. Maine Public Serv. Co.*, 55 FERC ¶ 61,037, at 61,110 (1991)) (“[A] change in a single component ... does not therefore necessarily mean that the overall rate has become unjust and unreasonable.”).

operations and are set at appropriate levels that will not dampen price signals. The price cap and floor are a temporary measure supported by results of MRTU simulations. For these reasons, we find that NCPA has failed to raise sufficient grounds to warrant a re-examination of the justness and reasonableness of the entire MRTU Tariff, and thus deny NCPA's request.

### **G. Participating Load**<sup>21</sup>

#### **Comments**

71. SWP argues that the proposed LMP price cap and floor should eliminate the need to curtail or otherwise adjust firm Participating Load on an involuntary basis when equally effective individual loads priced at the Load-Aggregation Point are not likewise involuntarily curtailed or adjusted. SWP argues that with the price cap and floor, cost impacts associated with the ineffectiveness of Load-Aggregation Point loads should be appropriately limited and there is no reason to support discriminatory involuntary curtailments or adjustments of Participating Load. SWP states that denial of service is particularly troubling when supposedly firm Participating Load has not bid into CAISO markets to offer to drop or adjust load.

72. SWP notes that in a filing submitted on November 4, 2008 in Docket No. ER09-240-000, the CAISO explained that Participating Load, which is treated nodally not only for pricing but also for scheduling and operational purposes, may be involuntarily denied CAISO transmission service, while individual Load-Aggregation Point loads equally effective to resolve the same constraint are not curtailed or adjusted. SWP asserts that according to the CAISO, load scheduled at the Load-Aggregation Point is not cost-effective for curtailment or adjustment "because it would take a much larger MWh reduction in Load-Aggregation Point load to obtain the same amount of congestion relief as a smaller MWh reduction in the nodal Participating Load."<sup>22</sup>

73. SWP maintains that the price cap and floor established in this proceeding eliminates any basis for the CAISO's concern about the cost-effectiveness of nondiscriminatory provision of service to *all* loads (including Participating Load) that have not bid into the CAISO markets or otherwise consented to a CAISO

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<sup>21</sup> Participating Loads are pumps and pump storage facilities that the CAISO models as generators with negative generation capabilities and schedules and settles them at nodal prices.

<sup>22</sup> SWP cites to the CAISO Filing, Docket No. ER09-240-000, at 26.

request to reduce load. SWP argues that the \$2,500 limit will protect against excessive prices attributable to continued treatment of Load-Aggregation Point loads on a zonal basis for purposes of identifying and resolving intra-zonal congestion. SWP states that this byproduct of the \$2,500 limit will also enable the CAISO to comply with the Order No. 719 directive that demand response not be used except as offered by the demand response provider.<sup>23</sup>

### **The CAISO Answer**

74. The CAISO argues that the price cap proposal has no bearing on how Participating Load is treated in the MRTU market and it would be inappropriate for the Commission to address this issue in this proceeding. The CAISO states that it will respond to SWP's concerns in the Docket No. ER09-240-000 proceeding.

### **Commission Determination**

75. We agree with the CAISO that SWP's concerns regarding the involuntary curtailments or adjustments of Participating Load bids have no bearing on whether the CAISO's price cap and floor proposal is just and reasonable, and are beyond the scope of this proceeding. The implementation of a price cap and floor does not in any way affect whether Participating Load bids are subject to curtailment. Accordingly, the ER09-240-000 proceeding is the appropriate forum in which to address SWP's concerns.

### **The Commission Orders:**

(A) The CAISO's price floor and cap proposal is hereby conditionally accepted, subject to modifications, to become effective upon the date of implementation of the MRTU markets.

(B) The CAISO is hereby directed to file, within 30 days of the date of issuance of this order, a compliance filing revising MRTU Tariff provisions to add an expiration that is twelve months after the effective date of MRTU implementation for the price cap and floor and proposing revisions to MRTU Tariff section 35, as discussed in the body of this order.

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<sup>23</sup> SWP cites to *Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, FERC Stats. & Regs. ¶ 31,281, at P 82 (2008).

(C) The CAISO is hereby directed to make an informational filing specifying the effective date of the tariff sheets being accepted herein prior to the implementation of MRTU.

By the Commission. Commissioner Kelliher is not participating.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

**Motions to Intervene**  
**Docket No. ER09-241-000**

Alliance for Retail Energy Markets  
California Department of Water Resources State Water Project\*  
California Municipal Utilities Association\*  
Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California\*  
Citigroup Energy Inc.  
City of Santa Clara, California and M-S-R public Power Agency  
Dynergy Morro Bay, LLC and Dynergy Moss Landing, LLC\*  
Golden State Water Company  
J.P. Morgan Ventures Energy Corporation  
Metropolitan Water District of Southern California  
Mirant Energy Trading, LLC, Mirant Delta, LLC, and Mirant Potrero, LLC  
Modesto Irrigation District  
Northern California Power Agency\*  
Pacific Gas and Electric Company\*  
Powerex Corp.\*  
Reliant Energy, Inc.\*  
Sacramento Municipal Utility District\*  
Southern California Edison Company\*  
Western Power Trading Forum\*

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\* indicates that a party has also filed comments