UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
William L. Massey, Linda Breathitt,
and Nora Mead Brownell.

California Independent System
Operator Corporation

Docket No. ER02-1656-000

Investigation of Wholesale Rates of
Public Utility Sellers of Energy and
Ancillary Services in the Western
Electricity Coordinating Council

Docket No. EL01-68-017

ORDER ON THE CALIFORNIA COMPREHENSIVE
MARKET REDESIGN PROPOSAL

(Issued July 17, 2002)

1. In this order, we accept, reject, and modify in part, the California Independent System Operator Corporation's (CAISO) Comprehensive Market Redesign Proposal (MD02). In addition, we implement a West-wide market power mitigation program. This order benefits customers by approving a competitive market design that will enhance reliability and provide power at just and reasonable prices.

2. We cannot rule in isolation on the California market design, as California is an integral part of a trade and reliability region in the West. Because of this interdependency of market and infrastructure, conditions in and changes to the California market affect the entire region. To provide some context for these issues, consider that electricity demand across the West has grown at almost three percent over each of the past five years. Today California relies on imports to meet approximately twenty percent of its energy, but has built little new bulk transmission to assure access to these imports. Over 4,500 megawatts of new generation have been brought on-line in California since January, 2000, yet over 20,000 MW of proposed power plants have been cancelled or delayed and another 1,400 megawatts of in-state generation may be retired before the end of the year. Reserve margins in the Western Electricity Coordinating Council last year fell to only ten percent, the lowest in the nation. With the Southwest, there is very limited on-line generating capacity relative to demand this summer, with available reserves in real time

as low as zero across Arizona, Nevada and New Mexico and at seven percent in California.[1]

3. In this order, the Commission takes comprehensive action to improve California's market rules and update market power mitigation over the short term, to build a sound foundation for long term markets and infrastructure investments. We continue the existing must-offer provision across the West. To protect against the exercise of market power and its impact on electric prices, we adopt a set of Automatic Mitigation Procedures to identify and limit excessive bids and local market power within the California market. We complement this with a Western Interconnect-wide bid cap of $250/MWh. We direct the CAISO to continue and expedite its efforts to replace the current zonal congestion management system with nodal pricing by the fall of 2003. These measures build upon the proposal filed by the CAISO and reflect many of the recommendations of the CAISO's Market Surveillance Committee, an independent advisory group of experts. We direct the CAISO to work with stakeholders in a series of technical conferences to refine additional issues such as what mechanism to use to assure generation adequacy and complete implementation of its full network model. Last, this Commission urges California officials to act aggressively to improve its energy infrastructure, including the construction of new power plants, transmission lines and gas pipelines and to improve the ability of retail customers to see and respond to wholesale price signals.

Background

4. As has been widely reported for the past two years, the California wholesale electricity market has been dysfunctional and has experienced extremely high prices during certain periods. The causes of such dysfunction are many. Predominant among them are: reliance on spot market transactions required by the initial California market design and the concomitant inability of load serving entities to engage in forward contracting; a lack of retail price signals reflecting the cost of wholesale electricity;[2] and

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[1] See e.g., Commission Staff Report, Western Market and Infrastructure Assessment (July 2002); Staff Report to the Federal Energy Commission on Western Markets and the Causes of the Summer 2000 Price Abnormalities (November 1, 2000); Report to the Western Governors' Association: Conceptual Plans for Electricity Transmission in the West (August 2001).

[2] We note that California is not alone in missing this critical element of a well
(continued...)

local market power of some suppliers due to transmission constraints on the California grid. These conditions, which are a mixture of market design flaws and inadequate infrastructure, must be corrected for a robust, competitive California market to evolve in the long run.

5. Although some corrections have been implemented, such as the forward contracts entered into by California during 2001, many of the solutions have yet to be pursued or require coordinated efforts over a longer time to accomplish. Consequently, as we discuss below, through a series of orders issued over the past two years, we resorted to the short-term solution of mitigation measures to keep prices in check while providing additional time for market improvements to occur. While aware of the beneficial results of mitigating local market power through such measures, we also are mindful of the potentially adverse short-term and long-term consequences of our actions. In the short-run, price mitigation measures often are not effective under heavy demand conditions when they are needed most.

6. Nonetheless, the mitigation measures, in combination with other events, have restored some stability to the California market. But we caution that the improvement witnessed over the last year should not instill a false sense of security that the California market is mended permanently. Many of the factors contributing to this improvement in the market place are likely temporal in nature and cannot be expected to continue in the long term, including the relatively cool summer temperatures experienced in 2001, the downturn in the California economy, ten percent energy conservation by customers, greater availability of hydroelectric energy, accelerated permitting and construction of generating units, and a decline in natural gas prices.[3]

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[2](...continued)
functioning electricity market. The ability of customers to change use patterns and avoid purchasing power at high prices is an effective means to reduce supplier market power. With a demand response program in place, attempts to raise prices would result in lost sales, which is the most effective deterrent to the exercise of market power.

[3]The CAISO's Market Surveillance Committee has noted that "[CA]ISO operators report that, in contrast to previous summers, suppliers were eager to supply the California market during unexpectedly high demand conditions of the summer of 2001" in order to prevent a downward adjustment in price mitigation due to lower natural gas prices. See CAISO May 1 Filing, Attachment V at 7.

7. In fact, it is because additional infrastructure changes and other market improvements are still needed to make the California market competitive in the long run that we required the CAISO to submit a congestion management proposal and a plan for a day-ahead market. The CAISO, in turn, has engaged in a process to identify the needed components of a long-term market design for the California market as well as certain short-term elements that would be needed while permanent elements are under development and testing. The CAISO management prepared a plan and presented recommendations to its Board of Governors (Board) on several occasions prior to filing the application that is addressed by our order today.[4] With stakeholder input, the CAISO's recommendations considered the current state of the California market and incorporated design elements necessary to implement a long-term plan for a competitive market in California.

8. Among the CAISO's initial proposals was a bid cap for in-state markets set at the higher of $250/MWh or three times the cost of a gas-fired generating unit. In supporting the recommended level of the bid cap, the CAISO noted that a lower cap would likely cause market distortions and result in more transactions being accomplished outside of established market (i.e., through "out of market" calls which would detract from market price transparency). After consultation with the Board, the CAISO reduced its cost cap to two times the cost of a gas-fired unit, which it clarified as less desirable than continuing our existing price mitigation program of only $108/MWh, with provisions for an upward change if natural gas prices increase. The CAISO has also been required by its Board to reduce or narrow thresholds for other mitigation measures it initially found necessary to support the development of its long-term market design proposal.[5]

9. As we discuss later in this order, the CAISO's long-term comprehensive market redesign proposal has elements that we believe are necessary to support a robust, competitive wholesale market in California in the long run. Many of the elements, however, are not proposed to be implemented for some time. It is not clear whether the limited measures it proposes for the short-term would provide appropriate mitigation against the potential for market power abuse, and not just mitigation of prices. We are also concerned whether these market power mitigation proposals provide incentives for new entry into the generation and demand response markets.

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[4]See e.g., April 3, 2002 CAISO presentation to Board of Governors, April 25, 2002 CAISO presentation to Board of Governors. http:\\www.caiso.com\pubinfo\BOG.

[5]As we discuss later, at the direction of the Board the CAISO also reduced the proposed threshold levels for applying its screens for automatic mitigation procedures.

10. In requiring the CAISO to file a comprehensive market redesign, we simultaneously urged state officials and other affected market participants to begin changing the way customers see price signals and to accelerate needed transmission and generation investments. In our November 1, 2000 order proposing remedies for the California market,[6] the Commission identified a number of structural reforms and market rule changes that were necessary in order for a robust, stable, competitive bulk power market to operate over the long term in California and West-wide. While we imposed certain price mitigation measures to be effective for an interim period to help alleviate the extremely high prices being borne by Californians,[7] the Commission noted that other changes and improvements were needed to insure that sellers continue to have sufficient incentives to sell into California and to build sorely needed generation and transmission necessary to provide reliable service in the future.

11. We identified a number of long-term structural reforms that needed to be implemented, including the following:

(A) new approaches to reserve requirements;

(B) elimination of the requirement for balanced schedules;

(C) improved market monitoring and market power mitigation strategies;

(D) the submission of a congestion management redesign proposal;

(E) demand bidding by the CAISO and Scheduling Coordinators;

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[6]See San Diego Gas & Electric Co. v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, et al., 93 FERC ¶ 61,121 (2000). We formalized these remedies, and amended them in certain respects (e.g., applying price mitigation to all hours and West-wide) through various orders that followed. See 93 FERC ¶ 61,294 (2000) (December 15 order), 95 FERC ¶ 61,115 (2001) (April 26 order), and 95 FERC ¶ 61,418 (2001) (June 19 order).

[7]The price mitigation measures were aimed at reducing the undue reliance on the spot market so that price volatility, which is an expected phenomenon in spot markets, would no longer have the ability to cause adverse consequences that had been experienced in the California market. See December 15 order at 61,992.

(F) establishment of generator interconnection procedures;

(G) establishment of an independent, non-stakeholder Governing Board for the CAISO;

(H) reducing delays in siting additional generation and transmission capacity;

(I) implementation of additional demand response programs at the retail level; and

(J) elimination of impediments on load serving entities pursuing power supplies on a forward basis.

12. Only with these infrastructure additions and improved market rules and price signals can California's wholesale electricity market improve and work for the long term. In addition, while the Commission ordered remedies pursuant to the jurisdictional powers that we possess, we noted that many of the critical longer-term needs, such as siting and demand response at retail, were not within our authority to implement. We urged at that time, and continue our request today, that the appropriate State authorities take immediate action to address these issues. Many of these recommendations are addressed in this order, but it will take months before the solutions take effect.

13. On June 19, 2001, we further ordered that price mitigation measures be effective through September 30, 2002, to allow time for the long-term structural reforms to be fleshed out and implemented.[8]

14. On December 19, 2001, the Commission issued an Order on Clarification and Rehearing in which we directed the CAISO to file by May 1, 2002, a revised congestion management proposal and a plan for implementation of a day-ahead market.[9] On May 1,

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[8]June 19 order at 62,549.

[9]See San Diego Gas & Electric Co. v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, et al., 97 FERC ¶ 61,275 (2001) (December 19 Rehearing Order). Because the CAISO's MD02 proposal requests significant changes to its operations that go well beyond both a revised congestion management proposal and a plan for implementation of a day-ahead market, we will treat the MD02 proposal as a new

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2002, the CAISO filed its MD02 proposal (May 1 Filing) in which it addressed known deficiencies in the CAISO's existing market design. The CAISO requests in this filing that the Commission extend the existing price mitigation measures, with a few proposed modifications, until the California electricity market is capable of producing, on a sustained basis, prices that are just and reasonable through a robust and competitive market. The CAISO states that if the Commission allows the current mitigation measures with some modifications to remain in effect after September 30, 2002, the CAISO can continue to work towards implementing market design changes, as approved by the Commission, without potentially destabilizing the market.

The CAISO Proposal

15. The CAISO states that it recognizes that the current congestion management system is "severely flawed" and that MD02 is intended to provide for more stable operations through the promotion of day-ahead scheduling, commitment and contracting. Furthermore, the CAISO intends that its proposals will increase operational and price transparency through accurate modeling of the transmission system to reveal true and accurate price differences on the system. The May 1 Filing has the following principal elements:

(A) Monitoring and mitigating market power and prices through short-term and long-term measures. Although these are part of the California market design package, the current and some of the proposed price mitigation measures apply to the entire Western Interconnection.[10] In the short-term, the CAISO proposes to "narrow" the current must-offer requirement in accordance with its residual day-ahead unit commitment process proposal. In addition, the CAISO proposes the use of a 12-month competitiveness index that will attempt to measure the competitiveness of its markets over time against benchmark average market prices. In this proposal, if average market prices exceed the benchmark average prices by more than $5/MWh, the Commission's pre-September 30, 2002 West-wide mitigation measures would be reinstated and bids in the CAISO's markets would be limited in accordance with cost-based proxy bid mitigation measures in all hours, for a period of six months, or until the market is found to be competitive or

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[9](...continued)
Section 205 filing under Docket No. ER02-1656-000. For this reason, we will not analyze the MD02 proposal as a compliance filing under Docket No. EL00-95-001.

[10]The mitigation measures apply to spot market transactions in the U.S. portion of the Western Interconnection.

more permanent solutions can be developed. The CAISO also proposes that, if the Commission decides against extending the existing mitigation measures beyond September 30, 2002, certain market power mitigation measures should be implemented on October 1, 2002, rather than for the long-term. Specifically, the CAISO proposes that market power should be mitigated through a damage control bid cap (bid cap)[11] and "automatic mitigation procedures." (AMP). Specifically, the CAISO proposes a bid cap with a floor[12] of $108/MWh that can increase with the price of natural gas and over time as additional elements of MD02 are phased in and capacity conditions improve. The CAISO's AMP proposal would apply to bids that substantially exceed historical levels and threaten to materially impact market clearing prices. The CAISO proposes thresholds to trigger AMP when a given resource's bid is the lower of 100 percent or $50/MWh above historically accepted bid levels and would also increase real-time market clearing prices by the lower of 100 percent or $50/MWh. This proposed measure would apply to all bids, including hydroelectric resources and imports, but would not apply during hours in which the CAISO has a day-ahead demand forecast exceeding 40,000 MW, nor would the accepted bids during these hours count toward a resource's historical bid average for mitigation purposes.

(B) Local market power mitigation of suppliers' bids in hour-ahead and real-time spot markets when resources must be taken out of economic merit order to serve local reliability needs. The CAISO states that local market power can occur in the decremental bid market when it must dispatch generators' resources out of merit order for local reliability purposes. The CAISO proposes that unit-specific bid caps be used to mitigate this local market power.

(C) A day-ahead market employing locational marginal prices for the integrated procurement of energy and ancillary services. The CAISO proposes a day-ahead market to manage congestion on its controlled grid that will utilize a "full network model" to identify constraints that will allow the CAISO to adjust generation and load schedules to ensure grid security and reliability. The CAISO states that it will no longer differentiate between inter-zonal and intra-zonal congestion; nor will it employ a market separation

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[11]Although the CAISO describes its bid cap for "damage control" purposes, we believe the bid cap is more appropriately viewed as a safety-net bid cap mechanism. We will use the term "bid cap" in this order to refer to this element.

[12]"Floor" refers to the CAISO's proposal that the cap increases with changing fuel prices, but can never fall below $108.

rule to restrict trades between Scheduling Coordinators,[13] but it will use locational marginal prices at each node. It states that the differences between locational marginal prices at nodes will be the congestion costs payable by transmission customers.

(D) A modification to the Firm Transmission Rights, or Congestion Revenue Rights (CRRs),[14] that the CAISO has issued to incorporate a point-to-point design consistent with the new approach to congestion management.

(E) A residual day-ahead unit commitment mechanism to allow the CAISO to commit additional resources to meet the CAISO's forecast of the next day's demand. The CAISO states that the residual day-ahead unit commitment process is necessary to ensure reliable system operation by, in part, moving operating and commitment decisions from real-time to the day-ahead market.

(F) A real-time economic dispatch and congestion management program to run every ten minutes during real-time operations. The CAISO states that this security-constrained economic dispatch program will take into account all transmission constraints, local reliability needs, and generator operating constraints, as well as system energy needs. Furthermore, the CAISO states that the dispatch of resources will produce locational marginal prices at each node that will establish prices at which suppliers would be paid and which can be aggregated to establish prices paid by load-serving entities that purchase imbalance energy. The CAISO also proposes penalties for excessive uninstructed deviations to ensure that resources comply with the CAISO's dispatch instructions and thereby promote a reliable and efficient real-time market.

(G) A simplified hour-ahead market for congestion management and energy trading that would close as late as 60 minutes before the operating hour.

(H) An available capacity (ACAP) requirement to allow the CAISO to verify that load-serving entities are making the necessary advance arrangements to ensure that adequate generating capacity is available to meet system load and reserve requirements. The

[13]Scheduling Coordinators are the only entities permitted to submit schedules of resources and load to the CAISO. Currently, the CAISO rules require Scheduling Coordinators to submit balanced schedules and prevent them from trading net positions with each other.

[14]We will use the term "congestion revenue rights" in this order when referring to this market design element.

CAISO proposes that the resources identified by load-serving entities to satisfy this requirement must be made available to the CAISO in the day-ahead market. Furthermore, the CAISO proposes that the ACAP requirement be phased in over a four-year period to give load-serving entities sufficient time to acquire the necessary portfolio of resources.

16. In the May 1 Filing, the CAISO proposes to implement its plan in three discrete phases.[15] Phase one includes design elements that the CAISO proposes to be implemented on October 1, 2002, the day following the end of the current mitigation measures, except for local market power mitigation, which the CAISO proposes be given a July 1, 2002 effective date. The CAISO contends that the phase one changes are necessary to prevent physical and economic withholding from the market and thus are appropriate to replace the existing mitigation measures and to be used for the long-term.

17. In addition to the modified must-offer, bid cap, AMP and local market power mitigation measures, the phase one market design elements that the CAISO proposes to implement on October 1, 2002 include the following: the residual day-ahead unit commitment process; real-time economic dispatch; use of a single energy bid curve; penalties on generators for failure to comply with dispatch instructions; a rolling 12-month competitive index with pre-authorized mitigation; and a cap on decremental bids.

18. The CAISO proposes that the phase two and phase three design elements be implemented in Spring 2003 and Fall 2003/Winter 2004, respectively. The phase two proposal contains most of the comprehensive design proposals except for the full network model. Phase three, as proposed, would complete the comprehensive design with the implementation of the detailed network model and the redesign of the firm transmission rights.

19. In this order, the Commission addresses elements of the phase one proposal that are necessary at this time to maintain continued stability in the California energy market and that promote necessary market-based changes. We will first address the mitigation elements of the MD02 proposal and then discuss the CAISO's comprehensive market design proposals. With regard to the phase two and phase three proposals, the

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[15]On June 17, 2002, the CAISO submitted proposed tariff language that primarily reflects the phase two and phase three MD02 market design elements (June 17 Filing). In that filing, the CAISO proposes to further delay the implementation of its ACAP proposal from Fall 2003 until Winter 2004. While we take note of specific statements in the June 17 Filing, as we state infra, that submittal will be the subject of a separate Commission order to be issued at a later date.

Commission will address these proposals following additional technical conferences with stakeholders, with the exception of certain market design elements for which we will require the CAISO to expedite their development and implementation.

Discussion

1. Notice of Filings and Responses

20. Notice of the CAISO May 1 Filing was published in the Federal Register on May 10, 2002, 67 Fed. Reg. 31,797 (2002), with comments, protests, and motions to intervene due on or before May 22, 2002. On May 17, 2002, a notice was issued that granted an extension of time for the filing of comments concerning the CAISO's May 1 Filing through May 30, 2002.[16] Notices concerning a May 21, 2002 CAISO errata filing were published in the Federal Register on June 3, 2002, 67 Fed. Reg. 38,265 (2002), and on June 4, 2002, 67 Fed. Reg. 38,494 (2002). The latter of these two notices informed the public that answers to the CAISO's errata were due on June 4, 2002, rather than on June 11, 2002, as the earlier errata notice had indicated.

21. The following parties filed timely unopposed motions to intervene and comments: Bonneville Power Administration (BPA); California Department of Water Resources State Water Project (California State Water Project); Californians for Renewable Energy, Inc.; California Municipal Utilities Association (CMUA); Calpine Corporation (Calpine); Dynegy Power Marketing (Dynegy); City and County of San Francisco (San Francisco); City of Palo Alto, California (Palo Alto); City of Redding, California (Redding); City of Santa Clara, California (Santa Clara); City of Vernon, California; Cogeneration Association of California and Energy Producers & Users Coalition (CAC/EPUC); Duke Energy North America, and Duke Energy Trading and Marketing, LLC (Duke); Edison Mission Energy and Edison Mission Marketing & Trading, Inc. (Edison); Electric Power Supply Association and the Western Power Trading Forum (EPSA); Independent Energy Producers Association (IEP); Market Surveillance Committee of the CAISO[17];

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[16]The following parties filed the May 13, 2002 and May 16, 2002 motions for extension of time to submit comments concerning the CAISO's May 1 Filing: Independent Energy Producers Association; Western Power Trading Forum; and, together, the California Municipal Utilities Association and the Electric Power Supply Association.

[17]The Market Surveillance Committee is an independent advisory group of
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Metropolitan Water District of California (Metropolitan); Mirant Parties (Mirant); Modesto Irrigation District; Northern California Power Agency (NCPA); Pacific Gas and Electric Company (PG&E); Reliant Energy Power Generation (Reliant); Sacramento Municipal Utility District (SMUD); Sempra Energy (Sempra); Southern California Edison Company (SoCal Edison); Strategic Energy Limited (Strategic); Transmission Agency of Northern California (TANC); Williams Energy Marketing & Trading Company (Williams); City of Burbank, California (Burbank); Imperial Irrigation District (IID); and the Turlock Irrigation District (Turlock). On May 15, 2002, the California Public Utilities Commission (CPUC) filed a timely notice of intervention and on May 30, 2002, it filed comments on behalf of the California Inter-Agency Working Group (California Inter-Agency Group).[18] On June 17, 2002, the CAISO filed an answer to the protests (Answer).

22. The following parties filed timely unopposed motions to intervene that raised no substantive issues: Avista Corporation; Constellation Power Source, Inc.; Lassen Municipal Utility District; Pinnacle West Capital Corporation; Powerex; UBS AG; and the Western Area Power Administration. On June 12, 2002, Southern California Water Company filed an untimely motion to intervene that raised no substantive issues. On June 19, 2002, AES Companies filed an untimely motion to intervene in which it referenced its May 30, 2002 filing that comments on aspects of the MD02 proposal.

23. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure,[19] the CPUC's notice of intervention and the timely, unopposed motions to intervene of the

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[17](...continued)
industry experts. To ensure independence, none of its members is affiliated with or has any financial interest in any market participant. Its charter allows it to suggest changes in rules and protocols or recommend sanctions or penalties directly to the CAISO Governing Board. The Market Surveillance Committee has the following functions: (1) provide independent review of market performance and market power problems; (2) develop a record of structural problems and propose corrective action; and (3) review rule changes, penalties, and sanctions.

[18]The CPUC states that the California Inter-Agency Group is composed of staff members from the CPUC, California Energy Commission, California Electricity Oversight Board, Consumer Power and Conservation Financing Authority, and the California Energy Resources Scheduling division within the Department of Water Resources.

[19]18 C.F.R. § 385.214 (2002).

movants listed above serve to make them parties to this proceeding. Regarding the untimely motions to intervene from the AES Companies and Southern California Water Company, given their interest in this proceeding, the early stage of the proceeding, and the absence of any undue prejudice or delay from granting late intervention, we will grant these parties' intervention. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure prohibits the filing of an answer to a protest unless otherwise permitted by the decisional authority.[20] We will accept the CAISO's Answer because it has assisted us in understanding the issues before us.

2. MD02 Mitigation Proposal

A. West-Wide Mitigation Measures

1. Request to Extend Existing West-Wide Mitigation; Must-Offer Requirement

24. The CAISO requests that the Commission extend the existing price mitigation measures because it believes that the market is incapable of producing, on a sustained basis, prices that are just and reasonable. The CAISO notes that many of the needed structural reforms to the California market that the Commission identified have not been implemented, and without them the current price mitigation should be extended.[21] However, if the Commission does not extend the existing mitigation measures, the CAISO urges the Commission to consider certain alternative mitigation measures. This alternative market power mitigation approach consists of a continued must-offer obligation, which would be implemented through a proposed residual unit commitment process, with two additional elements, a bid cap and automatic bid mitigation, to prevent economic withholding. The CAISO proposes to implement these elements in complementary fashion with other measures to mitigate the potential abuse of market power: locational market power mitigation; a 12-month market competitiveness index; and interim forward intra-zonal congestion management.

a. Comments

[20] 18 C.F.R. § 385.213(a)(2) (2002).

[21] Answer at 17.

25. While California load serving entities, municipalities, and state agencies[22] support the CAISO's recommendation to extend the current West-wide market power mitigation measures beyond the current September 30, 2002 expiration date, suppliers[23] uniformly oppose any extension.

26. PG&E states that the Commission should maintain the current West-wide mitigation measures "to eliminate in the most comprehensive manner, opportunities for anti-competitive practices by market participants."

27. EPSA states that the Commission should avoid taking steps to extend the existing price controls to address problems that no longer exist. Duke recommends that the Commission continue the must-offer requirement and adopt an appropriate West-wide bid cap to be phased in according to preestablished milestones.

28. Calpine states that it believes that the current price cap mitigation measures imposed on the Western markets could have the effect of distorting markets. Nevertheless, Calpine maintains that it could support application of the "winter West-wide price mitigation mechanism"[24] on the condition that the Commission establish an absolute deadline of Spring 2003 for implementation of the long-term design proposals by the CAISO, and that the Commission and its staff lead this process in a settlement type of proceeding. However, Calpine states that it does not support continuation of a price cap mechanism that could be reset to a level below the current floor.

b. Commission Ruling

29. In the eighteen months since we implemented mitigation measures, the extraordinarily high spot market prices that plagued California have abated. A number of factors in addition to our mitigation measures have contributed to minimizing the dysfunction of the California spot market. Also, a host of market participants and state agencies have undertaken efforts that collectively have improved market conditions. We

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[22]See e.g., PG&E, SoCal Ed, California Inter-Agency Group, SMUD, TANC, California State Water Group, NCPA, San Francisco, Metropolitan.

[23]See e.g., EPSA, IEP, Reliant, Dynegy, Duke, Mirant, Williams.

[24]The "winter mitigation" established a hard cap of $108/MWh that could only change upward if gas prices rose at least 10percent above the level supporting the then-existing cap. See Investigation of Practices of the California Independent System Operator and the California Power Exchange, 97 FERC ¶ 61,293 (2001).

commend the actions of the many Western entities, in particular those states bordering California, that enabled power supplies to be expanded. These actions, including expedited siting processes and accelerated construction programs, have increased available supplies to California and the West. Notwithstanding these accomplishments, without balanced market rules, sufficient infrastructure, and effective market oversight and market power mitigation, a competitive market cannot be created or sustained over the long run.

30. We observe that the CAISO has included several of the needed structural reforms outlined above as part of its MD02 comprehensive market redesign. A revised congestion management methodology, elimination of the balanced schedule requirement, the potential for demand-side participation in CAISO markets, and a resource adequacy proposal are all part of its long-term comprehensive market redesign proposal. In addition, generation interconnection procedures for the CAISO have been filed with, and accepted by, the Commission.[25] The CAISO indicates that it will file improved market monitoring and market power mitigation plans in August 2002. We further note that the CAISO is participating in discussions with other entities in the West that are developing regional transmission organization (RTO) proposals[26] as part of the Seams Steering Group - Western Interconnection (SSG-WI) to identify and resolve potential seams issues among them. The CAISO also indicates that the CPUC issued a rulemaking to establish guidelines for the procurement of electric energy, capacity and ancillary services by investor-owned utilities in California.[27]

31. All of these actions, when completed, will become part of the balanced market rules that are necessary to support the operation of a competitive market in California and

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[25]See San Diego Gas & Electric v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator Corp. and the California Power Exchange, 99 FERC ¶ 61,275 (2002), rehearing pending. The procedures are subject to the outcome of the Commission's final rule on Generator Interconnection Procedures in Docket No. RM02-1-000.

[26]A group of utilities have filed a proposal to form an RTO in the Pacific Northwest, RTO West. Several public utilities in the desert Southwest have filed a proposal to form WestConnect, LLC as an RTO in that region of the West. The Commission will address those proposals in separate orders in the near future. See Docket Nos. RT01-35 and RT02-1, respectively.

[27]CPUC Docket No. 01-10-024. A decision is expected in October 2002. Answer at 23, note 15.

West-wide. However, because many of these elements will not be effective by October 1, 2002, the Commission cannot allow unfettered activity in California markets without the protection afforded by such market design elements and market rules being in place.

32. We further observe that infrastructure changes, such as expedited siting and accelerated construction of new generating plants, have bolstered supply to some extent. Other events collectively have increased available energy supply or decreased demand with a resultant decline in spot market prices. In addition, the increased use of forward contracts has greatly reduced the share of the market subject to the volatility of the spot market. However, as noted above, many of the factors contributing to this improvement in the market place cannot be expected to continue in the long term. Many proposed power plants have been cancelled, customer willingness to participate in interruptible rate programs has diminished, and impressive peak conservation levels may not be sustainable. With overall Western loads growing at 2.65 percent annually and Arizona, Nevada and New Mexico facing very low reserve margins, California can not continue to rely on imports to ensure reliability and low electric prices.

33. Moreover, even with appropriate market rules in place and adequate supply in the short run, adverse consequences can occur if market infrastructure is insufficient to support future demands. The existence of significant transmission constraints and lack of sufficient generation capacity within California, and the limitations of transfer capacity into California from neighboring areas, as noted above, are well documented. In addition, the increasing reliance on natural gas as the fuel for new generating units has placed a strain on the industry's ability to build pipeline expansions from production basins to delivery points at the California border, as well as increasing the need for pipeline transportation capacity within California.

34. The failure of infrastructure improvement to keep pace with California's demand, and the delay in implementation of key elements of the CAISO comprehensive market redesign proposal, such as a resource adequacy solution, leaves the Commission with little choice but to extend market protections.[28] The Commission does not make this

[28]However, the Commission does not believe that redesigned elements must be implemented according to the timeline the CAISO proposes. Consequently, as discussed later in this order, we are directing the CAISO to expedite the development and implementation of certain elements of its market design, and we are directing the staff to make a resource adequacy solution, consistent with the forthcoming Standard Market Design NOPR, the primary focus of the technical conference established by this order.

decision lightly. Our continued intervention subjects the market to additional pressures that we would prefer to avoid under other circumstances.[29]

35. While we continue to believe that maintaining stability in the Western energy markets through some form of mitigation is necessary beyond September 30, 2002, we find that the current mitigation plan can be improved through measures that will encourage market-based reforms and, at the same time, continue to provide reliable service at just and reasonable prices and mitigate the potential for market power abuse. We find that extending the current West-wide must-offer requirement is necessary to ensure reliable energy supplies and continued short-term market stability.[30] We will consider removing the must-offer requirement in the future after we determine that adequate infrastructure and market design improvements have been made and Western market prices reflect competitive outcomes on a more consistent basis.

36. By extending the current must-offer requirement, the Commission is able to provide continued market stability until long-term market-based solutions can be fully implemented. The Commission believes that rebuilding confidence in the California energy markets can be achieved through a collaborative process among market participants, an independent CAISO, and interested parties. This should yield a more attractive investment climate. Finally, we note that the Commission is still in the process of investigating market power and market manipulation in Western energy markets.[31] Until this investigation is complete, the Commission chooses to be cautious in directing changes to these markets, rather than instituting drastic changes that may create additional unforeseen gaming opportunities.

2. Bid Cap

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[29]See e.g., December 15 order at 61,997, wherein the Commission noted, "Every time we intervene in one market, we affect other markets and prevent, rather than support, the development of efficient, competitive bulk power markets."

[30]On May 15, 2002, the CAISO made a compliance filing in Docket No. EL00-95-58, to implement the Commission's approval of waiver procedures under the must-offer requirement. Therefore, the waiver process to be applied as part of the revised mitigation plan beginning on October 1, 2002 is subject to the outcome of that docket.

[31]See Fact-Finding Investigation of Potential Manipulation of Electric and Natural Gas Prices, 98 FERC ¶ 61,165 (2002).

37. To mitigate against market power abuse, the CAISO proposes a bid cap that will limit the maximum bid allowed in the CAISO's energy and ancillary service capacity markets. Because certain of its market design elements will not be in place on October 1, 2002, the CAISO believes that the level of the bid cap should initially be set lower than similar caps in effect in eastern ISOs. Consequently, the CAISO proposes to set the level of the bid cap at $108/MWh, and to raise the cap as appropriate when the price of natural gas increases. The CAISO also proposes to raise the level of the bid cap over the long term as structural elements necessary to support a competitive market improve (for example when its full ACAP obligation is implemented).

a. Comments

38. Many intervenors oppose aspects of the bid cap, especially the proposed initial level of $108/MWh.[32] Other intervenors, although not objecting to a bid cap in concept, argue that $108/MWh is too low.[33] The Market Surveillance Committee strongly disagrees with the CAISO's Board's decision to request a "hard" bid cap of $108/MWh.[34] While this proposal would at first glance appear to be an aggressive cap that would lower average purchase costs for end-use customers, the Market Surveillance Committee believes that average costs would actually be higher under this proposal than under a $250 bid cap. The Market Surveillance Committee further asserts that there is a strong likelihood that system conditions will arise when the CAISO will be forced to perform out of market (OOM) purchases above the $108/MWh bid cap in order to procure adequate supplies for reliable operation of the grid. While this risk would be present with a $250/MWh cap, or any other bid cap, in the opinion of the Market Surveillance Committee, the likelihood of the CAISO making significant OOM purchases with a $108/MWh cap is so great that it creates a substantial risk that the market will in effect have no bid cap at all.

39. EPSA states that the CAISO's proposal should not include the $108/MWh price cap noting that the Commission should avoid taking steps to extend the existing price controls in order to address problems that no longer exist. Williams states that a bid cap is entirely unnecessary, but that if the Commission finds that one is necessary, a cap of $108/MWh is insufficient to clear a constrained market. IEP states that the CAISO has not justified the concept of the bid cap in conjunction with the must-offer requirement,

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[32]See e.g., Market Surveillance Committee, EPSA, Williams, IEP.

[33]See e.g., Reliant, SoCal Edison, Dynegy.

[34]See note 16 supra.

local market power mitigation, and the AMP. Even if the concept is sound, IEP states that it is not appropriate to set the cap at $108/MWh.

40. If the Commission believes that a PJM-level cap is not appropriate in California at this time, Reliant argues that the bid cap start at $500/MWh and increase every six months by $250/MWh if prices do not rise to the cap during that period, until the cap reaches $1,000/MWh. Mirant and Duke state that if a bid cap is approved, the Commission should set the cap at a level comparable to the $1000/MWh bid caps currently in effect in the eastern ISOs. Sempra supports a high-level bid cap, but one that is lower than $1000/MWh used in the East.

41. Dynegy states that there is no justification for a $108/MWh cap and proposes that any cap should be set at the higher of $250/MWh or cost plus 10 percent and must allow for the recovery of fixed costs. Dynegy argues that a capacity market, like the Unforced Capacity market in PJM, should be implemented immediately in conjunction with the $250/MWh cap.

42. San Francisco, on the other hand, maintains that a bid cap of $108/MWh is too high. San Francisco further claims that the bid cap should be applied to all markets, (i.e., ancillary services, adjustment bids, and energy markets).

43. California Inter-Agency Group disagrees with the Market Surveillance Committee's arguments against a $108/MWh bid cap. California Inter-Agency Group asserts that the cap will be a target for supplier bidding and will ultimately determine the market clearing price. In addition, California Inter-Agency Group contends that once a high bid cap raises spot prices, suppliers will withhold power from the forward markets to allow them to participate in more lucrative spot markets; thus, frustrating the State's attempt to create a vibrant bilateral market. California Inter-Agency Group also argues that a high bid cap will not encourage new supplies and instead only increases existing firms' profits because developers of new resources understand that new generation will reduce spot prices and that financing for new generating resources relies on the stability and duration of an anticipated revenue stream, not short-lived high prices. California Inter-Agency Group also strongly opposes the CAISO's stated intention to eventually raise the bid cap to $1,000/MWh.

b. Commission Ruling

44. Market power mitigation should address market power concerns without undermining incentives for new entry and long-term resource adequacy. To support efficient supply and demand response, mitigation should occur only when market power

is exercised, not when resources are scarce. Market power derives from the ability to withhold energy. Therefore, market power mitigation needs to prevent withholding. Market power mitigation should be flexible enough to constrain market power in the times when it exists, but allow the market to function in the times and locations when market power is not present. Market power mitigation measures should rely principally on mitigating market power in the spot market, and rely on a separate resource requirement to provide revenues to support long-term resource adequacy.

45. As we noted earlier, the West-wide mitigation was intended to be a short-term measure to be replaced by a comprehensive forward looking market design. The CAISO states that its ACAP market proposal is designed to encourage proper long-term pricing signals to complement the accompanying market power mitigation measures. The purpose of ACAP is to provide incentives for long-term resource adequacy. If the spot market is the sole backstop for resource adequacy then market power mitigation rules must be relaxed to allow for prices that properly signal scarcity and allow greater opportunity for generators to recover their total costs.

46. Despite the absence of a long-term adequacy requirement, we will establish an initial bid cap beginning on October 1, 2002 of $250/MWh on bids into the California real-time energy and ancillary services markets, as recommended by the Market Surveillance Committee. Such a bid cap will also apply to day-ahead markets once implemented by the CAISO. Furthermore, as discussed above, the Commission has concluded that it is necessary to apply certain mitigation measures West-wide. As we noted in our June 19 Order, "[b]ecause there is no centralized clearinghouse for spot market sales in the [WECC] other than in the ISO, and therefore no ability to develop a separate market clearing price for sales outside the ISO, we will apply the ISO market clearing price as the maximum price to all sales in the [WECC] spot markets."[35] Therefore, we also will impose a maximum price for all sales in WECC spot markets of $250/MWh beginning October 1, 2002.

47. The Commission finds that a $250/MWh bid cap is needed at this time to mitigate the potential for market power abuse. In doing so, we note that in the absence of a long-term adequacy resource requirement in California markets, this mitigation program will not encourage sufficient long-term investment.

48. We reject the CAISO's proposal for a bid cap of $108/MWh on bids into its real-time markets. We agree with the concerns of the Market Surveillance Committee that a

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[35] June 19 Order at 62,546.

$108/MWh bid cap will likely be more detrimental than helpful to California energy and ancillary service markets.[36] As correctly noted by the Market Surveillance Committee, a market with a relatively low bid cap provides incentives for significant amounts of OOM purchases that will take the form of a non-transparent, pay-as-bid market, thus negating the effectiveness of market forces to limit prices.[37] We also agree with the Market Surveillance Committee's conclusion that the CAISO's proposed bid cap "is a high-risk strategy."[38] The Commission further believes that a low bid cap would create a disincentive for out-of-state suppliers to bid into the California market. Furthermore, as the Commission continues its monitoring and evaluation of the health of the Western energy markets and additional elements of the California market redesign proposal are implemented, we will consider increasing the bid cap to reflect market conditions.

49. A $250/MWh bid cap in October 2002 should have a very different impact on the California and Western market and customers than it did in 2000. In the summer of 2000, all of California's energy was traded in the volatile spot market, so the market clearing price affected millions of MWh. In contrast, today almost 70 percent on average of California's energy needs during peak periods is obtained under long-term contracts.[39] In addition, although the bid cap will affect a significantly smaller spot market in California today, the bid cap will still be applicable West-wide because, as noted in our prior

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[36]We find the comments of the Market Surveillance Committee on this and other elements of the MD02 comprehensive market redesign proposal particularly helpful. Its comments provide valuable insights regarding the market efficiency (or inefficiency) that will result from adopting a proposed market design element.

[37]Under current CAISO rules, if the amount of energy bid into the market is insufficient to meet demand, the CAISO must negotiate an out of market (OOM) purchase and pays the supplier its as-bid price. As such, OOM transactions do not provide price transparency to the market. (If such purchases are spot market transactions from resources subject to our market power mitigation measures, however, OOM transactions are subject to the West-wide price mitigation cap.)

[38]The Market Surveillance Committee also states that "[e]ven if FERC continues the must-offer requirement with a low damage control bid cap, generation unit owners have an incentive to leave units without forward energy schedules and declare forced outages in order to increase the likelihood that the ISO makes OOM calls."

[39]Answer at 32; May 1 Filing, Exhibit R at 11.

orders,[40] California is part of a regional market in the West. In addition, application of the bid cap West-wide should eliminate incentives for "megawatt laundering."[41]

50. Furthermore, we find no basis for the California Inter-Agency Group's arguments that the bid cap will be a target for supplier bidding or that the bid cap will encourage suppliers to refrain from negotiating bilateral contracts in favor of participating in the spot markets. The California Inter-Agency Group has not presented any convincing evidence that suppliers have acted as it alleges under the current mitigation plan, and we have no reason to believe that the implementation of a bid cap will change suppliers' bidding behavior in the manner it suggests. In fact, the CAISO submitted information in its Answer indicating that very few, if any, bids have been at or near the bid cap in 2002.[42]

51. Moreover, California Inter-Agency Group's assumption that the Commission will rely solely on high spot market prices as an incentive for new generation is incorrect. Our decision to establish a $250/MWh bid cap together with the other mitigation measures is a careful balance of the need to provide incentive for market entry by new generation investment with the need to protect markets from the potential of market power abuse. Without additional infrastructure and other necessary market design improvements in California and throughout the West, continuing market intervention and restrictions on market operations will thwart the evolution of robust, competitive markets.

B. California Mitigation

1. Automatic Mitigation Procedures

52. The CAISO proposes to apply automatic mitigation procedures (AMP) in both day-ahead and real-time energy markets. However, because it does not currently operate day-ahead energy markets (AMP will apply to the CAISO's Day-Ahead and Hour-Ahead markets once they are developed), the CAISO is proposing to apply AMP starting October 1, 2002, only to its real-time market. The CAISO currently operates its energy market on a 10-minute basis. According to the CAISO, because it is simply not feasible

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[40] See e.g., April 26 order (the California market is integrated with those in other states in the WECC); June 19 order at 62,567.

[41] The term "megawatt laundering" describes behavior where a supplier schedules supply out of state and then re-imports that power to avoid a mitigated price.

[42] Answer at Attachment A, page 1.

to conduct AMP prior to each 10-minute interval, the CAISO proposes to run AMP as part of its forward (ahead of real-time) scheduling process.

53. Thus, beginning in October 2002, the CAISO proposes to run its AMP process in two stages. The first run of AMP would occur during the CAISO's proposed residual unit commitment process, which it claims is the equivalent of a day-ahead procurement by the CAISO of resources needed to provide real-time imbalance energy. The CAISO proposes to run a second stage of AMP 45 minutes prior to the start of the operating hour, which will occur after all supplemental energy bids are received for that hour.

54. The CAISO claims that its AMP proposal is modeled after one used by the New York Independent System Operator, Inc. (NYISO), but with lower thresholds to reflect the CAISO's claim that the California electricity market is not as workably competitive as NYISO markets. Similar to NYISO, the CAISO's AMP proposal uses two screens to determine whether to apply AMP: one for conduct and one for market impact.[43] The first screen (conduct screen) evaluates a bid for market conduct that is inconsistent with workable competition. The second screen (impact screen) evaluates bids to determine whether they have a substantial impact on market prices. If both of these conditions are met, prospective mitigation to a unit specific reference price is imposed automatically. Specifically, when a bid exceeds the reference price by the lesser of 100 percent or $50/MWh and acceptance of the bid would raise the market price by the lesser of 100 percent or $50/MWh, AMP is triggered. The CAISO further proposes to apply AMP to both in-state resources and imports, including hydro.[44] In addition, according to the CAISO proposal, AMP would not be used in periods when the CAISO day-ahead forecast load is over 40,000 MW.

55. In addition to checking individual bids for an increase above their respective reference prices, the CAISO proposes to aggregate those bids that violate the conduct screen to test for an impact on the market clearing price. If the market clearing price would be changed (increased) by these bids, AMP is triggered. Once AMP is triggered,

[43]The NYISO employs an additional price screen to determine whether to apply AMP to bids. Under that screen, AMP does not apply when unmitigated energy prices are less than $150/MWh throughout NYISO. NYISO implemented this screen after it determined that it was unlikely that the thresholds for mitigation would be exceeded if prices were below $150. The CAISO does not propose to use a similar price screen.

[44]The CAISO, however, also proposes that import bids subject to mitigation under AMP cannot set the market clearing price.

the affected bids (i.e., those exceeding both the conduct and impact screens) are assigned their respective reference price as a default bid for purposes of determining the market clearing price for the market interval. Those bids are then paid the market clearing price for the market interval, with the exception of imports into the CAISO control area. For imports that are mitigated under AMP, the CAISO proposes to pay those bids the higher of their default bid or relevant market clearing price (because imports are proposed to be ineligible to set the market clearing price).

56. Unlike the NYISO, however, the CAISO does not propose any exemptions from applicability of AMP for: (1) small portfolios (NYISO exempts units with capacity ratings of 50 MW and below); (2) minimum price bids (NYISO exempts bids below $25/MWh); new generation (NYISO uses more liberal reference prices for three years for new resources); and hydroelectric resources and imports (NYISO exempts bids from these resource types).

57. The CAISO proposes to establish the reference price for each in-state generating resource based on its historical bids, or an estimate of its costs. The CAISO has proposed a set of methods with which to calculate reference prices. According to the MD02 proposal, the reference price for each resource will be set using data, subject to availability, in the following specified order:

(A) the lower of mean or median of a resource's accepted bids in similar periods during previous 90 days, adjusted for changes in fuel prices (90-day bid prices);
(B) for gas-fired units with no significant energy limitations, a default energy bid based on its incremental heat rate, adjusted for gas prices and an O&M adder (default energy bid for gas-fired unit);
(C) for non gas-fired units (which would include hydroelectric resources) and gas-fired units with significant energy limitations, a negotiated rate using opportunity cost data supplied by the market participant (opportunity cost negotiated rate for energy limited resources);
(D) the mean of the market clearing prices for the unit's relevant location during the lowest-priced 25 percent of the hours the unit was dispatched or scheduled during the previous 90 days for peak and off-peak periods, adjusted for changes in fuel prices (mean of lowest 25 percent hours' clearing prices);
(E) the CAISO's estimated cost of a facility based on best available information (CAISO estimate of cost); and
(F) the average of competitive bids from similar units (similar competitive bids).

These methods generally reflect those used by the NYISO, but in a slightly different order.

58. A tabular comparison of NYISO AMP and the CAISO AMP proposal is shown below.

Design Element	NYISO AMP	CAISO proposed AMP
Conduct threshold	300% or $100 increase over reference price	100% or $50 increase over reference price
Impact threshold	200% or $100 increase in MCP	100% or $50 increase in MCP
Minimum Price Screen	$150	none
Applicability	- hydro and imports excluded - regulation and operating reserves are excluded - less than 50 MW excluded - more liberal reference price for first three years of a unit's operation - bids below $25 are not mitigated	- hydro and imports included - no provision - no exclusion for small portfolios - no exemption for new generation - no minimum price offer exemption - not applicable when load forecast exceeds 40,000 MW

a. Comments

59. Some intervenors argue that a workable AMP must have a properly designed bid screen that should be more market-oriented than the CAISO proposal, using bid histories or market clearing prices, with marginal cost proxies as a last resort.[45] If a cost-based bid screen is used, Reliant argues that the cost factors must be based on a more complete and realistic representation of costs so that disincentives for construction of new generation are removed. Dynegy and IEP claim that the CAISO AMP is applied too broadly, without a prerequisite that significant congestion exists.

60. Mirant contends that the Commission should require the CAISO to implement the same standards and thresholds used by the NYISO. Dynegy maintains that the CAISO's methodology for setting a unit's reference price should follow the same order of preference used by the NYISO. California Inter-Agency Group and San Francisco protest the CAISO's use of a supplier's historical bids to establish the reference price, arguing that such an approach can be gamed if suppliers act to artificially inflate the reference price. California State Water Project argues that the CAISO provides only a fleeting description

[45]<u>See</u> <u>e.g.</u>, Reliant, Dynegy.

of how threshold price levels would be developed for hydroelectric generation and no discussion of how AMP would apply to loads.

61. California Inter-Agency Group protests the CAISO's proposal to suspend the AMP at high load levels, contending that the exercise of market power is the greatest when load is high.

62. San Francisco maintains that, if AMP is adopted as proposed, its effectiveness should be reexamined as experience reveals whether the reference levels and bid thresholds that trigger mitigation are effective and appropriate. Williams maintains that the AMP must be designed on a regional basis, recognizing values and opportunity costs across the entire WECC region, especially during shortage conditions.

63. The Market Surveillance Committee believes that the local market power of some suppliers was among the greatest structural problems in the California market.[46] The existence of transmission constraints within the CAISO system remains a structural problem that continues to give suppliers local market power. The Commission has adopted and approved measures to mitigate this problem for all East Coast ISOs. The Market Surveillance Committee believes it is important for California to have comparable measures. The Market Surveillance Committee strongly agrees with the CAISO that an ACAP market is not practical to implement over the short-term. Though the Committee believes that ACAP may best address market power, they note that in the short run, AMP is the best solution. According to the Market Surveillance Committee, even though the CAISO has a number of generating units under Reliability-Must-Run (RMR) contracts that it can call to mitigate local market power, system conditions often occur when generating units other than RMR units are able to exercise local market power. Consequently, the Market Surveillance Committee strongly supports the implementation of an automatic mitigation procedure on all generating units that possess local market power according to a clearly articulated criterion.

b. Commission Ruling

64. We note that a fundamental purpose of AMP is to limit the exercise of market power, not to suppress prices during scarcity conditions. AMP should not limit prices

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[46]The Market Surveillance Committee includes asymmetric treatment of final consumers and producers of electricity, and the lack of sufficient forward contracting by load-serving entities in its list of the three main structural problems in the California markets (Market Surveillance Committee at 2).

from rising to the level needed to clear the market, instead it should simply limit the ability of suppliers to artificially raise prices when market conditions may create a temporary ability to do so. We have previously found that AMP can be effectively implemented as a market power mitigation tool without interfering with the efficient and reliable operation of the grid.[47]

65. The CAISO proposal to run AMP in two stages beginning October 1, 2002 is acceptable, with certain modifications. As discussed later in this order, we reject the CAISO's proposal to implement an interim residual unit commitment process as unnecessary due to the extension of the existing must-offer obligation and the fact that it will be developing a resource adequacy condition, whether it is ACAP or some other method. Rejection of the interim residual unit commitment proposal, however, should not affect the CAISO's ability to run the first stage of AMP because the CAISO indicates that it has already developed software to support the waiver process approved by the Commission to complement the must-offer obligation. In fact, the CAISO admits that the process of granting or denying waivers and for recalling units that were previously granted a waiver is basically a residual commitment process.[48] The CAISO further indicates that software being used to do this makes use of Transmission Constrained Unit Commitment (TCUC) software. In addition, to implement its residual unit commitment, the CAISO was proposing to extend and modify the use of the TCUC software. Consequently, we direct the CAISO to apply the AMP procedures at the time it runs the TCUC for granting waivers of the must-offer obligation.

66. The combination of the AMP with a $250/MWh bid cap gives the CAISO a comprehensive mitigation plan to guard against economic withholding. However, we agree with certain intervenors that applying the screens, at the levels proposed by the CAISO, may result in mitigating bids unnecessarily. Thus, we will require certain modifications to the CAISO's proposed AMP process.

67. We approve the use of conduct and market impact screens to assess whether bids will be subject to AMP. In addition, as discussed below, we will require the CAISO to use a third test, a price screen, to determine whether a bid will be mitigated under AMP. We require the CAISO to apply such screens using the following thresholds:

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[47]<u>See</u> <u>e.g.</u>, New York Independent System Operator, Inc., <u>et</u> <u>al</u>., 99 FERC ¶ 61,246 (2002), New York Independent System Operator, Inc., 95 FERC ¶ 61,471 (2001).

[48]<u>See</u> May 1 Filing, Attachment A at 109.

A. For the conduct screen, the threshold will be whether the individual bid would result in a 200 percent or a $100/MWh increase, whichever is less, above the reference price established for the unit;

B. For the impact screen, the threshold will be whether the aggregated bids that fail the price screen would result in a 200 percent or a $50/MWh increase, whichever is less, in the market clearing price;

C. For the price screen, if the market clearing price for all zones is $91.87/MWh or below, AMP will not be applied.

68. According to its May 1 Filing, the CAISO considered thresholds ranging from 100 percent/$50 to NYISO's 300 percent/$100 for conduct and 100 percent/$50 and 200 percent/$100 for impact. We agree with the CAISO that thresholds must strike a balance between being overly restrictive and overly generous. As the CAISO correctly states, "setting the threshold too low will make it difficult to apply AMP to resources that may justifiably have more volatile bidding patterns (e.g., hydroelectric resources whose bid patterns may vary significantly depending on water conditions) . . .[and] if the AMP thresholds are too restrictive, new generation may choose to locate outside of California."[49] Accordingly, the Commission finds it appropriate to adjust the levels of the thresholds as described above.

69. We agree with San Francisco, "AMP's effectiveness should be re-examined as experience reveals whether the reference levels and bid thresholds that trigger mitigation are effective and appropriate." The Commission agrees and will review the levels of these thresholds as appropriate. We direct the CAISO to file quarterly reports detailing the impacts of its AMP measures.

70. We also believe the calculation process for determining a reference price (the price at which a bid will be mitigated if AMP is applied) affords too much discretion to the CAISO.[50] We share intervenors' concerns regarding the calculation of reference prices, and believe that those concerns are best addressed by requiring an independent entity to

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[49]See May 1 Filing at 138.

[50]See the concurrently issued Order Concerning Governance of the California Independent System Operator Corporation, Mirant Delta, LLC, and Mirant Potrero, LLC, et al., Docket No. EL01-35-000 et al.

calculate reference prices. Accordingly, we will require the CAISO to issue an RFP within 30 days (using the MISO RFP for hiring its independent market monitor) to retain the services of a qualified independent organization to perform the task of determining reference prices for each generator in California and each Scheduling Coordinator providing energy at each scheduling point across an inter-tie.[51] Selection of the entity must be completed and its identity submitted to the Commission by September 15, 2002. Application of AMP by the CAISO will not be permitted until such entity is in place.

71. The Commission agrees with the CAISO's proposal to include hydroelectric resources and imports as bidders subject to AMP. Unlike NYISO, hydroelectric resources and imports constitute a significant portion of California energy supply. Without AMP applied to imports, for example, concerns with megawatt laundering arise.

72. As noted above, we direct the CAISO to adopt a price screen as an element of AMP. We will direct the CAISO to establish the initial level of the price screen at \$91.87/MWh. Under the price screen, if the markets clear below this level in all three zones in California, no AMP will be applied. The establishment of a bid screen also should provide certainty to potential suppliers.

73. The Commission believes it appropriate to exempt small portfolios from AMP once the full network model is in effect in late 2003. Additionally, bids below \$25/MWh should be exempt from AMP because small dollar increases at this level translate into large percentages, but the impact on the market is generally insignificant.

74. As a final matter, the CAISO proposes that AMP would not be applied when its day-ahead forecasted load exceeds 40,000 MW. In opposition, the California Inter-Agency Group argues that the CAISO has failed to provide any explanation why it believes mitigation is not needed when load is high and the potential for exercise of market power is the greatest. We agree with the California Inter-Agency Group that protection from market power should apply during times of high demand, and note that any potential for market power that exists when demand is below 40,000 MW could well exist at levels above 40,000 MW. While it is important to allow the price signals scarcity creates, we also believe it is important to protect customers from market power. The AMP adopted here accomplishes this.

75. An AMP with appropriate thresholds is designed to allow prices to rise during times of scarcity, thereby allowing for appropriate price signals and incentives for supply

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[51]We direct the CAISO to use the MISO RFP as a template for this task.

to enter the market. We believe that the AMP mechanism we approve in this order provides important protection against the exercise of market power and can properly differentiate between the exercise of such market power and true scarcity prices when demand is high. As such, the CAISO's concerns that resources will not be made available to meet high levels of demand will be alleviated by allowing the market to accurately reflect scarcity without triggering mitigation. We will therefore reject CAISO's proposal not to apply AMP when load forecasts exceed 40,000 MW. We also will direct that prices at all load levels shall be included in the reference level calculation, since excluding such prices would extinguish the signal that additional supply is needed.

76. We direct the CAISO to file, within 30 days of the date of this order, tariff language implementing the AMP as discussed above.

2. Local Market Power Mitigation[52]

77. In light of the increasing amounts of intra-zonal congestion, the CAISO proposes to implement, immediately upon Commission approval, a local market power mitigation measure.[53] Under the local market power mitigation proposal, when the CAISO must dispatch a unit out of merit order to alleviate intra-zonal congestion, it would mitigate those bids by capping the bid of a generating unit at its short-run variable cost. The CAISO cites the example of PJM's authority to cap the cost of must-run units in the real-time market and also notes that other Eastern ISOs, such as NYISO and ISO New England, have Commission-approved locational market power mitigation programs in place.[54]

78. According to the MD02 proposal, if intra-zonal congestion cannot be alleviated by "reliability must-run" procedures and the CAISO must dispatch a unit out of merit order, that unit's bid will be mitigated to a proxy price as an estimate of its short-run variable costs. The unit will be dispatched pursuant to the adjusted bid in order to alleviate the intra-zonal congestion. The Scheduling Coordinator for that generating unit will then be

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[52]In this order, we use the term, "local market power mitigation," instead of the CAISO's term, "locational market power mitigation," because the former term more accurately describes the proposal.

[53]This measure would supplement the CAISO's existing reliability must-run (RMR) procedures under which it pays certain designated units needed to run in local areas a negotiated cost-based price for their output.

[54]See May 1 Filing at 26-27.

paid the higher of its proxy price or the applicable market clearing price for incremental dispatch, or charged the lower of its proxy price or the applicable market clearing price for decremental dispatch. The CAISO will calculate the proxy price daily for each gas-fired generating unit a generator subject to the must-offer requirement owns or controls by applying the filed heat rates for those generating units to a daily proxy figure for natural gas costs with an additional $6/MWh allowed for operations and maintenance expenses.

79. The CAISO also proposes to modify the local market power mitigation mechanism effective October 1, 2002 by replacing the proxy price with a default energy bid price. The CAISO will determine default energy bids using cost data that a generating unit's Scheduling Coordinator submits. From that data, the CAISO will construct a bid curve for the unit representing its incremental variable cost over the range of its sustainable output.

a. <u>Comments</u>

80. TANC supports the CAISO's proposed intra-zonal congestion management plan as an interim measure. California State Water Project also supports the local market power mitigation plan, but suggests using the NYISO "in-city" AMP procedures. The Market Surveillance Committee proposes that the CAISO use its AMP for local market power mitigation. California Inter-Agency Group supports the CAISO's proposal that when intra-zonal congestion occurs, the CAISO will limit schedules in the day-ahead market and cap bids at marginal costs, but it disagrees with the CAISO's proposed method of determining whether a unit has local market power.

81. San Francisco supports the CAISO proposal, although it believes that the proxy price is overly-generous. It also maintain that generators' cost data should be submitted publicly, so that all interested parties may determine whether the mitigated price paid to generators is just and reasonable.

82. Metropolitan states that, even though it recognizes the need to prevent the exercise of market power, the CAISO's proposal appears to have several significant errors or ambiguities. Metropolitan also contends that congestion management should be accomplished using thermal generating, and not hydroelectric units.

83. Reliant states that the price mitigation proposals artificially limit prices in so many ways that they create a de facto cost-based regime (effectively perpetuating the current mitigation measures). Dynegy states that the CAISO is apparently trying to create an

incremental cost-based market outcome without guaranteeing the opportunity for fixed cost recovery and extremely limited potential for return on investment.

84. Duke supports the principle of limiting prices for generators dispatched to relieve intra-zonal congestion in circumstances where localized market power has been demonstrated, but it states that those caps should reflect market-based, not cost-based, proxy prices.

85. Mirant asks the Commission to reject the CAISO's duplicative local reliability mitigation measures or, in the alternative, modify the proposal to the following: (a) limit mitigation to instances where competition may be ineffective; (b) provide appropriate price signals; and (c) reflect the value of reliability services.

86. Calpine states that the CAISO proposal has three fundamental flaws: (1) it penalizes new generation owners that have paid the full costs of system upgrades that had been identified by the transmission owners, in coordination with the CAISO, as being needed to accept power from the new facility on the grid; (2) it uses a "cost-based" proxy bid to mitigate the potential for the exercise of market power in situations where such a potential may not exist at all because of the existence of multiple competitors to provide the service; and (3) the "cost-based" proxy bid the CAISO proposes does not compensate generators for actual costs they may incur when they decrease generation and, therefore, must be modified.

87. Redding states that the CAISO's market power mitigation proposals inappropriately treat constrained and unconstrained markets with a single approach. Redding maintains that market power mitigation measures are not necessary in markets where there are multiple buyers and sellers.

b. Commission Ruling

88. The Commission recognizes that transmission constraints or concentration of generation ownership may cause situations to arise in which the number of bids in certain areas of the grid or across transmission pathways is not sufficient to consider them competitive. Load pockets, generation pockets or local reliability problems resulting from such a situation may place a generating unit in a position to exercise market power.

89. The CAISO's current market rules rely on RMR units to relieve transmission congestion.[55] The CAISO states that although it recognizes the value of RMR as a tool to address local reliability needs and to resolve intra-zonal congestion, it has been reducing the number of RMR units, and is proposing to phase out existing RMR generation requirements by 2006 as its ACAP is implemented.[56] The CAISO believes that this timetable will provide sufficient time for the development of appropriate local market power mitigation instruments, including new and/or modified RMR contracts.[57]

90. The ultimate solution to this problem in California is the use of AMP in concert with a day-ahead market and the nodal pricing of the CAISO's full network model.[58] However, neither of these elements will be in place on October 1, 2002. It is evident to the Commission that the CAISO's local market power mitigation measure, as proposed, is inappropriate in light of the existence of a three-zone congestion management model. We find that there is a need for an appropriate interim measure in order to provide protection from the possible exercise of local market power during the transition to the full network model.

91. Though RMR resources are inadequate to address all instances where market power could be exercised, we will direct the CAISO to use its existing RMR generation to its full extent for reliability purposes and to alleviate intra-zonal congestion. We note that RMR resources are not subject to AMP and do not set the market clearing price.

92. In situations where RMR resources are not available, and bids must be taken out of merit order for the specific purpose of alleviating intra-zonal congestion, we direct the

[55]RMR contracts are negotiated agreements between the CAISO and a generator that provide for the recovery of a portion of the generator's fixed costs as well as its variable costs.

[56]See May 1 Filing, Appendix A, at 69-70.

[57] Answer at 124.

[58]For this reason and others, we are directing the CAISO to expedite the implementation of its day-ahead market and, moreover, urge the CAISO to use all deliberate speed to implement its full network model.

CAISO to apply its AMP procedures, as modified below, to test for the possible exercise of local market power.[59]

93. A bid less than $91.87/MWh that is taken out of merit order will not be subject to any mitigation. If a bid taken out of merit order is greater than $91.87/MWh, it is assumed to have failed the conduct test (the first AMP screen). To test for market impact (the second AMP screen), if an out of merit order bid is $50/MWh greater than the market clearing price or over 200 percent greater than the market clearing price, that bid will be mitigated and the generator will be paid the higher of its reference price or the market clearing price. An out-of-merit bid (whether mitigated or not) is ineligible to set the market clearing price.

94. We direct the CAISO to file revisions to its AMP proposal to include these provisions to address local market power.

3. 12-Month Market Competitiveness Index

95. As an additional market power mitigation tool, the CAISO proposes to compute a 12-month rolling average price-cost markup index that measures the difference between actual average market prices and a competitive baseline average cost. Under the CAISO proposal, an average market price change in excess of $5 over the 12-month market competitive index would automatically trigger mitigation measures in California and an appeal to the Commission to immediately reinstate the June 19, 2001 West-wide mitigation measures. Specifically, the CAISO proposal computes the average market price as the weighted average of day-ahead and real-time energy prices. The CAISO bases its competitive baseline average prices on the estimated variable operating cost of the highest cost thermal generation unit within the ISO system needed to meet system demand each hour.

a. Comments

96. Many intervenors do not support the CAISO's 12-month market competitive index as a market power mitigation measure because the proposal is flawed and fraught with

[59]We view local market power mitigation and AMP as companion, if not interchangeable, mitigation measures.

potential abuse.[60] IEP states that it cannot support the 12-month market competitive index because it is wholly untested and is not used in other markets. Sempra also is unsupportive of the 12-month market competitive index because it believes that the mechanism would falsely signal "uncompetitive" conditions. Dynegy claims that the index prices are inappropriately determined from sales data of CERS, which do not represent the outcome of a competitive market.

97. While SMUD favors quantifying what constitutes a "competitive market," it is concerned that by enforcing the 12-month market competitive index together with AMP, the CAISO may achieve modest price mitigation, but at the expense of ensuring adequate generation. Instead, SMUD supports a strong market monitoring unit that is independent from the CAISO and the imposition of sanctions and penalties where the market monitoring unit has determined tariff rules have been violated.

98. Mirant states that the Commission should reject the 12-month market competitive index because it would permit the CAISO to impose mitigation measures that are more severe than the current West-wide mitigation measures, while Reliant states that the CAISO's proposed 12-month market competitive index is nothing more than repackaged cost-based pricing that merely perpetuates the current price mitigation measures and prohibits full recovery of costs.

99. Williams objects to granting pre-approval authority for the CAISO to mitigate prices based on the 12-month market competitive index because such authority belongs to the Commission under the Federal Power Act, and delegation of such authority is unwarranted in light of the CAISO's past and present behavior and the CAISO's pervasive lack of independence.

100. BPA and Dynegy point out that the proposal ignores the effect of yearly variations in hydro conditions. In addition, BPA maintains that if an increase in average price automatically triggers mitigation, year-to-year hydro generation fluctuations may inappropriately trigger mitigation.

101. California Inter-Agency Group supports the design of the index, but opposes the inclusion of opportunity costs for thermal energy-limited resources or scarcity rents. California Inter-Agency Group also supports the trigger for mitigation. San Francisco states that setting a standard for just and reasonable rates over a past 12-month period and

[60] See e.g., Duke, Reliant, Williams, Dynegy.

adjusting market conditions going forward could provide a useful "backstop" for the California market.

102. Metropolitan supports the CAISO's proposal to initiate a 12-month market competitive index on an advisory basis only. Metropolitan does not support the CAISO's request for pre-authorized mitigation measures, arguing that these measures are not necessary as long as price mitigation remains in effect. Moreover, Metropolitan believes that it is imprudent to pre-authorize mitigation measures arising from a very narrow $5/MWh trigger based on an untested competitive index. If the CAISO perceives continued market manipulation, Metropolitan states that it can then recommends that the CAISO develop more focused measures designed to specifically remedy an identified problem.

b. Commission Ruling

103. We find that the CAISO's proposed 12-month market competitive index raises potential problems and could inappropriately lead to automatic mitigation measures that might adversely affect the market. As stated above, the CAISO's 12-month market competitive index would measure the competitiveness of its markets over time against an administratively-determined benchmark that purportedly models what market prices would be under perfect competition. While we applaud the CAISO's intent to quantify just and reasonable rates, we find that in a dynamic market it is impossible to pre-determine just and reasonable rates simply by using historical prices. There are a multitude of factors other than historical reference prices that must be considered in determining that prices are just and reasonable in any market subject to competitive pressures, including the California market. Consequently, it would be inappropriately rigid to allow automatic mitigation measures to be triggered using this index. Accordingly, we will reject the CAISO's 12-month market competitive index proposal as a mitigation measure. However, despite the alleged shortcomings of the index noted above, it nevertheless provides additional data with which to analyze California market prices. Consequently, we will direct the CAISO to file the information produced by this index weekly with the Commission's Office of Market Oversight and Investigation.

4. Interim Forward Intra-zonal Congestion Management

104. The CAISO claims that the addition of new generating units in California, whose output is badly needed during system peak conditions, often contributes to intra-zonal congestion and increases the opportunities for generators to manipulate market clearing prices through decremental energy price bids (DEC bids). As a means to address these concerns, the CAISO proposes to employ a forward intra-zonal congestion management

mitigation measure. In doing so, the CAISO proposes to adjust a generator's schedule in the day-ahead market if it determines that intra-zonal congestion will occur. However, the CAISO has not yet filed a proposal or tariff language that explains how it would accomplish such intra-zonal congestion management mitigation.[61] Furthermore, the CAISO indicates that it currently is engaged in discussion with its stakeholders to develop an approach to use in day-ahead markets that considers market-based bids in developing this proposal. The CAISO indicates that it intends to file a proposal with the Commission in the near future. In light of the ongoing discussions, the Commission will defer action on this issue until the CAISO files a definitive proposal.

3. MD02 Comprehensive Proposal

105. The CAISO's full network model market design proposal reflects many of the principles set forth in the Commission's working papers on standard market design. The Commission believes that the CAISO's proposed market design, as modified in this order and as further developed in the technical conference established in this order, will establish the necessary foundation for a healthy competitive wholesale electric market. Once implemented, the market redesign will provide significant consumer benefits and mitigate potential abuse of market power. The CAISO's instant filing, as supplemented by the proposed tariff language in its June 17 Filing, is an important initial step to rehabilitate the California market. To facilitate the timely development and implementation of its long-term market design, we will authorize the CAISO to expend funds to begin developing its full network model and locational marginal pricing software.

106. The Commission agrees with the CAISO that the following elements are reasonable to include in its long-term market design: establishment of bid-based security constrained day-ahead and real-time markets; elimination of the requirement to submit balanced schedules; simplification of the settlement process through market improvements; nodal pricing with energy prices that incorporate the total value of

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[61]The CAISO previously filed a similar proposal with the Commission in Docket No. ER02-922-000 as part of Amendment No. 42 to its tariff. By order issued March 27, 2002, the Commission rejected the proposal and directed the CAISO to address the issue as part of the impending May 1, 2002, comprehensive market redesign proposal. See California Independent System Operator Corporation, et al., 98 FERC ¶ 61,327 (2002).

generation, transmission congestion, and losses at each node on the system; congestion management using locational marginal pricing; and accommodation of energy-limited resources, intermittent resources, and demand-side participation in markets.

107. While the Commission is generally supportive of many of the features of the proposed long-term design for the California market, we believe that the time table for development of certain elements should be expedited from the CAISO's proposed implementation schedule. Advancing the implementation schedule for these market design features will benefit customers by providing, among other things, improved market stability and price transparency. Because we are not authorizing the development of certain interim elements proposed by the CAISO, we direct the CAISO to devote the resources that would have been allocated to those interim elements to the development of the expedited items.[62] We will require the CAISO to expedite the following market design elements: creation of an integrated day-ahead market; ancillary services market reforms; and hour-ahead and real-time market reforms.

108. We will require the CAISO to file revised tariff sheets to reflect these changes, as discussed below. We will direct the CAISO to implement these improvements to the markets by January 1, 2003.

A. Expedite Implementation of Integrated Day-Ahead Market

109. The CAISO integrated day-ahead market proposal, though requiring more detail, has many positive features and is an important step towards an efficiently functioning market. The CAISO proposes to (1) create a day-ahead market and (2) replace the separate optimization of congestion management and ancillary services with a simultaneous optimization of energy, congestion management, and ancillary services market. When the integrated day-ahead market is implemented, the CAISO will eliminate its balanced schedule requirement and market separation rule,[63] and Scheduling

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[62]We note that the CAISO anticipates having the necessary software ready to support changes associated with the integrated day-ahead market (simultaneous energy, congestion and ancillary service markets) during the first quarter of 2003. See June 17 Filing at 30.

[63]Scheduling Coordinators are required to submit balanced schedules (supply bids must equal demand bids). Under the market separation rule, the CAISO is limited to making balanced trades within a given Scheduling Coordinator's portfolio, which

(continued...)

Coordinators will have the ability to submit unbalanced supply and demand bids and trade such unbalanced bids with each other. In addition, energy bids associated with day-ahead schedules will be used for both energy trading and congestion adjustments, thereby eliminating the need for separate Adjustment Bids.

B. Expedite Implementation of Ancillary Service Market Reforms

110. The CAISO also proposes reforms to (1) the price determination mechanism for ancillary services and (2) permit multi-part (separate capacity and energy) bids. The CAISO proposes to select ancillary services bids using an opportunity cost approach based on energy bids, where the opportunity cost is determined as the difference between the clearing price for energy and the energy bid of the resource, so long as the energy bid associated with the reserve capacity is less than or equal to the clearing price. The CAISO also proposes to allow suppliers to submit capacity bids for ancillary services in addition to their energy bid curves. The capacity bid would be paid in addition to the energy bid. The market clearing price for each service would then be the highest total price (energy plus capacity) paid for each service in each hour. According to the CAISO, allowing a capacity bid will enable the supplier to incorporate into its bid equipment and other fixed costs associated with providing ancillary services.

C. Expedite Reforms to Hour-Ahead and Real-Time Markets

111. The CAISO proposes to revise the structure and timing of the hour-ahead and real-time markets. The current hour-ahead timeline requires schedules and bids to be submitted two hours prior to the beginning of the operating hours (referred to as T-120 minutes). In response to the preference of market participants, the CAISO is proposing to move the hour-ahead timeline as close to real-time as possible. The CAISO proposes to procure hour-ahead energy and ancillary services simultaneously via a Transmission Constrained Unit Commitment process. This process will eliminate the balanced schedule requirement and reduce the current processing time of the market. According to the CAISO, following these changes, the closing of the hour-ahead market may be moved closer to real-time (T-60 minutes).

112. The proposed simplified hour-ahead markets which will perform congestion management and energy trading, will close as late as 60 minutes before the operating

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[63](...continued)
prevents the CAISO from balancing one Scheduling Coordinator's incremental bids against another Scheduling Coordinator's decremental bids.

hour. The hour-ahead market will enable those parties that desire the equivalent of a 60-minute dispatch market to match energy and load bids for the next hour or have the CAISO pre-dispatch their energy bids for imbalance energy needs. This will facilitate the integration of the CAISO's redesigned energy markets with energy markets that may be established in other portions of the Western Interconnection, which may not clear on the same 10-minute basis as the CAISO's Real-Time Energy Market.

113. In addition, we require the CAISO to change the rules of its spinning reserve market to enable the full participation of demand response as a resource. The CAISO shall work with the demand response community and other stakeholders to determine how demand response programs can participate in other ancillary service markets, and file a compliance report by October 21, 2002 outlining the measures taken to improve demand response participation in all CAISO markets. The CAISO and California transmission owners should work with NERC to change those NERC rules that prevent demand resources from being full and equal participants in the spinning reserve and other ancillary services markets.

D. Commission Ruling

114. Comments on CAISO's day-ahead market, ancillary services reforms, and hour-ahead and real-time reform proposals were overall positive; however, many intervenors requested more detail and a faster implementation schedule. Although it originally scheduled these proposals for implementation as part of phase two (to begin May 1, 2003), the CAISO indicates that the necessary software will be ready during the first quarter of 2003. The Commission believes that expediting the integrated day-ahead market, ancillary services market reforms, and the changes to the hour-ahead and real-time markets will provide important market efficiency improvements, and will help to alleviate some of the inefficiencies in the CAISO's current market design. We will direct the CAISO to file its integrated day-ahead market proposal, ancillary services reforms, and hour-ahead and real-time reforms by October 21, 2002, for implementation by January 1, 2003. Parties will have the opportunity to further comment on these proposals once they are filed.

E. Authorization to Expend Funds for Development of LMP and Full Network Model

115. The CAISO proposes to adopt locational marginal pricing (LMP) as the foundation of its redesign of congestion management. According to the CAISO, however, implementation of LMP and the full network model will require extensive software and

systems development. The CAISO anticipates that it will need twelve months to have the necessary systems in place, plus additional time for testing. The CAISO indicates that it has not begun such development in light of the Commission's directive that it not expend funds until the Commission approves a revised congestion management proposal.[64]

116. Some intervenors[65] protest the adoption of LMP, arguing that it will lead to pricing inequities, needs more study, requires a cost-benefit analysis and a minimum five-year implementation schedule. Turlock, IID, and Burbank oppose any grant of authority to the CAISO for hardware or software design until the full details of the CAISO's market redesign are filed and thoroughly vetted.

F. Commission Ruling

117. LMP has been successfully implemented in other ISOs, and has been proposed in the Staff working papers on standard market design as the preferred system for congestion management. Because the development of LMP represents a critical component of the CAISO's full network model, we believe that initiating its development as soon as possible will accelerate the implementation schedule for the long-term market design changes we believe are necessary to support a well functioning wholesale market. Consequently, we will authorize the CAISO to begin expending funds on the development of software and systems for LMP and the full network model.

118. We will not address specific arguments intervenors raise regarding particular aspects of implementing LMP and the full network model. The Commission believes it will be a more efficient use of all parties' resources to discuss the specifics of implementation as part of the technical conferences that we are establishing in this order.

G. Long-term elements set for technical conference:

1. Available Capacity (ACAP) Requirement

119. As stated above, the CAISO proposes an ACAP requirement to allow it to verify that load-serving entities are making the necessary advance arrangements to ensure that

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[64]Citing San Diego Gas & Electric Co. v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator Corporation and the California Power Exchange, et al., 98 FERC ¶ 61,254 (2002).

[65]See e.g., TANC, San Francisco, Palo Alto, Santa Clara.

adequate generating capacity is available to meet system load and reserve requirements. The Commission believes that a requirement to assure long-term adequate resources is needed because most resources take years to develop and spot market prices alone will not signal the need to begin development of new resources in time to avert a shortage. Moreover, spot market prices that are subject to mitigation measures may not produce an adequate level of infrastructure investment even after a shortage occurs.

120. While the Commission believes that an ACAP-like requirement has potential to address resource adequacy, we note that the CAISO is not prepared to implement an ACAP, or any alternative proposal, until January 2004.[66] Such a delay, in our view, impedes market development and may undermine other attempts to improve market rules. Consequently, the Commission finds that a resource adequacy proposal is a fundamental pillar of any workable market design. Therefore, in light of the CAISO commitment to the development of a long-term permanent solution to resource adequacy and the need for stakeholder involvement in this development process, we will set the proposed ACAP requirement for expedited development at the technical conference we will direct staff to convene. As stated earlier, this issue must be addressed quickly and comprehensively. Swift resolution of this issue will assure resource adequacy, which is critical for market stability.

2. Congestion Revenue Rights (CRRs)

121. The CAISO proposes a modification to its current approach concerning CRRs that will incorporate a point-to-point design to be consistent with its new proposal to congestion management. However, the CAISO has yet to provide sufficient details concerning this proposal that would allow the Commission to make a determination at this time regarding its merit. For this reason, we will defer any decision concerning the merits of this element of the MD02 proposal until the CAISO provides more details. Since the CAISO's proposal to modify its CRR approach would not go into effect until the implementation of the full network model in the fall of 2003, and because we believe that all interested parties will benefit from further discussion concerning this proposal, we will set the CAISO's proposed modification concerning CRRs for a technical conference.

3. Residual Day-Ahead Unit Commitment (RUC) Process Proposal

[66] See June 17 Transmittal Letter at 30.

122. As stated above, the CAISO proposes a residual day-ahead unit commitment mechanism to allow the CAISO to commit additional resources to meet the CAISO's forecast of the next day's demand. Generally, under the MD02 proposal, once the CAISO determines that it does not have sufficient resources committed after the close of the day-ahead market to meet its next day's forecasted load, it will run the residual day-ahead unit commitment process to commit additional capacity and pay those suppliers for certain costs that are incurred to make their uncommitted resources available to the CAISO.

123. The CAISO's residual day-ahead unit commitment proposal generated numerous questions, comments and protests from nearly all of the interested parties. We share many of these same questions and concerns as the parties and believe that the issues these parties raise warrant further discussion. However, we find that the need to develop the CAISO's proposed interim residual unit commitment process is not critical at this time, despite the CAISO's assertions to the contrary. Specifically, since we choose to continue the current must-offer obligation[67] and because we will direct the CAISO to expedite the development of other market design features, we find that there are sufficient assurances that generators will make available their uncommitted supply to the markets. Furthermore, the CAISO has committed to the development of a long-term permanent solution to resource adequacy. Therefore, we will reject the CAISO's proposed interim residual unit commitment process.

124. Resource adequacy is an important issue and will be set for technical conference for market participants and interested parties to discuss and develop. We believe that the available resources of interested parties are best devoted to developing a permanent solution rather than creating a short-term fix that may result in unforseen market inefficiencies that stymie the development of a long-term solution.

H. Market Efficiency Proposals for October 1, 2002

1. Clearing Price Overlap Using Real-Time Economic Dispatch

125. As the first step towards real-time security-constrained dispatch, the CAISO proposes to implement software that contains an economic-dispatch algorithm to continuously clear overlapping real-time energy bids, so that there will be a single price

[67]The current must-offer obligation has, in effect, unit commitment procedures.

in each 10-minute interval.[68] At present, the CAISO has a "market separation rule" that limits the CAISO to making balanced trades within a given Scheduling Coordinator's portfolio, rather than balancing one Scheduling Coordinator's incremental bids against another Scheduling Coordinator's decremental bids. The market separation rule, together with the absence of a real-time imbalance trading market, prevents these Scheduling Coordinators from making mutually beneficial trades and thus eliminating the Price Overlap.

126. The CAISO proposes to issue Dispatch Instructions to all overlapping bidders, thus requiring bidders to buy energy (i.e., reduce generation) or sell energy (i.e., increase generation) at the applicable 10-minute price. By clearing the Price Overlap for each ten minute interval, the separate incremental and decremental prices converge to a single market clearing price. According to the CAISO, the proposed changes will simplify, and make more transparent, the real-time pricing by setting a single interval market clearing price.[69] According to the CAISO, this dispatch will reflect real-time dispatch in the absence of the market separation rule, and thus is a first step toward its long-term design.

a. Comments

127. The majority of intervenors support the CAISO's real-time economic dispatch proposal, with the noted exception of Dynegy who "suspects [the proposal is] an attempt to lower prices in [the CAISO's] imbalance energy market" (Dynegy at 33). Dynegy further maintains that the CAISO's target price methodology is not adequately explained or supported. Williams supports the CAISO's price overlap correction proposal and the elimination of the market separation rule, stating that this is a step in the right direction to achieve a more efficient market structure. California Inter-Agency Group opposes the use of separate adjustment bids and supports, instead, the use of a supplier's day-ahead

[68]According to the CAISO, Scheduling Coordinators are at times willing to buy real-time Energy or reduce their generator output (by submitting decremental bids) at prices higher than the prices at which other Scheduling Coordinators are willing to sell real-time energy or increase their generator output (by submitting incremental bids). The CAISO refers to this phenomenon as the "Price Overlap."

[69]According to the CAISO, without this reform, the 10-minute interval price may alternate from low to high as the Imbalance Energy Requirement changes sign from positive to negative across the 10-minute intervals. Such price signals are confusing and create perverse incentives in the market.

energy bid curve when incremental or decremental bids are needed to adjust that supplier's output in real time to manage congestion.

b. Commission Ruling

128. As stated above, we are directing the CAISO to expedite implementation of various MD02 long-term elements, which will also expedite implementation of real-time economic dispatch. Nonetheless, the Commission agrees that immediate implementation of a mechanism to clear the price overlap in imbalance energy bids will improve market efficiency and is a step towards the ultimate goal of security-constrained economic dispatch. We will accept the CAISO's proposal to implement software that uses real-time economic dispatch to clear "Price Overlap" problems.

2. Use of a Single Bid Curve

129. The CAISO proposes to require bidders into the day-ahead and hour-ahead markets[70] to submit the same energy bid (i.e., a single energy bid curve) for all services offered by a single resource. In the proposal, the bidder could change its curve with each hourly bid, but it could not submit different bid curves from the same unit for the same hour in different markets. The proposal allows bidders to make separate capacity bids (in addition to their energy bid) for different services. The CAISO believes this proposal should reduce gaming because bidders will be unable to arbitrage between different CAISO markets.

a. Comments

130. SoCalEd, California Inter-Agency Group, and Duke support the single energy bid curve proposal. Reliant and Williams argue that the single bid curve should not be required in the day-ahead market, since flexibility is required in the event circumstances change between the close of the day-ahead and hour-ahead markets. California State

[70]Since the day-ahead market will not be established by October 1, 2002 when the single energy bid curve is proposed to be effective, the CAISO proposal requires a single energy bid curve in the day-ahead residual unit commitment process, as well as the hour-ahead and real-time markets.

Water Project argues that deviations between day-ahead and hour-ahead schedules will be inevitable and must be permitted. California Inter-Agency Group proposes that resources that were on "outage" the day before should be allowed to submit a bid in the real-time market.

b. Commission Ruling

131. The Commission will accept the single energy bid curve proposal.[71] Such a proposal will provide additional efficiency to markets operated by the CAISO, and should reduce the opportunity for gaming in those markets. We will address whether to extend the single energy bid curve requirement to the day-ahead market once the CAISO makes its detailed compliance filing to establish a day-ahead market. Parties will have the opportunity to comment on this requirement at that time.

3. Cap on Negative Decremental Energy Bids

132. The CAISO requests the ability to mitigate decremental energy bids in the real-time market through the imposition of a bid cap of negative $30/MWh. Negative decremental energy bids are intended to reflect costs a supplier incurs to reduce generation. Under most circumstances, a generator should be willing to pay an amount equal to the incremental cost of production that it would avoid (i.e., a positive decremental bid) by not generating. However, suppliers argue that circumstances may exist that would justify a generator requesting payment from the CAISO (i.e., a negative decremental bid) to decrease generation.[72] While the CAISO does not dispute that suppliers may at times incur additional costs to decrease generation, it does not expect that the magnitude of those costs can justify a bid lower than negative $30/MWh. The CAISO proposes this cap to be in effect in all hours under all conditions. According to the CAISO, however, its proposal is narrowly tailored to address periods of system overgeneration during which suppliers could exercise market power.

a. Comments

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[71]In this order, the Commission is expediting the creation of a day-ahead market, but rejecting the proposed residual unit commitment process. Thus, for the near term the single energy bid curve would only apply to the hourly and 10-minute markets.

[72]Suppliers and the CAISO list various reasons for negative decremental bids, e.g., gas imbalance charges a supplier may face if they do not consume gas that has been scheduled for delivery, wear and tear costs of ramping units up and down, shut down costs, and start-up costs to bring a unit back on-line when it is needed again.

133. Calpine, California Inter-Agency Group, and others support the negative bid cap as proposed. Mirant and Reliant object to a negative bid cap, claiming that a negative $30 cap does not take into account costs they might incur such as gas imbalance charges and wear and tear. Alternatively, Mirant requests the Commission set the negative bid cap at the same level as that approved for the positive damage-control bid cap.[73] Duke argues for the elimination of the 10-minute market, rather than a cap on negative decremental bids. Mirant and Williams caution that if a unit is scheduled to run at a specific ramp rate in the current hour, and at a higher ramp rate the next hour – and the CAISO "decs" the unit – the unit will be unable to ramp up to the scheduled level the next hour, thereby incurring replacement energy costs and uninstructed deviation penalties.

134. While the CAISO concedes that a generator may incur substantial costs when the generator receives an order to decrease generation, it does not expect that such costs could result in a energy bid below negative $30/MWh.

b. Commission Ruling

135. As all parties concede, there are legitimate reasons for allowing negative decremental energy bids. Consequently, the Commission will accept the CAISO's proposal for a cap on decremental energy bids at negative $30/MWh. However, we will direct the CAISO to include in its tariff a provision to allow suppliers the opportunity to justify costs in excess of the cap. To the extent a generator can justify costs in excess of its revenues to support a bid below negative $30/MWh, we will require the CAISO to compensate that generator for amounts beyond the cap.

4. Penalties for Excessive Uninstructed Deviations

136. The CAISO proposes to penalize Scheduling Coordinators for uninstructed deviations beyond a tolerance band equal to the greater of 5 MW or three percent of the maximum operating limit of the resource. As proposed, the penalty for positive uninstructed deviations[74] will be calculated as the quantity of energy (Uninstructed Imbalance Energy) in excess of the tolerance band multiplied by a price equal to 100

[73]The CAISO notes that over the past 12 months, accepted decremental bids have generally not exceededthe proposed cap (Answer at 44).

[74]A positive uninstructed deviation occurs when the Scheduling Coordinator produces/delivers more energy than directed based on specific dispatch instructions from the CAISO or the Scheduling Coordinator's final hour-ahead schedule.

percent of the applicable market clearing price. In effect, a supplier would not be paid for any overgeneration (energy) in excess of the tolerance band (the penalty offsets the price paid for the energy). The penalty for negative uninstructed deviations will be calculated as the quantity of Uninstructed Imbalance Energy below the tolerance band multiplied by a price equal to 50 percent of the applicable market clearing price. Thus, negative Uninstructed Imbalance Energy will be charged at 150 percent of the applicable market clearing price.

137. The CAISO's proposal would allow Scheduling Coordinators to aggregate generators interconnected at a single CAISO grid bus point for purposes of determinating the Uninstructed Deviation Penalty, thereby providing for netting of deviations from units located at a single point. Market participants proposing unit aggregations would be required to demonstrate that the units to be aggregated are interchangeable, function as a single entity, and will not affect grid reliability.

138. In addition to the flexibility provided to generating units, the CAISO proposes modifications to its tariff that will allow certain market participants (Metered Subsystems and Self-Served Load) the ability to follow changes in their load with their own internal generation, with Uninstructed Deviation Penalties only applying to the net energy deliveries. Finally, the CAISO proposes that entities with limited control over their output, such as intermittent resources and units providing regulation, would be exempt from the uninstructed deviation penalty provision.

Summary of Comments and Commission Ruling

139. While SoCal Edison, SMUD, Santa Clara, and California Inter-Agency Group support the CAISO's proposals for penalties for excessive uninstructed deviations, others including Duke, Calpine, IEP, the CAC/EPUC, NCPA, and Reliant object to the CAISO's proposed penalty mechanism, claiming that it is inflexible, discriminatory, unduly punitive, and unnecessary.

140. Software limitations: Williams, IEP, CAC/EPUC, Mirant, California State Water Project and others request that the Commission prohibit the ISO from imposing any penalties on a generator for uninstructed deviations until the ISO has implemented the necessary modifications to its dispatch software to allow suppliers to report, and for CAISO dispatch instructions to reflect, legitimate changes in operating parameters such as outages, deratings, and operating problems. In its Answer, the CAISO notes that it is developing software that would allow market participants to modify their operational parameters in real-time, such that when a generator has reduced its availability, this reduction will be incorporated into the instructions the CAISO issues and accounted for in

the assessment of penalties for uninstructed deviations (Answer at 69). Williams, IEP and SMUD further argue that the CAISO must accurately represent all ramp rate constraints on individual units.

141. The Commission commends the CAISO for developing software improvements to receive and incorporate communications on outages, derates, and operating problems in real-time, and will condition approval of penalties for uninstructed deviations on the successful and tested implementation of these software improvements. The Commission will also condition approval of the proposed penalty provision on software improvements that will allow more accurate representation of ramp rates at various operating points of a unit.

142. Must-offer and penalties: Dynegy states that uninstructed deviation penalties on generators should be rejected if a must-offer requirement remains in place. Dynegy cites past Commission orders rejecting penalties proposed in CAISO Tariff Amendment Nos. 33 and 42.[75] In its Answer, the CAISO appropriately notes that the order addressing Amendment No. 42 rejected the penalty proposal as premature, and directed the CAISO to address penalties in the impending May 1, 2002 comprehensive redesign proposal. As for the Amendment No. 33 penalties rejected in 2001, the CAISO asserts in its Answer that "the Amendment No. 33 penalties were primarily intended to address the situation of generators not bidding into the ISO's markets at all; the MD02 penalties are intended to address the situation where generators bid into the ISO energy markets, but do not follow their schedules or dispatch instructions (by either over- or under-generating)."[76] The Commission agrees with the CAISO and rejects Dynegy's arguments as a misinterpretation of the Commission's action in the cited orders.

143. 10-minute constraints: BPA is concerned that the CAISO should limit the application of uninstructed deviation penalties to market participants with the ability to respond to the CAISO's 10-minute instructions. The Commission notes that in Section 11.2.4.1.2 (b), the CAISO's proposed tariff language that we will approve in this order provides an exemption for such cases.

144. Should Scheduling Coordinators be allowed to aggregate: Several intervenors[77] are concerned that the CAISO's proposal would penalize Scheduling Coordinators

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[75]Citing California Independent System Operator Corp., 98 FERC ¶ 61,327 (2002), and California Independent System Operator Corp., et al., 97 FERC ¶ 61,293 (2001)

[76]Answer at 75.

[77]See e.g., Calpine, Williams, Duke, Reliant.

without allowing for deviations to be netted against aggregations of units. As noted by the CAISO, its proposed tariff language provides for portfolio netting for ". . . resources represented by the same SC [Scheduling Coordinator] and connected to the same [CA]ISO Controlled Grid bus and voltage. . . . Other levels of aggregation . . . will be considered on a case-by-case basis based on an ISO review of impact on the ISO Controlled Grid."[78]

145. Mirant requests that the criteria for case-by-case aggregations should be explicit in the tariff. We find that specifying criteria in the tariff at this time is premature in light of the CAISO's plans to "develop a process to allow market participants to propose aggregations of generating units that are not at individual transmission bus points. Market participants proposing unit aggregations will be required to demonstrate that the units aggregated are interchangeable, function as a single entity, and will not affect grid reliability."[79] In any event, should a market participant believe that it was improperly denied the ability to aggregate deviations, it can request dispute resolution under the CAISO's tariff provisions.

146. The Commission notes that, to the extent LMP and other market design proposals help to provide improved pricing and better incentives, these penalty provisions will be less frequently applied/invoked.

147. <u>Hour-ahead schedules as operating instructions</u>: The CAISO has proposed to include changes from final hour-ahead schedules as one of the types of deviations to which the penalties would apply.[80] We agree with the CAISO that such schedules, unless otherwise changed by the CAISO, serve as default operating instructions, and thus are the equivalent of dispatch instructions. We further note that, as the CAISO implements further market design changes to accommodate hour-ahead schedules that are closer to real-time, the likelihood of instances where the penalty would be applicable should diminish.[81]

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[78]Answer at 65-67.

[79]May 1 Filing at 37, note 54.

[80]We note that in its June 17 Filing, the CAISO has proposed to make this proposal more explicit in the tariff.

[81]In this order, the Commission is accelerating implementation of certain elements of the CAISO's market redesign, which includes moving the time period for establishing
(continued...)

148. Value/calculation of penalties: According to CAC/EPUC, it is confiscatory for the CAISO to accept energy and not pay anything for it. Reliant requests a more lenient threshold, and Mirant argues for a sliding scale, i.e., discounting the penalties based on the need for energy in the same interval. Williams argues that if the deviation is in the direction of bids the CAISO is seeking, it should be paid the clearing price in that interval. Santa Clara, on the other hand, states that if a generator fails to honor a dispatch instruction, it should be penalized by having to pay the marginal unit cost of the next unit selected, and suffer a temporary suspension from submitting future bids.

149. In its Answer, the CAISO states that since it has no way to physically prevent a supplier from injecting excess energy into the CAISO grid, a financial disincentive is an appropriate solution. Consequently, the CAISO disagrees with CAC/EPUC's assertion that its proposal is confiscatory. In response to those intervenors who request a more lenient treatment for over-generation, the CAISO notes that the over-generation penalty is identical to that approved for the NYISO, and that the Commission has previously found "strong incentives are needed to induce generators to be vigilant in avoiding over-generation."[82]

150. In light of concerns regarding the adequacy of generation supply for California and the West in the near term, the Commission believes that appropriate incentives to prevent deviations from schedules or ignoring dispatch instructions[83] are justified. Furthermore, we find the level of the bandwidth and penalties to be reasonable. Therefore, we will accept the CAISO's proposal regarding uninstructed deviations, subject to the software modifications described above. However, as market conditions improve, we will consider requests to adjust the level of, or eliminate, the penalty provisions.

151. Additionally, the Commission notes that deliberate underscheduling of load has provided gaming opportunities in the past, and should be discouraged. According to the CAISO, however, underscheduling has stabilized at 2-3 percent, and therefore does not

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[81](...continued)
final hour-ahead schedules from 120 to 60 minutes before real-time.

[82]Citing Central Hudson Gas & Electric Cogeneration, et al., 86 FERC ¶ 61,061 at 61,266 (1999).

[83]As provided for in CAISO tariff section 2.3.1.2.1, ignoring dispatch instructions in order to maintain local system integrity is acceptable.

appear to be a significant problem at this time.[84] However, if underscheduling increases to a problematic level, the CAISO may propose a remedy that provides an appropriate incentive to load serving entities to schedule more accurately.

4. Miscellaneous Issues

A. Balanced Schedule Requirement

152. Dynegy recommends that the CAISO remove the balanced schedule requirement from the tariff immediately rather than waiting until establishment of the day-ahead market. SMUD argues against eliminating the requirement, claiming it would result in the CAISO being too involved in the markets.

153. While the elimination of the balanced schedule requirement is a desirable improvement in market operations, we believe that eliminating this requirement immediately may cause the market more harm than benefit. Furthermore, elsewhere in this order, we are requiring the CAISO to expedite the development of certain market redesigns, such as the day-ahead market, that will accommodate the elimination of the balanced schedule requirement by January 1, 2003.

B. 10-Minute Market

154. Although the CAISO currently operates a 10-minute market, many intervenors argue it is problematic for market operations.[85] Whether to use a 10-minute market is an integral consideration in developing specific market design elements. To allow for due consideration of this question, we will direct parties to address the appropriate market interval (10-minute or hourly) for market design elements at the technical conference that we establish in this order.

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[84] See April 26, 2002 State of Market Report of the California ISO by Anjali Sheffrin of the Department of Market Analysis, at 15.

[85] See e.g., BPA, Duke, CAC/EPUC, Mirant.

C. Allegation that Tariff is Thermal-Centric/Discriminatory to Other Resources/Load

155. California State Water Project argues that the CAISO tariff proposals are written to accommodate gas-fired merchant generation, but apparently apply to hydro generation and even interruptible load. California State Water Project asserts that the CAISO tariff suffers from a "recurring design flaw of a failure to accommodate other resources" and gives the example of AMP where the CAISO concedes it does not know how AMP would apply to treatment of Participating Loads.

156. We are sympathetic to the concerns of those intervenors that the proposals do not adequately address how the revised market design proposals will be implemented for non gas-fired generators, e.g., hydro or other energy-limited resources. Although the MD02 proposal includes some accommodations for these resources, a determination of the reasonableness will be addressed in the context of reviewing the CAISO's June 17 Filing of proposed tariff language, which will be addressed in a separate order.[86]

D. Comments that Billing & Settlement Process is Too Costly and Burdensome

157. Certain intervenors claim that the introduction of the new market design adds "additional layers of complexity."[87] California State Water Project requests that each proposal for market redesign be examined not only with respect to its substantive merits, but also with respect to the burden on users of the grid. Similarly, we note that the CAISO requests additional compliance monitoring authority to perform audits and monitor data provided to the CAISO (see May 1 Filing at 153-157).

158. The Commission shares the concerns of parties regarding the costs of market operations. As we stated previously, we believe that implementation of many of the CAISO's market design changes will introduce efficiencies in market operations, thereby lowering costs to customers. Therefore, to ensure timely achievement of these savings, we will direct the CAISO to expedite the development of several of these efficiency enhancing market redesign elements. Furthermore, parties will have additional opportunity to comment on the market design elements filed in the future to address the

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[86]The Commission anticipates that it will address the applicability of market rules to all types of resources in our forthcoming proposal on Standard Market Design.

[87]See e.g., SCE at 30-31, SMUD at 24, California State Water Project at 6-7.

market efficiencies associated with those elements. Additionally, since any CAISO request for additional compliance monitoring authority would be made in a future filing, parties will have the opportunity to comment on any proposed compliance monitoring tariff language as well.

E. Request for a Date Certain for Demand Response Program

159. According to Dynegy, nothing in the MD02 proposal seeks to address the lack of demand responsiveness to price, and the Commission should require the CAISO and market participants to develop such a program by a date certain.

160. In its Answer, the CAISO responds that it is proposing to expand the flexibility for loads to participate in its Participating Load Program, and that its MD02 Comprehensive Design accommodates demand-side bidding, including the option to submit multi-part bids in the day-ahead, hour-ahead and real-time markets. The CAISO states that it is committed to establishing effective demand response and overcoming the existing technical barriers, "but the Commission needs to realize that this is not a problem that can be resolved overnight."[88]

161. Because demand response is a critical foundation for any market design, we will direct the CAISO to submit a schedule and process by October 21, 2002 for accomplishing the integration of demand signals in its market design.

F. Seams Issues

162. Many intervenors express the concern that the CAISO's MD02 design must address potential seams issues with surrounding systems. The CAISO notes in its filing that since June 2001, it has been in active discussions with RTO West and WestConnect to develop a shared "Western Market Vision" that envisions the development of a seamless Western market where all market participants and customers can obtain the benefits of "one-stop shopping" and can capture the efficiencies inherent in a larger regional market. According to the CAISO, discussion have (1) focused on the development of a venue for effective transmission expansion in the West; (2) developed proposals for reciprocal pricing that are intended to reduce transaction-based barriers to trade between the regions; (3) begun the development of a West-wide market monitoring organization; and (4) established a forum for identifying and fostering opportunities for joint system and infrastructure development.

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[88]Answer at 152.

163. The Commission commends the CAISO's efforts and notes that the Seams Steering Group of the Western Interconnection has been actively working to develop resolutions to seams issues between the proposed RTOs in the Western Interconnection. The Commission directs the CAISO to continue its participation in the Seams Steering Group of the Western Interconnection. Furthermore, we will require that the CAISO and the Seams Steering Group of the Western Interconnection comply with any future Commission requirements concerning the seams issues that we will establish in forthcoming orders on the RTO proposals of RTO West and WestConnect.

5. Next Steps for California

164. This Commission has been addressing issues relating to the availability and price of electricity in California and the Western states for the past two years. Over that time, the underlying issues remain the same – within an interconnected, interdependent electric grid and market, California more than any other state depends upon its neighbors for a steady supply of electricity and gas to feed its growing energy needs. Unless California builds new generation and transmission, increases the physical and contractual security of its natural gas supply, helps its customers see and respond to high electric prices, and continues and increases its conservation efforts, no set of market rules and market power mitigation measures can make its markets fully competitive, or protect the state's customers from the inevitable reliability failures that will result. This Commission can encourage and facilitate new infrastructure construction, but only California can make it happen.

165. Experience over the past decade has made clear that three elements are needed for a sound, robust, competitive wholesale electric market. The first is infrastructure – without adequate and diverse generation and imports in excess of load, and transmission to get the power to customers, the region may not be able to assure reliable service. In this case, the market will not be workably competitive and there will not be enough suppliers and imports to discipline each other and hold down prices. Infrastructure includes physical supply resources and the underlying fuel transportation systems. An additional infrastructure element is demand response programs, which allow customers to manage their electricity consumption levels in response to price and thus further discipline and balance supplier market power.

166. The second element needed for a robust competitive electric market is balanced market rules. Good market rules let both supply and demand resources compete to serve customers' needs in a fair, open, predictable, transparent and non-discriminatory process.

They encourage and facilitate responsible behavior in the marketplace, which lets all parties share the benefits of competition. In contrast, poorly designed market rules can be abused or exploited in ways that can raise prices, reduce supplies, and harm the market as a whole. Institutions such as RTOs and ISOs administer market rules and operate markets fairly.

167. The third element needed for a sound competitive electric market is the combination of market oversight and market power mitigation. Market oversight is watching the market to be sure that it is working effectively. Market power mitigation protects customers from flaws in infrastructure and market rules, and the exercise of market power or extraordinary circumstances that strain the market, by limiting price levels and supplier behavior to prevent harm. While market power mitigation can set limits on the consequences of inadequate infrastructure and less-than-perfect market rules, it cannot cure those underlying problems.

168. In this order, the Commission acts to improve the market rules that will apply in the California wholesale electricity market, and by extension that will affect the entire Western Interconnection. We also establish a new set of market power mitigation rules for the California market. But this Commission has no authority to fix the most fundamental of California's problems – the relative inadequacy of the state's energy infrastructure.[89] This inadequacy of generation, transmission and demand response, combined with diminished import availability, in the face of growing electricity demand is a cause of California's dysfunctional electricity market. Until it is fixed, California will not have a sound, robust, competitive wholesale electricity market.

169. Although the Commission cannot require California to act, we strongly urge the state's agencies, officials and citizens to consider and act on the following infrastructure concerns:

(A) With respect to new generation, we encourage the state's agencies to work with the CAISO to identify a set of preferred sites within the state where new generation will improve grid performance and reduce congestion. They should then identify and commit to a set of streamlined procedures that will apply to new generators locating at those sites,

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[89]See e.g., Commission Staff Report, Western Market and Infrastructure Assessment (July 2002); Staff Report to the Federal Energy Commission on Western Markets and the Causes of the Summer 2000 Price Abnormalities (November 1, 2000); Report to the Western Governors' Association: Conceptual Plans for Electricity Transmission in the West (August 2001).

to reduce the risks and expedite the benefits of infrastructure investment in California. It is also desirable to expedite resolution of the utility creditworthiness issues in the Western states to enhance the attractiveness of the load serving entities as long-term purchasers of electricity and gas.

(B) The second element needed to balance supply and demand is to better manage demand. California has been a world leader in energy efficiency, and this must continue. We encourage the California Energy Commission and the CPUC to expedite their ongoing investigation into demand response options and to move aggressively to allow its customers to use demand response and efficiency options to manage their energy use and bills. Letting customers see and respond to wholesale price signals will allow Californians to protect themselves from high prices and supply scarcity or market power with less need for regulatory intervention. Quick resolution of the CPUC's ongoing real time pricing proceeding will let Californians use the 23,000 real-time meters that have been installed in the state over the past two years.[90]

(C) The existence of transmission constraints and a lack of local supply relative to demand causes local reliability problems within the load pocket and price differentials between the load pocket and the rest of the region. Therefore, we encourage the state agencies to work with the CAISO and the Western RTO entities to devise a plan of actions and timelines for expanding and upgrading the regional transmission grid and the transmission constraints affecting California. In addition, we encourage the state to determine how to use concentrated applications of energy efficiency, demand response and distributed generation within load pockets and urban areas to better balance local supply and demand.

(D) Since a high percentage of California's generation – and the bulk of its new generation – is fueled by natural gas, the state should work to assure the adequacy of its gas supply. With huge increases in gas demand in its neighboring states, California and its generators and local gas distribution companies, must continue working with the gas providers and pipelines to assure that there is adequate pipeline capacity into and inside

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[90]In response to California Assembly Bill 29x of 2001, which appropriated $35 million for the effort, the CEC has directed the installation of 23,000 real-time meters for customers with loads above 200 kw. Those customers, according to the CEC, comprise 30 percent of California's peak electricity demand. See http://www.energy.ca.gov/demand response/notices/2002-07-09_notice.html. Tariff changes reflecting the use of these meters is awaiting CPUC approval.

the state, adequate storage capability, and adequate contracts to assure that delivery of California's gas needs is not compromised.

The Commission orders:

(A) We reject requests to extend the current price mitigation formula, and reject the CAISO proposal to establish a $108/MWh bid cap. We extend the current must-offer requirement and establish a bid cap for California markets and a price cap for all sales in WECC spot markets set at $250/MWh, beginning October 1, 2002, as discussed in the body of this order.

(B) We reject the CAISO's local market power mitigation proposal and direct the CAISO to file within 30 days of the date of this order a revised AMP proposal, as discussed in the body of this order. In addition, we direct the CAISO to file quarterly reports detailing the impacts of its AMP measures, as discussed in the body of this order.

(C) We reject the CAISO's proposal to implement an interim residual unit commitment process.

(D) We reject the CAISO's 12-month market competitive index proposal as a mitigation tool and direct CAISO to file the information produced by this index weekly with the Commission's Office of Market Oversight and Investigations.

(E) We direct the CAISO to file, by October 21, 2002, tariff language for the day-ahead, ancillary services, and hour-ahead and real-time reforms, as discussed in the body of this order, to be implemented by January 1, 2003.

(F) We authorize the CAISO to begin to expend funds on the development of software and systems for locational marginal pricing and the full network model.

(G) We accept for filing, to become effective October 1, 2002, the CAISO proposals for clearing the price overlap using real-time economic dispatch, and the use of a single energy bid curve. We approve, subject to conditions as discussed in the body of this order, the CAISO proposals for a negative $30 cap on decremental energy bids, and penalties for excessive uninstructed deviations. We direct the CAISO to make a compliance filing within 30 days of the date of this order modifying the proposals, as discussed in the body of this order.

(H) We direct the CAISO to submit a schedule and process no later than October 21, 2002 for accomplishing the integration of demand signals in its market design.

(I) We direct the staff to convene a technical conference to address long-term elements of the comprehensive market redesign, including but not limited to: resource adequacy issues, CRRs, LMP and FNM implementation, and the use of a 10-minute market.

By the Commission.

(S E A L)

Linwood A. Watson, Jr.,
Deputy Secretary.