110 FERC ¶ 61,041
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell, and Joseph T. Kelliher,

California Independent System Operator Corporation — Docket Nos. ER02-1656-020

ORDER DENYING REHEARING

(Issued January 24, 2005)

1. In this order, we respond to rehearing requests of an order issued by the Commission on September 20, 2004[1] concerning the further development of the market redesign proposed by the California Independent System Operator Corporation (CAISO).

2. This order benefits customers by clarifying aspects of the September 20 Order and by providing further direction to the CAISO.

## I. Background

3. In an order issued on January 7, 2000,[2] the Commission found that the CAISO's existing congestion management method was fundamentally flawed, and directed it to design a new comprehensive congestion management plan. The CAISO began a stakeholder process to develop an alternate comprehensive congestion management system, but the subsequent upheaval in the CAISO power markets in 2000 and 2001 delayed the CAISO's efforts. In a December 19, 2001 order, the Commission directed the CAISO to propose a plan by May 1, 2002, to implement a day-ahead market, to be integrated with the revised congestion management plan that was directed in

[1] *California Independent System Operator Corporation*, 108 FERC ¶ 61,254 (2004) (*September 20 Order*).

[2] *California Independent System Operator Corporation*, 90 FERC ¶ 61,006, *reh'g denied*, 91 FERC ¶ 61,026 (2000).

January 2000.[3] The CAISO subsequently filed its Market Redesign and Technology Upgrade (MRTU) proposal, to be implemented in three phases.[4] On July 17, 2002, the Commission issued an order accepting in part, rejecting in part and directing modifications of the CAISO's MRTU proposal.[5] In that order, the Commission also implemented a west-wide market power mitigation program.[6]

4. On July 22, 2003, the CAISO filed a revised conceptual proposal to further develop design elements of its May 1, 2002 proposal (the CAISO's July 2003 filing). On October 28, 2003, the Commission issued a guidance order[7] approving, in principle, many of the conceptual design elements submitted by the CAISO. The Commission also sought additional information and explanation for some elements of the proposal and established technical conferences to address other issues raised by the filing.

5. On June 17, 2004, the Commission issued an order[8] to provide, among other things, further direction in relation to seven outstanding design issues being developed by the CAISO for the operation of the transmission grid that it controls: the must offer obligation, residual unit commitment (RUC), the hour-ahead market, ancillary services procurement, constrained output generators, and marginal losses.

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[3] *San Diego Gas & Electric Company*, 97 FERC ¶ 61,275 at 62,245 (2001).

[4] Phase 1: market power mitigation measures, real-time economic dispatch and the use of a single energy bid curve; Phase 2: an integrated forward market (IFM), including an energy market and procedures for procurement of ancillary services; and Phase 3: implementation of the full network model, redesigned firm transmission rights (Congestion Revenue Rights or CRRs), and the integration of congestion management with energy and ancillary services market.

[5] *California Independent System Operator Corporation*, 100 FERC ¶ 61,060 (2002).

[6] The west-wide market power mitigation program involved the extension of the existing must-offer provision within the area of the Western Electricity Coordinating Council (WECC), adoption of a set of automatic mitigation procedures to identify and limit excessive bids and local market power, and introduction of a bid cap of $250/MWh to be applied to sales in all WECC spot markets. These measures are in effect today.

[7] *California Independent System Operator Corporation*, 105 FERC ¶ 61,140 (2003) (*October 28 Order*).

[8] *California Independent System Operator Corporation*, 107 FERC ¶ 61,274 (2004) (*June 2004 Order*).

6. The September 20 Order addressed requests for rehearing of the June 2004 Order. In the September 20 Order, the Commission also redirected the CAISO to submit a compliance filing within 180 days[9] of the date of issuance of the June 2004 Order, and emphasized its expectation that the IFM would form the backdrop for the seven design issues identified in the June 2004 Order.[10]

7. On October 20, 2004, the CPUC and the CAISO filed requests for further rehearing of the September 20 Order.

## II. Discussion

### A. RUC

8. The RUC process was first introduced by the CAISO in its July 2003 filing as a new reliability tool. According to the CAISO, the RUC process would provide a reliability backstop for the CAISO to commit additional units in order to meet its reliability requirements. As proposed, the CAISO would perform a day-ahead and hour-ahead RUC process immediately after the day-ahead or hour-ahead IFM has run and feasible final schedules are established.[11] In the event that these markets close with supplies offered below the CAISO's load forecast, the RUC process will commit additional resources to ensure that on-line capacity is available in real time.

9. As part of its original proposal, the CAISO proposed to provide resources called upon in the RUC process with an availability payment for each MWh of capacity that is not awarded ancillary service or dispatched for energy in the hour-ahead or real-time markets. The CAISO indicated that it would allow resources to include a bid for RUC availability as a component of their bids into the IFM, up to a cap of $100 per MWh, in which the selected resource would be paid as-bid.

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[9] On December 13, 2004, the CAISO filed a motion requesting extension of time for submitting the directed compliance filing until November 30, 2005.

[10] *See September 20 Order* at P 6.

[11] According to the CAISO, this approach is required because the outcome of the IFM is predicated on schedules and bids, which may not coincide with the CAISO's load forecast.

10. In the October 28 Order, the Commission approved in principle the CAISO's proposed RUC process with certain modifications, including modification to the RUC availability payment. Specifically, the Commission found that the procurement of capacity under RUC was similar to the procurement of capacity in the ancillary services market, and directed the CAISO to replace the proposed $100/MWh RUC availability bid cap to reflect the $250/MWh ancillary services capacity bid cap.[12]

11. In addition, the October 28 Order rejected the CAISO's proposal to rescind the RUC availability payment if a unit is subsequently dispatched, and directed the CAISO to modify its proposal to allow for the availability payment regardless of whether the power is taken. The Commission explained that due to the CAISO's design of the IFM and RUC, a supplier's bid into the day-ahead market is automatically considered as part of the RUC process, without a RUC availability payment, a supplier would be offering day-ahead and hour-ahead RUC capacity at no cost. The Commission further stated that the RUC availability payment is a separate and distinct product from the energy, in which the supplier is compensated for the foregone opportunity to sell their product in a different market.[13]

12. In its subsequent compliance filing, the CAISO objected to the Commission's guidance to increase the proposed $100/MWh availability bid cap to $250/MWh and proposed to set the bid cap at $150/MWh. Further, the CAISO proposed to accept the Commission's guidance not to rescind the availability payment if a unit is dispatched in the energy markets subsequent to the RUC process; however, it proposed to limit to $250/MWh the combined availability payment received in RUC and the energy market clearing price received in energy markets subsequent to RUC.

13. The June 2004 Order rejected the CAISO's proposal to cap the combined energy and availability bid and found that the RUC availability bid cap should be set at $250/MWh.

14. On rehearing, the CPUC argues that the September 20 Order failed to address the CPUC's argument that the June 2004 Order established a RUC compensation scheme that is unjust and unreasonable. In support of its position, the CPUC incorporates by reference over 20 pages of the CAISO's May 11, 2004 filing addressing the RUC process.

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[12] *See October 28 Order* at P 123.

[13] *See September 20 Order* at P 22.

15. We agree that the September 20 Order did not address the RUC availability payment issues that the CPUC raised on rehearing of the June 2004 Order, because those issues were fully discussed in the June 2004 Order at paragraphs 65-68. Specifically, in the June 2004 Order, we found that the RUC availability bid cap should be set at the level of the $250/MWh ancillary services capacity bid cap because the procurement of capacity under RUC was similar to the procurement of capacity in the ancillary services market. We also rejected the CAISO's contention that there were dispatchable differences between RUC and ancillary services. We found these two products similar because both serve a reliability function for both local and system-wide needs.

16. Further, the CPUC argues that in the September 20 Order, the Commission erred in failing to overturn its ruling in the June 2004 Order allowing generating units selected for day-ahead RUC to collect both RUC availability payments and real-time energy payments. In particular, the CPUC contends that in its decision, the Commission disregarded the undisputed economic theory demonstrating that suppliers have the economic incentive to withhold supply from the day-ahead IFM in favor of reaping both RUC availability payments and real-time energy payments through RUC.

17. We addressed this issue in the September 20 Order at Paragraph 22. Specifically, we stated that:

> …The RUC availability payment is a separate product from the energy, in which the supplier is compensated for the foregone opportunity to sell their [*sic*] product in a different market. With these products being separate and distinct, we find it reasonable to allow suppliers to adjust their energy bids when appropriate to reflect costs to serve CAISO load… We expect that competition among generators would generally prevent the energy bids and the RUC availability payment from rising significantly above the marginal and opportunity costs faced by a generator. Hence, generators would generally not find it more profitable to avoid the day-ahead market in order to be selected in RUC, because the revenues from the availability payment would, for example, compensate for opportunity costs. Of course, in those instances where competition is not sufficient to ensure such an outcome, appropriate mitigation measures should be in place.

18. As we stated in the September 20 Order, we do not expect that generators would generally find it more profitable to avoid the day-ahead market in order to be selected in RUC. We reiterate that the strategy the CPUC suggests would likely be unprofitable, since either competition from other suppliers of RUC or appropriate market power mitigation would ensure that the RUC availability payment would reflect only the costs of being committed in RUC.

19. The CPUC further challenges the Commission's decision to allow sellers of RUC capacity to re-bid the associated energy when selected for RUC. In the CPUC's opinion, this ruling erroneously provides to suppliers a market in which suppliers are always guaranteed the higher of market-based rates or cost-based rates. According to the CPUC, "suppliers are provided an opportunity to re-bid based on purported costs (but the rebid is not limited to cost-based bids), if they do not like what they anticipate the market will provide."[14]

20. The CPUC further contends that the Commission's findings in the September 20 Order are internally inconsistent. The CPUC doubts that competition would generally prevent the energy bids and the RUC availability payment from rising significantly above the marginal and opportunity costs, and would prefer that generators incorporate fuel cost uncertainty in the RUC availability payment. The CPUC argues that competition should restrain the amount of a risk premium included in a bid, and that, in a market environment, participants should be able to evaluate such risks in advance and incorporate them in their bids. Instead, the CPUC argues, the Commission has guaranteed that a supplier can simply increase its bids if its costs go up or if the change of market conditions supports a higher bid.

21. We see no inconsistency in our reasoning. In this case, it is preferable, more accurate, and likely to be less costly to customers for a supplier to revise an unaccepted energy bid to reflect actual fuel costs changes, than for that supplier to estimate fuel cost change risks in an availability bid. The availability bid here should reflect the seller's opportunity cost of committing capacity in the day-ahead time frame, not the fuel costs of actual dispatch of that energy. As we stated in the September 20 Order, reiterating what we had stated in the June 2004 Order:

> fixing day-ahead energy bids and relying on a capacity bid to compensate for uncertainty in fuel costs is not a desirable mechanism for capacity suppliers, whether they are suppliers of RUC capacity or ancillary services capacity. First, restricting the real-time energy bids to be equal to or less than the un-selected IFM energy bid may understate the actual, real-time marginal cost of the seller's production. As a result, the seller's supplies may be chosen in place of lower-cost sellers whose energy bids reflect their actual marginal costs. The availability/capacity payment should reflect the seller's opportunity costs of committing capacity in the day-ahead time frame; the availability payment is not a payment for risk associated with providing energy once dispatched by the CAISO.[15]

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[14] Request for Further Rehearing of the Public Utilities Commission of the State of California, Docket No. ER02-1656-020, October 20, 2004, at 2.

[15] *See September 20 Order* at P 26.

22. Moreover, we find that allowing a supplier to include fuel cost changes in its real-time energy bid, rather than incorporate the risk costs into the availability bid, is not only preferable from a market design standpoint, but also should result in *lower overall costs to customers*. As we stated in the September 20 Order:

> [s]econd, the seller would need to estimate the change in fuel costs at the time it submitted its RUC availability bid, *i.e.*, a day in advance, and such estimates may be in error. Because of this uncertainty, sellers may need to include a risk premium in its availability bid. By contrast, real-time fuel costs will be known with more precision on the day of delivery, when real-time energy bids must be submitted, thus, avoiding the need for a risk premium to account for cost uncertainty. Thus, we think it is preferable to allow a seller to include fuel cost changes in its real-time energy bid rather than incorporate the risk costs into the availability bid. *By reducing cost uncertainty and the corresponding need for a risk premium the energy bidding flexibility should result in lower availability costs to customers* (*emphasis added*).[16]

Thus, we find no inconsistency in our arguments and deny the CPUC's request for rehearing.

23. The CPUC also argues that the September 20 Order established rates that are unjust and unreasonable. The CPUC explains that the Commission acknowledged that the rates established in the September 20 Order would require the implementation of market power mitigation mechanisms; however, the Commission declined to adopt comprehensive mitigation scheme at that time.

24. The MRTU is progressing with conceptual filings on a staged basis, and to date the CAISO has not put before the Commission its revised market power mitigation proposal. As we have stated previously, the market design in its entirety should fit together as a package. We fully expect market power mitigation to be part of the comprehensive design and will rule on mitigation when the CAISO has put the filing before us and has addressed the market power mitigation in the context of the full market design and the CPUC's Resource Adequacy Proceeding.[17]

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[16] *See id.* at P 27.

[17] *See id.* at P 34. Also, the CPUC's Resource Adequacy Proceeding is ongoing in *Public Utilities Commission of the State of California, Order Instituting Rulemaking to Promote Policy and Program Coordination and Integration in Electric Utility Resource Planning*, Docket # R. 04-04-003.

### B. Energy Rebids by Ancillary Service Sellers

25. In the June 2004 Order, the Commission allowed units selected to provide RUC to adjust their energy bids from their day-ahead levels, subject to applicable market power mitigation. In the September 20 Order, we extended the same policy to sellers of ancillary services capacity – that is, to allow sellers of ancillary services capacity to change their real time energy bids from their day-ahead levels, subject to applicable market power mitigation. The rationale for both decisions was the same – that fuel costs (an important component of a generator's costs) can change between the day-ahead and real-time markets, and thus, both RUC and ancillary service providers should have an opportunity to adjust their energy bids accordingly.

26. The CAISO seeks rehearing of our decision regarding rebidding by ancillary service providers, arguing that ancillary service sellers should not be allowed to increase their energy bids in real time above the energy bids submitted in the day-ahead bidding process.[18] The CAISO offers three reasons for its position. First, upward rebidding would undermine the principle of co-optimization. The CAISO explains that the IFM must consider energy bids in developing a co-optimized schedule of energy and ancillary services, and if day-ahead energy bids are not binding when accepted, then day-ahead schedules that appear to be optimal based on the day-ahead energy bids will no longer be optimal when some of those energy bids are subsequently increased. Second, the CAISO argues that permitting ancillary service sellers to change their energy bids in real time constitutes a modification of contracts without the consent of the CAISO, which is a party to the contract. Third, according to the CAISO, allowing such bid increases would increase the likelihood of divergence between day-ahead and real-time energy prices, because it would systematically lower day-ahead energy prices relative to real time. The CAISO points out that the Commission has found price convergence to be a beneficial goal of market design.

27. We deny the CAISO's request for rehearing on this issue. We disagree with the CAISO that allowing ancillary service providers to increase their energy bids would undermine co-optimization. The CAISO argues that allowing energy bid increases would distort the selection of ancillary service providers. That is, it would cause what appeared to be an optimal schedule of ancillary service providers to be sub-optimal when energy bids are subsequently increased. This conclusion would be correct if a higher energy bid resulted in a higher cost of providing ancillary services (so that a generator that appeared to be a low-cost ancillary service provider turned out to be a higher cost provider after it increased its energy bid). However, the opposite is true; a higher energy bid would

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[18] We note that the CAISO does not object to allowing ancillary service sellers to reduce their real-time energy bids below their day-ahead bids; indeed, the CAISO proposal permits such bid reductions.

reduce a generator's opportunity cost of providing ancillary services. In selecting among ancillary service providers, each generator's energy bid is used to calculate its opportunity costs. Opportunity costs are calculated as the difference between the Locational Market Price (LMP) and the generator's energy bid; as a result, a higher energy bid will result in a lower opportunity cost (for a given LMP). Thus, if the CAISO selects a generator to provide ancillary services based on its day-ahead energy bid, the CAISO would also have selected the generator to provide ancillary service if a higher, real-time energy bid had been considered in place of the day-ahead energy bid.

28. We also disagree with the CAISO that permitting ancillary service sellers to change their energy bids in real time constitutes a modification of contracts without the consent of the CAISO, which claims to be a party to the contract. The CAISO's obligation to purchase ancillary services is governed by its tariff, which we review and accept. We have concluded that the tariff should allow a seller of ancillary services to revise its energy bid in real time from its day-ahead energy bid to reflect current conditions. The CAISO, when making its ancillary service commitments, would know that the supplier would be permitted under the tariff to change its energy bid associated with an accepted ancillary services capacity bid. Thus, the relationship between the CAISO and suppliers is governed by the Commission-approved tariff and not by a contract in this case. Under the tariff, when the CAISO accepts an ancillary service bid, the generator commits its designated capacity to be on reserve and to refrain from producing energy from the capacity unless and until it is instructed to do so by the CAISO. Under the tariff, the generator accepted to provide ancillary services need not commit in the day-ahead market to the energy price at which it is willing to sell energy in real time from its ancillary service capacity.

29. Finally, we disagree with the CAISO that permitting ancillary service rebidding is inconsistent with previous orders that encourage price convergence between the day-ahead and real-time markets. Real-time prices and schedules should reflect the actual market conditions (including costs) that arise in real time; otherwise, real-time dispatch may not be a least-cost dispatch. It is desirable for day-ahead prices to converge toward real-time prices, so that market participants can make more efficient decisions in advance, in the day-ahead time frame. When market conditions expected in the day-ahead time frame differ from the actual market conditions that arise in real time, day-ahead prices may tend to differ from real-time prices. Entities that accurately foresee these price differences can help eliminate the differences by submitting convergence bids

in the day-ahead market that help to converge the price difference between the day-ahead and real-time markets.[19] Such bidding involves risk and is best undertaken by those with the greatest tolerance for risk and those with the greatest talent for identifying price differences. Therefore, the risk of estimating price changes should be assumed voluntarily. Preventing ancillary service providers, on the other hand, from adjusting their energy bids unnecessarily forces these providers to estimate fuel cost changes between day-ahead and real time. As we stated in our September 20 Order, the additional uncertainty created by preventing such bid adjustments may create a need for ancillary service sellers to include a risk premium in their availability bids, which will tend to increase the costs of procuring ancillary services.[20] Thus, we deny the CAISO's request for rehearing on this issue.

### C. Convergence Bids

30. The CPUC argues that by giving the CAISO an option to either file tariff sheets implementing a bidding structure that involves financial settlement without physical delivery (previously referred to as virtual bidding[21]) or to provide a detailed explanation of why this type of bidding should not or cannot be implemented, the Commission acknowledged the limits of its jurisdiction in regard to such bidding. In connection with this, the CPUC seeks clarification that the September 20 Order simply encourages the CAISO to implement this option and does not mandate it. If the latter is true, the CPUC seeks rehearing of that Commission ruling.

[19] Convergence bids (previously known as virtual bids) are bids to buy or sell energy in the day-ahead market that, ultimately, will not be produced or consumed by the bidder in real-time. Convergence bids allow a participant to buy (or sell) energy in the day-ahead market and simultaneously to assume an opposite obligation to sell (or buy) an identical amount of energy in the real-time market. Convergence bids are submitted only in the day-ahead market and are not relied upon to provide physical delivery in real time.

[20] *See September 20 Order* at P 51.

[21] The term "virtual bidding" is somewhat of a misnomer in that it implies that bids are purely "virtual" and thus have no impact on markets. This is not the case. In California, such bids would be submitted in the same way and at the same time as all other bids in the day-ahead market, and would be cleared along with other bids, thus affecting the outcome of the day-ahead market.

31. In the September 20 Order, we found that:

> … [a]s an important element of the operation of the CAISO's wholesale market, [convergence] bidding directly affects rates by determining (in conjunction with other bids) the unit that sets market clearing price. … [I]ts effect is necessary and helps to ensure that prices for energy in spot markets, as well as congestion charges for transmission service, are just and reasonable.[22]

Section 205 of the Federal Power Act[23] gives the Commission the authority and responsibility to ensure that rates for jurisdictional power sales are just and reasonable. The Commission also has jurisdiction over practices that affect those rates. Since convergence bidding affects the market clearing price for wholesale power by determining, in conjunction with other bids, the unit that sets the market clearing price, the Commission has statutory authority over this type of bidding to ensure that the rates it produces are just and reasonable.

32. In the September 20 Order, we directed the CAISO to submit "either tariff sheets to implement [convergence] bidding simultaneously with the implementation of the day-ahead market, or a full explanation of why this should not be done, and the date when it would be implemented."[24]

33. In this order, we clarify our direction to the CAISO. The CAISO is directed to either: (1) submit tariff sheets to implement convergence bidding simultaneously with the implementation of the day-ahead market, or (2) if it does not believe the simultaneous implementation to be feasible, explain why and inform the Commission of a date when it would be feasible to implement it . We also deny the CPUC's request for rehearing and clarify that while we allow the CAISO flexibility in the *timing* of filing tariff language addressing convergence bidding, we believe such bidding to be beneficial to the California market and direct the CAISO to include it in its market design.

The Commission orders:

(A) The CPUC's and CAISO's requests for rehearing are hereby denied for the reasons stated in the body of this order.

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[22] *See September 20 Order* at P 76.

[23] 16 U.S.C. § 824d (2004).

[24] *See id.* at P 75, *citing June 2004 Order* at P 159.

(B) The CPUC's request for clarification is hereby granted in part and denied in part as discussed in the body of the order.

By the Commission. Commissioner Kelly not participating.

( S E A L )

Magalie R. Salas,
Secretary.