

126 FERC ¶ 61,221
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

California Independent System Operator Corporation Docket No. ER06-615-038

ORDER ADDRESSING MRTU READINESS CERTIFICATE

(Issued March 13, 2009)

1. On January 16, 2009, the California Independent System Operator Corporation (CAISO) submitted an informational filing certifying the readiness of the CAISO's Market Redesign and Technology Upgrade (MRTU)¹ to go into effect on March 31, 2009. The CAISO states that MRTU will be ready for implementation effective as of March 31, 2009, provided that certain essential milestones are met. The CAISO further states that it will continue to update the Commission and others with monthly status reports and that if it is unable to launch MRTU on March 31 for any reason, it will immediately inform the Commission and the CAISO's market participants.

2. This order accepts the CAISO's filing based on the CAISO's commitments to achieve the milestones and satisfactorily resolve the issues it has identified in the certification. In numerous prior orders the Commission approved tools for the CAISO to manage its migration to MRTU, including that it has tariff authority to validate and correct prices, to monitor and mitigate the market, and to revert to a pre-MRTU launch status. With these tools, the attestations of the CAISO Chief Executive Officer and several of its senior managers that MRTU is ready for launch, and the commitments of the CAISO to address market participant concerns, we accept the certification. The CAISO is in the best position to evaluate its systems and assess the concerns of its customers and market participants in making the decision to launch MRTU. Therefore our acceptance of the filing permits March 31 as determined by CAISO but leaves with it the flexibility to seek a new date if necessary.

¹ *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274 (2006) (MRTU Order), *order on reh'g*, 119 FERC ¶ 61,076 (2007); *see also Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,313 (2007).

I. Background

3. The CAISO filed its MRTU Tariff on February 9, 2006 in Docket No. ER06-615-000. The MRTU Tariff filing was the culmination of more than six years of the CAISO and stakeholder analysis and collaboration to redesign the CAISO markets. Leading up to that filing, the Commission had issued over 30 orders providing guidance to the CAISO and its market participants on various elements of MRTU. Since the issuance of the order conditionally accepting the MRTU Tariff filing, the Commission has issued a series of orders, addressing compliance filings, rehearing requests, and additional CAISO proposals to further refine the MRTU market design.

4. The instant filing is in compliance with the MRTU Order that conditionally accepted CAISO's MRTU Tariff filing. In the MRTU Order, the Commission addressed key design elements of MRTU, provided guidance and directed significant changes, and conditionally accepted the MRTU Tariff, subject to further modifications. The Commission also addressed comments and concerns raised by market participants regarding the MRTU implementation schedule. Specifically, the Commission stated that MRTU should be implemented "only when the CAISO's and the market participants' systems, software, and tools have been fully tested and the CAISO and its stakeholders are confident that MRTU will function properly when implemented."² The Commission expressed its commitment to a sound and orderly MRTU implementation plan and directed the CAISO to file, at least 60 days prior to MRTU implementation, a statement certifying market readiness.³

5. On January 16, 2009, the CAISO submitted the instant filing certifying the CAISO's readiness for implementation of MRTU.

II. The CAISO's Readiness Certification

6. The CAISO's readiness certification consists of several elements which, according to the CAISO, substantiate that MRTU is on track for successful implementation on March 31, 2009, as long as important milestones are met. The CAISO acknowledges that market participants still have questions and concerns, but commits to continue to work with market participants to ensure that their concerns are addressed as fully as possible before MRTU go-live.

7. The CAISO's certification contains declarations of readiness by: Mr. Yakout Mansour, the CAISO's President and Chief Executive Officer; Mr. Jim Detmers, the

² *Id.* P 1380.

³ *Id.*

CAISO's Vice President of Operations; Mr. Steve Berberich, the CAISO's Vice President of Corporate Services; Dr. Keith Casey, Director of the Department of Market Monitoring; Dr. Scott Harvey of LECG; and Mr. Peter Ristanovic of Siemens Energy, Inc.

8. Each of the CAISO officer declarations certifies that the CAISO will be ready to implement MRTU on March 31, 2009, barring any unforeseen developments. Dr. Casey declares that the CAISO's Division of Market Monitoring is equipped with the market monitoring tools it requires and that the CAISO's remaining issues will be sufficiently resolved in advance of March 31, 2009.

9. Dr. Harvey certifies that he has reported to the CAISO Board of Governors that no substantial unresolved problems were observed that would prevent the CAISO software systems from calculating prices consistent with the MRTU Tariff and locational marginal pricing methodology. Dr. Harvey also states that no material unresolved problems were observed that would prevent the software systems from committing and dispatching load and generation consistent with the MRTU Tariff. Mr. Ristanovic certifies that the software systems provided by Siemens Energy, Inc. will be ready for the CAISO to implement MRTU on March 31, 2009.

10. The CAISO states that while the large majority of issues related to MRTU implementation have been substantially resolved, the CAISO and market participants agree that MRTU implementation depends on substantial resolution of concerns in five general categories discussed below.

A. Quality of Price Solutions

11. The CAISO states that after 18 months of market simulations it is confident that the MRTU software produces correct prices. In support, the CAISO points to the analysis conducted by LECG that concluded that the MRTU software calculates day-ahead and real-time locational marginal prices consistent with the MRTU Tariff. The CAISO also indicates that its Department of Market Monitoring has conducted analysis of MRTU market simulation prices and concluded that the MRTU software is functioning adequately and is ready for launch.

12. The CAISO states that some anomalous prices had been observed in the course of MRTU market simulation. The CAISO explains that in cases where the anomalous prices were due to software issues, the CAISO has fixed and extensively tested the software. The CAISO asserts that in other cases, anomalous prices resulted from certain extreme market simulation scenarios or market participants' bidding behavior. The CAISO states that it conducted structured market simulation tests based on normal conditions and concluded that price volatility was diminished and explainable. The CAISO also states that further analysis of structured testing by the Department of Market Monitoring concluded that MRTU markets perform reasonably well overall. The CAISO

agrees with the Department of Market Monitoring's recommendation to review extreme pricing outcomes in market simulation in the weeks prior to MRTU go-live and take any necessary corrective actions.

13. The CAISO claims that high prices are not necessarily anomalous and may be consistent with more accurate locational marginal pricing. However, the CAISO points out that it has tariff authority to validate and correct prices. In addition, the CAISO refers to its November 2008 filing to put in place a price cap and floor of \$2500/MWh and minus \$2500/MWh, respectively, and to delay publication of anomalous prices that will be revised, or have a reasonably significant chance of being revised.⁴

14. The CAISO acknowledges market participants' concerns over Residual Unit Commitment prices produced in market simulation. The CAISO asserts that, along with the Department of Market Monitoring, it has tested and analyzed Residual Unit Commitment prices and believes that the MRTU software is performing in accordance with the MRTU Tariff. The CAISO states that after MRTU launch, it plans to continue to discuss with market participants Residual Unit Commitment issues to consider any market design changes. Further, the CAISO states that it will have a rapid response team in place to respond to any price anomalies, including Residual Unit Commitment, that warrant market design fixes and will seek expedited tariff waivers or amendments as appropriate.

B. Settlements

15. The CAISO states that it has made substantial progress in producing accurate settlement statements and is taking a number of actions to implement its full settlement process at MRTU launch. As required by the MRTU Tariff, the CAISO has engaged PriceWaterhouseCoopers to provide an audit opinion confirming that settlements and market clearing software calculate quantities and prices in compliance with the MRTU Tariff. The CAISO states that it intends to provide the audit results to market participants prior to the close of the first MRTU day-ahead market by posting a market notice and will provide a copy of the notice to the Commission.

16. The CAISO acknowledges that some market participants have received settlement statements coming out of market simulation that reflect extremely high charges. The CAISO attributes these high charges to missing data and to market participant bidding and scheduling behavior in the market simulation environment. The CAISO argues that charges to scheduling coordinators "should not, in general, be materially different under

⁴ The Commission acted on that filing on January 30, 2009. *See Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,082 (2009).

MRTU as compared to today's market."⁵ However, to address the market participants' concerns with settlements, the CAISO states that it is prepared to put in place a monitoring process and alert any scheduling coordinators whose market liabilities are accruing at a rate higher than normal before any charges appear on the scheduling coordinator's settlement statement. According to the CAISO, this will allow the scheduling coordinator to modify its bidding behavior if necessary and allow the CAISO to determine whether pricing anomalies are contributing to high charges and need to be addressed.

C. MRTU Market Simulation and Market Simulation Exit Criteria

17. The CAISO states that it has satisfactorily achieved the main objectives of MRTU market simulation and has moved to parallel operations simulation in January. According to the CAISO, parallel operations simulation allows for more realistic tests of MRTU. Parallel operations simulation includes four components: system operations testing,⁶ grid operator scenario training, pre-production,⁷ and cut-over to MRTU.⁸

18. The CAISO states that 19 of the 21 MRTU market simulation exit criteria have been satisfied.⁹ The remaining two relate to settlements and MRTU software/systems variances. With regard to settlements, the CAISO states that it is devoting the resources necessary to address remaining settlement issues. Regarding variances, the CAISO states that over the course of market simulation, 3,250 variances reported as high, very high,

⁵ CAISO Transmittal Letter at 13.

⁶ System operations testing involves incorporating current production systems in the simulation environment – e.g. load forecast, outages, *etc.*

⁷ In pre-production simulation, market participants mimic as closely as possible their MRTU bidding and scheduling behavior.

⁸ "Cut-over to MRTU" is the transition from the currently effective ISO market design and software to the market design and software that will be used following MRTU launch.

⁹ MRTU market simulation entry and exit criteria can be found in "Market Simulation Criteria Tracker" at www.aiso.com/186a/186acdf53cdf0.html. Entry and exit criteria for each phase of MRTU market simulation are a set criteria that are used to evaluate whether the objectives of a particular phase of market simulation have been met sufficiently to move to the next phase of market simulation

and critical have been resolved, and only 44 high variances remain unresolved.¹⁰ The CAISO states that it expects that most of these issues will be resolved by the end of January through software fixes or through resolution of market participants' questions, and that it will address any new variances without affecting market participants' readiness.

19. The CAISO has also instituted a freeze on changes to software applications with which stakeholders' systems interact. The CAISO explains that it will only make software modification if the modification is reviewed with the market participants and they have time to modify their systems in turn. According to the CAISO, effective February 1, 2009, the CAISO will only fix critical software variances that are needed for MRTU launch and that do not affect market participants' systems. The CAISO further states that if any major variances are found after March 1, 2009, the CAISO will notify the Commission and work with market participants to resolve the issue.¹¹

D. Grid Operations Readiness

20. The CAISO reports that much of the readiness effort is now focused on grid operations. The CAISO explains that grid operators have completed multiple levels of training over the last year, and as of December 1, 2008, they have operated the MRTU market simulation desk to gain added training with MRTU and provide support to market participants similar to the support they will provide after MRTU goes live.

21. According to the CAISO, additional operator training includes running operational scenarios in market simulation. The CAISO states that it has conducted short duration generating unit control tests to test software communication between its energy management system and the MRTU generation dispatch module. Further, the CAISO claims that it will conduct additional "loop" tests to ensure proper communication between the energy management system and the MRTU generation dispatch module based on real-time load forecast, load following requirements, and real-time outages.

E. Readiness of the Department of Market Monitoring

22. The CAISO states that the Department of Market Monitoring has fully trained staff and has adopted a market monitoring approach consistent with those of other

¹⁰ Market participants and the CAISO rank systems/software issues (variances) as critical, very high, high, medium, and low, depending on the severity of the variance in interfering with market participants' ability to participate in, or the CAISO to run, the MRTU market.

¹¹ CAISO Transmittal Letter at 15.

regional transmission organizations. According to the CAISO, the Department of Market Monitoring is equipped with an automated monitoring system and a dedicated simulation tool to re-run MRTU markets for analysis purposes. The CAISO states that while there are a few remaining issues with the performance and availability of the simulation tool, they will be sufficiently resolved prior to MRTU launch.

23. In addition to the five general categories discussed above, the CAISO lists thirteen known issues requiring resolution prior to MRTU start,¹² including issues related to: (1) energy and cost accounting for pumped hydro units; (2) day-ahead schedules when issuing shut-down instructions to generating units; (3) honoring resource start times in real-time and in Residual Unit Commitment; and (4) consistency of resource-specific prices with aggregate pricing node prices.¹³

24. Further, the CAISO's readiness certification describes the CAISO's plans for cut-over activities to ensure a smooth transition from the current market to the MRTU market. The CAISO states that it has prepared a pre-production simulation plan that sets forth activities leading up to go-live. In addition, the CAISO commits to establish an operations center and a solutions center, staffed with key personnel around the clock, to communicate with market participants and quickly address any issues leading up to go-live. The CAISO states that after MRTU launch, it will have a cross organizational rapid response team in place to swiftly address any market issues. The CAISO adds that if fundamental concerns arise after MRTU start, it will exercise its authority under the MRTU Tariff to revert to the currently effective tariff and has developed plans for doing so if necessary. According to the CAISO, the cut-over and reversion plans have gained considerable stakeholder support.¹⁴

25. With regard to the CAISO and market participants' readiness, the CAISO states that its business units and staff have completed detailed MRTU readiness activities and each CAISO business unit has signed off on all high priority business processes as of September 2008. With regard to market participants, the CAISO states that it has provided extensive MRTU training to market participants through courses, workshops, and computer-based training in the past two years. Finally, the CAISO reports that it has conducted four assessments of market participants' readiness in the past two years. The final readiness assessment is scheduled for February 2009. The CAISO also states that one of the market participant readiness indicators – that at least 80 percent of active market participants are ready prior to MRTU launch – was not on track as of the last

¹² See CAISO Transmittal Letter at 27.

¹³ A full list of issues can be found at CAISO Transmittal Letter, section VIII.

¹⁴ *Id.* at 19.

assessment. However, the CAISO states that it anticipates this indicator to be on track after the February readiness assessment is completed. Therefore, the CAISO has reported it as such in its readiness criteria dashboard attached to its certification filing.

26. Moreover, the CAISO states that Science Applications International Corporation (SAIC) has verified that various new applications that constitute MRTU were developed, built and tested in accordance with the MRTU Tariff and no major issues were uncovered by SAIC with respect to either software functionality or the relationship between software systems and the MRTU Tariff. The CAISO further claims that it has complied with specific Commission directives regarding the CAISO's software and systems testing prior to MRTU start up. The CAISO identifies specific activities and essential milestones that remain prior to implementation of MRTU and specifies the time frame through March 2009 for completion of the milestones.

27. The CAISO also identifies six MRTU-related filings that are pending before the Commission that the CAISO believes the Commission must act on prior to MRTU implementation.¹⁵ The CAISO argues that Commission action on these filings will resolve critical open questions that must be addressed for a successful implementation of MRTU. Accordingly, the CAISO requests Commission action on the identified filings by March 1, 2009 to reduce regulatory uncertainty for market participants and the CAISO.

III. Notice and Responsive Pleadings

28. Notice of the CAISO's MRTU readiness certification was published in the *Federal Register*, 74 Fed. Reg. 5,834 (2009) with interventions and protests due on or before February 6, 2009. J. P Morgan Ventures Energy Corporation and BE CA LLC (collectively, J.P. Morgan) filed a late motion to intervene and comments in the ER06-615 proceeding, stating that it is a party to certain agreements that govern the operation, dispatch, and sale of capacity and energy from resources located within the CAISO's system. J.P. Morgan also asserts that it is a CAISO certified scheduling coordinator in the CAISO's markets. Further, it agrees to accept the record established in this proceeding.

29. Timely comments were filed by California Municipal Utilities Association (CMUA), Northern California Power Agency (NCPA), California Public Utilities Commission (CPUC), Turlock Irrigation District (Turlock), the United States Department of Energy (US DOE), the City of Santa Clara, California (SVP), Modesto Irrigation District (Modesto), Mirant Energy Trading, LLC, Mirant Delta, LLC, and Mirant Potrero LLC (collectively, Mirant), the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, Six Cities), Transmission Agency of Northern

¹⁵ *Id.* at 28-29.

California (TANC), Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company (collectively, IOUs), Sacramento Municipal Utility District (SMUD), Western Power Trading Forum (WPTF), Calpine Corporation (Calpine), Powerex Corp. (Powerex), Western Area Power Administration (Western), the California Department of Water Resources State Water Project (SWP). Golden State Water Company (GSWC) filed a motion to file comments out-of-time and comments. On February 19, 2009, Mirant filed supplemental comments.

30. On February 18, 2009, the CAISO filed an answer to comments and protests. On March 5, 2009, TANC filed an answer to the CAISO's answer to comments and protests.

IV. Comments and Protests

A. MRTU Readiness

31. A number of parties¹⁶ commend the CAISO for its MRTU implementation efforts and express conditional support for a March 31 MRTU launch; however, they identify a number of issues that in their view must be resolved prior to MRTU launch. For example, the IOUs state that they agree with the CAISO that it may be possible for MRTU launch on March 31, 2009; however they believe a number of corrections must be made to several MRTU systems and verified far in advance of that date. The IOUs acknowledge that the limitations of market simulation environment can affect simulation results, but they believe that issues remain that may delay MRTU implementation. In their view, MRTU should not be implemented unless there is broad confidence that it will work properly. The IOUs intend to make their final decision on whether they can support a March 31, 2009, MRTU launch during the last week of February and will inform the Commission of their decision following the CAISO's March 2, 2009 MRTU status report.

32. The CPUC encourages the CAISO to resolve various issues related to MRTU implementation, including those identified in the CAISO's readiness certification, the Department of Market Monitoring's report attached to the CAISO certification filing, and those identified by CPUC-jurisdictional utilities and other stakeholders. GSWC points to the significant reservations reflected in market participants' comments and urges the CAISO to address these significant concerns before launching MRTU.

33. Six Cities argue that the CAISO's readiness certification does not and cannot at this time provide adequate assurance that MRTU can be implemented successfully on March 31, 2009. Six Cities request that the Commission withhold approval of implementation of MRTU until the CAISO presents a demonstration that the MRTU

¹⁶ IOUs, WPTF, J.P. Morgan, Calpine, Dynegy, SWP, CPUC, and Powerex.

systems and market participants are ready for MRTU launch. Six Cities request that MRTU not be implemented until all market simulation exit criteria have been satisfied within a timeframe that is sufficient to allow market participants to implement modifications necessary to their own software systems and complete their personnel training. CMUA states that its members do not share the CAISO's high level of confidence in MRTU readiness.

34. SWP states that the Commission should allow the CAISO to proceed, with final approval of MRTU start-up reserved until the CAISO establishes resolution of critical outstanding issues. SWP identifies critical issues regarding pump/storage operations, existing transmission contracts, and settlements that it is working with the CAISO to resolve. SWP states that these serious problems must be resolved prior to MRTU start-up.

35. US DOE argues that the Commission should not approve MRTU launch and states that the CAISO should be required to demonstrate that it has resolved pivotal matters of price levels and pricing before MRTU start-up. US DOE argues that the CAISO's systems, software and tools have not been fully tested and that US DOE is not confident that MRTU will function properly. US DOE also points to various readiness concerns that prevent the implementation of just and reasonable rates.

36. SMUD protests the CAISO's assertion that it is ready to implement MRTU. SMUD argues that additional caution is merited due to the far from optimal implementation environment in California, including drought and economic conditions. Modesto adopts the pleadings of SMUD, TANC and CMUA and protests the CAISO's proposed MRTU launch. Modesto argues that it is the CAISO's obligation to address the problems with MRTU now, not when adverse results are experienced after MRTU go-live. NCPA fears the potential for unintended and possibly serious market consequences due to insufficient testing of the MRTU systems as a whole. NCPA requests that the Commission require the CAISO to communicate with the Commission and market participants on a weekly basis regarding the progress that is being made on resolving identified issues.

37. Western emphasizes that MRTU should not be launched until the CAISO has resolved all of the major issues with implementing MRTU, met all of its market simulation exit criteria, and garnered the confidence of the market participants that MRTU software will perform as intended. Western believes that implementing MRTU on March 31, 2009, is premature.

B. Settlements-Related Issues

38. The IOUs state that since market participants will not receive their first real invoice until nearly two and a half months after MRTU start, they should receive assurance that the CAISO's settlement systems work properly in market simulation. In

particular, IOUs state that they would like to see at least one complete and accurate monthly settlement statement produced by mid-February that is free of large, erroneous charges and is mathematically correct. WPTF asks that the Commission direct the CAISO to produce market simulation settlement statements through MRTU launch.

39. WPTF also requests the Commission to affirm that upon MRTU launch, the CAISO markets will operate pursuant to the MRTU Tariff and Business Practice Manuals, and that if system deficiencies produce outcomes inconsistent with the MRTU Tariff, the CAISO will remedy the situation. To protect against erroneous charges, WPTF, Calpine, Dynegy, and J.P. Morgan propose to waive settlement dispute provisions of the MRTU Tariff for the first three months of MRTU operation to allow market participants to dispute any issues up to 76 business days after a given trade date. However, WPTF cautions against any other protective measures that would offer relief to a market participant if the shortfall is then allocated to other market participants. Similarly, Dynegy states that it finds no compelling evidence for abandoning the current “pay and dispute” principle and asks that the Commission reject any proposal to allow market participants to pay less than their full CAISO invoices.

40. J.P. Morgan states that throughout market simulation it has not been able to download all relevant price information from the CAISO successfully. J.P. Morgan states that it is concerned that this will prevent market participants from validating their settlement statements.

41. US DOE cites simulated invoices that have shown potential charges of magnitude higher than what is presently being paid, and notes that one simulated invoice increased costs by over thirty two thousand percent. US DOE notes that federal appropriation statutes and rules may cause the US DOE and other federal entities to be prohibited from paying charges at levels that the simulated invoices suggest. US DOE argues that the market simulation charges are exaggerated and incomprehensible. US DOE requests that the Commission delay the MRTU launch until market simulations are capable of producing customer bills that are reasonable and understandable. US DOE also requests that as MRTU is implemented, all penalties and interest for non-payment be waived for at least nine months.

42. NCPA states that it has not yet received a settlement statement that could be validated. According to NCPA, the MRTU launch timeline will not allow market participants to conduct complete bid-to-bill testing after February 15, 2009, and, to the extent that the CAISO makes any changes to its systems after that date, market participants will not be able to assess the impact on settlements.

43. Multiple parties¹⁷ argue that market participants should be protected from anomalous pricing results that have been seen in the CAISO market simulation, and recommend interim payment protection because invoices with potentially incorrect charges must be paid under the current MRTU Tariff, pending dispute resolution. CMUA proposes a one-year interim payment protection mechanism to protect consumers, ensure market liquidity and reliable operations, and serve as a safety net to avoid a repeat of past market catastrophes. Under the CMUA proposal, scheduling coordinators that receive an invoice exceeding 200 percent of the invoice for a comparable year period would pay at least 125 percent of the comparable year period amount when due, and the balance of the invoice amount would be subject to investigation and adjustment. The CMUA proposal would also provide that net creditors would receive at least their cost of supply plus the CAISO's grid management charge, pending investigation and resolution. GSWC supports CMUA's interim payment option proposal.

44. Western states that federal statutes require Western to have funds available before incurring obligations on behalf of its scheduling coordinator customers. Based on the high prices observed in market simulation, Western argues that it will need to significantly increase the amount of funds advanced by its scheduling coordinator customers. Western argues that these increases may exceed the ability of some entities to pay and may lead to unintended impacts, including reliability impacts.

C. Quality of Market Simulation Solutions

45. The IOUs raise concerns with the quality of MRTU market simulation pricing outcomes that, if unresolved, could delay MRTU launch. First, the IOUs argue that erroneous models of transmission system and load impose significant risk of inaccurately high prices. Therefore, they ask that the CAISO provide transparency to the assumptions it uses in its transmission model and market optimization. Second, the IOUs express concern that MRTU's local market power mitigation does not appear to run consistently in market simulation, therefore jeopardizing just and reasonable market outcomes. The IOUs ask that the CAISO demonstrate consistent local market power mitigation runs by the end of February. Third, the IOUs state that they have observed unexpected Residual Unit Commitment prices in market simulation and are concerned that Residual Unit Commitment pricing in MRTU is structurally flawed. Fourth, the IOUs have observed extreme prices and price spikes in both Hour-Ahead Scheduling Process and real-time markets and are expecting explanations of these market simulation outcomes from the CAISO. The IOUs assert that if there are fundamental issues contributing to these extreme outcomes, a MRTU launch delay may be required to resolve the pricing issues.

¹⁷ Six Cities, CMUA, US DOE, Modesto, NCPA, SMUD, SVP, TANC, Turlock and Western.

D. Known Issues and Market Systems Stability

46. The IOUs, Dynegy, J.P. Morgan, and Powerex take the position that the thirteen specific issues the CAISO has listed in Section VIII of its readiness certification must be resolved before MRTU launch. WPTF argues that these issues must be resolved by March 1, 2009, and the CAISO must explain how the issues were resolved. The IOUs also submit that the CAISO has committed to resolve certain IOU-specific issues and that the IOUs will assess progress on those issues by the end of February. The IOUs further comment that the Hour-Ahead Scheduling Process and real-time markets have not consistently run in market simulation. They believe these markets must demonstrate stability before the end of February.

E. Feasible Generation Dispatches and Reliability Must-Run Generation

47. The IOUs and WPTF are concerned that in market simulation, generating units are frequently given infeasible real-time dispatch instructions that are not consistent with their day-ahead awards, their energy limits, or their physical characteristics and capabilities. The IOUs argue that these market simulation issues must be resolved at least one month before MRTU launch. WPTF also points out that in market simulation, some generators have been issued dispatch instructions without first receiving start-up instructions, or have received start-up instructions that are not consistent with the units' minimum run times.

48. WPTF suggests that in cases where the CAISO has recommended that scheduling coordinators adjust their generator capability data to avoid infeasible dispatches, it would be inappropriate to take compliance or enforcement action against the scheduling coordinators. In addition, according to WPTF, its members that are reliability must-run (RMR) contract holders have encountered significant problems with scheduling and settlement of their RMR units. WPTF argues that sufficient testing must be conducted to ensure the issues around RMR units are fully resolved. Mirant and Dynegy also state that they have experienced problems with the dispatch of RMR generating units in market simulation. Mirant asks that the Commission direct the CAISO to implement a workaround for RMR dispatch issues. In its supplemental comments, Mirant commends the CAISO for working to resolve Mirant's issues.

F. Software and Systems Freeze

49. Several commenters¹⁸ state that continuing changes to the CAISO's system and software present challenges to market participants' ability to properly update and verify their systems and processes. The IOUs request that, as of February 6, 2009, the CAISO

¹⁸ IOUs, WPTF, Six Cities, NCPA, CPUC, Powerex, Dynegy, and Calpine.

not change any software codes related to settlements in order to allow the IOUs' vendors necessary time to integrate any updates into the IOUs' systems in time for MRTU launch. Similarly, WPTF argues that the CAISO has not yet resolved open issues and has not "frozen" the MRTU systems.¹⁹ As a result, according to WPTF, its members are unable to finalize their own systems and processes. Consequently, WPTF asks that the Commission direct the CAISO to put in place its formal MRTU system change management process as of March 1, 2009.

50. Six Cities also argue that the on-going software changes so close to the proposed MRTU launch is inconsistent with the MRTU implementation plan agreed to by CAISO and the market participants. In NCPA's view, the CAISO must implement a robust change management process for changes to its systems and processes that impact other CAISO systems or market participants' systems. The CPUC also believes that it is critical that the CAISO adhere to its change management process.

51. Calpine also supports a freeze on changes to critical systems prior to MRTU launch and asks that the only exception to an across-the-board freeze should be for critical variances that are needed for MRTU launch. Dynegy also asks that the CAISO lock down MRTU systems for a minimum of 30 days prior to MRTU launch to ensure that any fixes the CAISO has put in place do not inadvertently affect the CAISO's other systems or market participants' ability to interface with MRTU systems. Powerex states that there are MRTU software issues that are yet to be resolved and will require software modifications in coming months. Powerex asks that the Commission direct the CAISO to provide at least 30 days between making software adjustments and implementing MRTU to ensure the market participants have adequate time to test their systems in market simulation.

G. Pending MRTU-Related Proceedings and Policy Issues

52. The IOUs and Powerex support the CAISO's request that the Commission rule on the open issues pending in various MRTU-related dockets by March 1, 2009. Similarly, WPTF asks that the Commission rule on compensation for exceptional dispatches in MRTU.²⁰

53. Powerex and WPTF believe that given the increase in volumes of transactions cleared in the MRTU markets and the increased potential for defaults, the CAISO's default loss-sharing mechanism must be revised to allocate losses to all market

¹⁹ WPTF Comments at 4.

²⁰ The Commission acted on this issue in *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,150 (2009).

participants, not just creditors. J.P. Morgan shares these concerns and asks the Commission to direct the CAISO to modify CAISO's default allocation methodology. WPTF, Calpine, and J.P. Morgan request that the Commission ensure the expeditious implementation of the CAISO's initiative to accelerate payments under MRTU.

54. Powerex expresses concern with the potential for some market participants to submit day-ahead market bids on interties with no intent or ability to deliver and instead buy back their position in the Hour-Ahead Scheduling Process. Powerex cautions that this form of implicit virtual bidding can create market inefficiencies and requests that until the CAISO implements explicit virtual bidding, the Commission direct the CAISO to put in place provisions to monitor and discourage this type of behavior. WPTF argues that there is ambiguity about the settlement of inter-scheduling coordinator trades in the Hour-Ahead Scheduling Process and requests that the Commission direct the CAISO to remedy this ambiguity by March 1, 2009.

55. Powerex also requests that the Commission direct the CAISO to implement its Business Practice Manual change process as soon as practicable so that expeditious changes to Business Practice Manuals can be implemented, if necessary, before MRTU launch.

56. WPTF requests that the Commission direct the CAISO to convene a stakeholder process to address a number of issues related to MRTU operations at the interties and, unless these issues are resolved in the stakeholder process, convene a technical conference to help resolve them. J.P. Morgan supports the Commission's encouragement of the CAISO's efforts to create and implement improved modeling of generating units in its MRTU software.²¹ J.P. Morgan urges the CAISO to engage with the stakeholders as soon as possible to ensure timely development and implementation of its proposal. Calpine also requests that the CAISO does not delay the implementation of this initiative.

57. SMUD requests that the Commission clarify that the CAISO is not permitted as part of MRTU start-up to implement unapproved and untested provisions for Integrated Balancing Authority Areas (IBAA).²² SMUD notes that no affected IBAA entity is

²¹ J.P. Morgan refers to *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,081, at P 11-12 (2009).

²² IBAA is a Balancing Authority Area that has been determined to have one or more direct interconnections with the CAISO Balancing Authority Area, such that power flows within the IBAA significantly affect power flows within the CAISO Balancing Authority Area, and whose network topology is therefore modeled in further detail in the CAISO's Full Network Model beyond the simple radial modeling of interconnections between the IBAA and the CAISO Balancing Authority Area. MRTU Tariff Appendix A.

willing to accept the terms proposed by the CAISO for market efficiency enhancement agreements (MEEA)²³ and that IBAA pricing remains inchoate. SMUD argues that postponing the IBAA compliance filing will do no harm.

58. SVP states that it is concerned that the CAISO's readiness certification and the IBAA provisions as implemented do not accurately account for real-world power flows between the CAISO and balancing authorities that share the CAISO's northern border. SVP states that the effects of IBAA pricing are still untested and results on prices and reliability of CAISO markets have not been determined in modeling. SVP argues that there are errors involving the CAISO's modeling of transactions on the California-Oregon Transmission Project. SVP states that an interim payment pricing proposal is needed but requires additional consideration.

59. Turlock protests the CAISO's readiness filing to the extent that the CAISO intends to implement procedures for MEEAs and marginal losses prior to the Commission issuing an order on the CAISO's compliance filing and on parties' requests for rehearing.²⁴ Turlock and TANC argue that the CAISO should not proceed with its IBAA proposal until the Commission has ruled on both the IBAA compliance filing and requests for rehearing.

60. TANC protests the readiness certification and argues that there is a lack of operational readiness, necessity and appropriateness for the CAISO's IBAA pricing. TANC requests that the Commission direct the CAISO to defer the IBAA pricing from MRTU launch until such time as the CAISO can demonstrate that IBAA pricing has been robustly tested and is fully functional and will not disrupt markets. TANC argues that the CAISO's failure to complete training of IBAA-affected entities and resolve questionable price results introduces unnecessary reliability risk to MRTU. TANC argues that the IBAA pricing is not essential to the CAISO's initial MRTU operation, and requests that the Commission accept the IBAA pricing subject to refund and subject to the outcome of relevant proceedings.

H. Miscellaneous Issues

61. Commenters identified below raise a number of other issues that they believe must be addressed prior to MRTU launch. NCPA questions the proper functioning and

²³ A MEEA is an agreement between the CAISO and the Balancing Authority of an IBAA, or any entity or group of entities that use the transmission system of an IBAA, which provides for an alternative modeling and pricing arrangement to the default IBAA modeling and pricing provisions provided in section 27.5.3 of the MRTU Tariff. *Id.*

²⁴ Turlock refers to the proceeding in Docket No. Docket No. ER08-1113.

integration of the various MRTU systems. NCPA does not challenge the results of third party evaluations of individual components of MRTU; however, NCPA is concerned about the overall functioning of MRTU. For example, NCPA states that it has experienced situations in market simulation where its awarded ancillary services correctly appear in market result systems, but are not reflected in settlement systems. NCPA argues that there are still certain MRTU component systems that have not been certified as working correctly and may not be fully tested or completed prior to MRTU launch.

62. NCPA also states that it has serious concerns about the impact of MRTU market optimization parameters on NCPA's ability to self-schedule and self-provide its own resources to meet its own load. NCPA has experienced instances where its self-schedules have been cut in market simulation and believes other market participants have experienced similar issues. NCPA provides other examples of market simulation outcomes where MRTU market optimization parameter settings have resulted in outcomes inconsistent with the MRTU Tariff.

63. WPTF raises a number of other specific issues it believes need resolution by March 1, 2009. Specifically, WPTF argues that settlement charge codes for bid cost recovery have not been implemented, and the CAISO's automated programmatic interface for downloading data exhibits problems. WPTF also states that the quantities of physical inter-scheduling coordinator trades do not consistently match up with the corresponding financial settlement. Also, according to WPTF, the CAISO systems do not allow scheduling coordinators to reduce their day-ahead import self-schedules in Hour-Ahead Scheduling Process or in real-time, and the CAISO's proposed fix is being implemented too close to MRTU launch to allow for testing and verification.

64. WPTF further states that it is also concerned that in some instances, scheduling coordinators have had access to other scheduling coordinators' data in market simulation and that, if not corrected, this may continue after MRTU launch. Moreover, WPTF expresses concern that in market simulation, there have been instances when self-schedules have not been awarded or have been awarded incorrectly. Dynegy also states that it has observed instances where its self-schedules did not appear in market simulation results published by the CAISO. WPTF requests that the Commission direct the CAISO to disclose fully the nature of this problem and describe what will resolve it.

65. Calpine states that it expects that the volume of voice communication with the CAISO's control center will be very high during MRTU start-up. Therefore, Calpine urges the Commission to direct the CAISO to review its control center communication systems to ensure that every call to the CAISO's grid operations staff is logged, assessed, and receives prompt attention, and that no communication regarding infeasible or inappropriate generator dispatch instruction or settlement issue goes unaddressed.

66. Western states that it is concerned that implementation issues, such as how the CAISO will honor Western's Transmission Exchange Agreement and self provision of ancillary services, remain unresolved.

67. The IOUs support the creation of a CAISO rapid response team to address any post-MRTU market issues. However they are concerned that little information has been shared with the market participants regarding the rapid response team. The IOUs therefore request that the team conduct simulation drills prior to MRTU go-live and that the drills be observed, and performance assessed, by the Commission

V. The CAISO Answer

68. In its answer, the CAISO states that it has either resolved, or is on track to resolve, the potential impediments to MRTU. According to the CAISO, recent settlement statements have improved substantially, anomalously high prices have been explained, and MRTU software systems have been stable. The CAISO states that it is now producing settlement statements that have correct quantities, prices, and charges. The CAISO disagrees that the benchmark for quality of settlement statements is the reasonableness of charges. The CAISO argues that unrealistically high settlement charges in market simulation have been the result of the market simulation environment, including: software errors that have since been fixed; market participants' bidding and scheduling behavior; and simulation scenarios that include large demand and supply deviations.

69. With regard to high prices observed in market simulation, the CAISO points to the analysis conducted by the Department of Market Monitoring²⁵ that found the vast majority of prices to be reasonable. The CAISO expects that anomalous high prices will be an infrequent occurrence under MRTU and if they do occur, the CAISO has tariff authority to validate and correct prices. Therefore, the CAISO believes that CMUA's interim payment mechanism proposal is unnecessary and would require substantial effort to address an issue that is not expected to materialize.

70. The CAISO argues that some of the operational and software related issues of concern to the stakeholders are already included in the CAISO's list of 13 known issues that must be resolved before MRTU launch. The CAISO says that it will work with market participants to determine if any other issues must be added to the list and resolved before MRTU launch, and whether some issues can be resolved after MRTU start. The CAISO states that it has, and will, conduct operational tests on generating resources to verify the proper functioning and connectivity between the energy management system and MRTU systems. The CAISO states that with a few exceptions, MRTU systems have

²⁵ CAISO Transmittal Letter, Att. 9.

been stable and any interruptions will be minimized after March 1, 2009, when the CAISO limits any software updates to only those essential for MRTU go-live.

71. The CAISO reiterates that its Department of Market Monitoring is capable of monitoring market performance and has the tools to oversee the performance of MRTU markets. In addition, according to the CAISO, it will have around-the-clock staffing for as long as necessary after MRTU launch to monitor prices and generation dispatches, and will seek to identify problems before they impact markets or settlements. The CAISO believes that it is not necessary for its proposed rapid response team to conduct drills subject to observation as it would serve no purpose and would be a distraction to the CAISO and market participants.

72. The CAISO asks that the Commission reject arguments in favor of delaying the implementation of IBAA provisions. The CAISO states that it plans to offer training with special focus on IBAA and that it will update its business practices manuals with IBAA discussion no later than mid-March, 2009. The CAISO further argues that the locational marginal prices for IBAA transactions are consistent with the Commission order addressing the IBAA provisions²⁶ and, as the Commission has determined, IBAA should be implemented simultaneous with the start of MRTU.

VI. Discussion

A. Procedural Matters

73. Given the lack of undue prejudice or delay and J.P. Morgan's interest in this proceeding, we find good cause to grant under Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2008), J.P. Morgan's unopposed, untimely motion to intervene. We also accept GSWC's comments filed out of time. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2008), prohibits answers to protests and answers unless otherwise ordered by the decisional authority. We accept the CAISO's answer to the protests because it has assisted us in the decision-making process. We, however, are not persuaded to allow TANC's answer to the CAISO's answer.

B. Commission Determination

74. Since 2006, when the CAISO initially filed its MRTU Tariff, the Commission has issued a series of orders addressing the various facets of MRTU operation. The readiness certification required by prior Commission orders is an informational filing to advise the

²⁶ *Cal. Indep. Sys. Operator Corp.*, 124 FERC ¶ 61,271 (2008) (IBAA Order).

Commission on the status of CAISO's software development and the ability of market participants to operate with it.

75. In its readiness certification, the CAISO asserts that it is confident that MRTU can be launched on March 31, 2009. However, the CAISO sets forth a number of milestones that it intends to meet and a number of specific known issues that need to be resolved before MRTU can be launched successfully. In addition, the CAISO expects to receive an audit opinion from PricewaterhouseCoopers confirming that MRTU settlements and market clearing software calculates quantities and prices in compliance with the MRTU Tariff. The CAISO also plans to address any outstanding software and system variances and, effective February 1, 2009, fix only critical variances that are needed for MRTU launch and that do not affect market participants' systems. The CAISO states that after March 1, 2009, if any major variances are found, the CAISO will notify the Commission and work with market participants to correct them.²⁷ To this end, the CAISO identifies 13 known issues that it states require resolution before MRTU launch. Also, the CAISO intends to conduct a market participant readiness survey in February to determine whether 80 percent of active market participants are ready for a March 31, 2009, MRTU launch. Finally, according to the CAISO, there are a number of pre-production and cut-over activities that must be successfully completed leading up to MRTU launch.

76. The Commission has provided the CAISO the tools it requested to ensure an orderly transition to MRTU and to revert to the currently effective tariff should it need to do so. In addition, the CAISO has market monitoring and mitigation, price cap and floor, and the Exceptional Dispatch mechanism available to it and will establish a rapid response team to address any issues arising after the MRTU launch. As such, we accept the CAISO's informational filing on MRTU readiness and the CAISO's commitments to achieve the milestones and satisfactorily resolve the issues it has identified in the readiness certification. The CAISO is in the best position to evaluate its systems and assess the concerns of its customers and market participants in making the decision to launch MRTU.

77. To the extent necessary, we clarify that upon MRTU launch the CAISO markets will operate pursuant to the MRTU Tariff and Business Practice Manuals, and that if system deficiencies produce outcomes inconsistent with the MRTU Tariff, the CAISO will remedy the situation.

78. With regard to the commenters' concerns about erroneous settlement statements and requests for protection against anomalous pricing results, we encourage the parties to work with the CAISO to ensure that unexpected settlements observed in market simulation are not related to either extreme scenario testing, nor missing or incorrect data

²⁷ CAISO Transmittal Letter at 15.

inputs. We accept the CAISO's commitment to institute a monitoring process to assess, prior to any charges appearing on a settlement statement, whether a scheduling coordinator's market liabilities are accruing at a rate in excess of the rate over a comparable time period under the current CAISO tariff. The CAISO further commits that it will contact the scheduling coordinator if this occurs.²⁸ In addition, we direct the CAISO to provide the market participants with more information regarding the process by which the CAISO's proposed rapid response team will identify and address situations where a market participant may be incurring liabilities at an excessive rate. If after the launch of MRTU the CAISO and the market participants believe additional measures are needed to protect against undue and inadvertent financial distress, we encourage them to vet any proposals through the CAISO stakeholder process and file the proposal with the Commission.

79. In regard to CMUA's proposed one-year interim payment protection mechanism, we note that on March 4, 2009, in Docket No. EL09-38-000, CMUA, jointly with other parties,²⁹ filed a complaint seeking to revise the MRTU Tariff to introduce the same payment protection mechanism that CMUA proposes in its comments to the instant filing. In a monthly report filed on March 5, 2009,³⁰ the CAISO stated that it had investigated the issues pertaining to incorrect MRTU invoices, resolved significant software issues, and is confident that the MRTU systems are stable, correct and ready for MRTU launch. The CAISO also commits to monitor daily MRTU market results to avoid the accrual of potentially high liabilities prior to the normal settlement process.³¹ In addition, as stated above, the CAISO has numerous mechanisms in place to ensure proper functioning of the MRTU market including market monitoring and mitigation, bid caps, price cap and floor, and the Exceptional Dispatch mechanism, and will establish a rapid response team to address any issues arising after the MRTU launch. To the extent that CMUA's complaint raises issues that are not addressed by the CAISO in its monthly report, such issues and CMUA's proposed payment protection mechanism will be addressed in the Docket No. EL09-38-000 proceeding.

80. A number of parties express concerns about IBAA provisions of MRTU Tariff and whether MRTU should be implemented while there are pending IBAA-related issues

²⁸ See CAISO Transmittal Letter at 13.

²⁹ Six Cities, the City and County of San Francisco, NCPA, SMUD, Modesto, and TANC.

³⁰ The CAISO files monthly reports concerning the progress in designing and implementing MRTU in compliance with MRTU Order, 116 FERC ¶ 61,274 at P 1415.

³¹ The CAISO's March 5, 2009 MRTU Monthly Report, at 4-5.

before the Commission. In September 2008, the Commission conditionally accepted, subject to further modifications, the CAISO's proposal to establish an IBAA and to apply it to model and price export and import transactions with the SMUD and Turlock balancing authority areas, effective on the start date of MRTU.³² Subsequently, the CAISO filed a compliance filing, as directed. Also, certain parties requested rehearing of the IBAA Order. We reject the commenters' arguments challenging specific features of the IBAA proposal as misplaced because some of these issues have been addressed by the Commission in its consideration of the CAISO's compliance filing,³³ and other issues are currently pending before the Commission on rehearing.

81. With regard to TANC's concern that the CAISO has not provided sufficient training regarding IBAA pricing and has not explained questionable pricing results, we direct the CAISO to offer training on IBAA implementation to the market participants prior to the implementation of IBAA. Moreover, we also note that in both numerous stakeholder meetings and in written comments, the CAISO has explained questionable pricing results. The CAISO has already addressed a number of the anomalous pricing results either by explaining the cause of the anomalous pricing (e.g., it resulted from factors endemic to the simulation environment) or by taking steps to correct software flaws that may have contributed to those results. The CAISO has also committed to address the small number of remaining problems between now and the launch of MRTU, as well as to use its tariff authority to quickly validate and correct prices after the launch of MRTU, and we expect the CAISO to follow through on these commitments.

82. Several commenters propose enhancements and improvements to the MRTU Tariff or request that the CAISO accelerate existing stakeholder processes or initiate new ones. For example, Powerex and WPTF request changes to the CAISO's credit policy. WPTF, Calpine, and J.P Morgan ask the Commission to ensure that the CAISO's initiative to accelerate payments under MRTU is implemented quickly after the launch of MRTU. Calpine and J.P. Morgan argue in favor of improvements in the CAISO's generator modeling in MRTU. The requested revisions to the CAISO's credit policy are pending before the Commission in Docket No. ER09-589 and are appropriately addressed in that proceeding. With regard to requests for other MRTU enhancements, we encourage the parties and the CAISO to consider any enhancements to MRTU that benefit the market and propose tariff modifications as appropriate, but intervenors have not demonstrated that these issues must be resolved before the launch of MRTU. Thus, we will not address the commenters' specific requests in the context of this filing as they are beyond the scope of the CAISO's MRTU readiness certification.

³² CAISO Transmittal Letter at 13.

³³ See *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,207 (2009).

83. Finally, the CAISO and several parties ask that the Commission act on six pending CAISO filings associated with MRTU-related tariff proposals in advance of the launch of MRTU so as to reduce regulatory uncertainty for both the CAISO and the market participants. The CAISO also requests that the Commission act on tariff revisions related to payments to resources that receive exceptional dispatch instructions. We note that with this order and the contemporaneously-issued order on the IBAA compliance filing, the Commission has already acted on five of the six CAISO filings identified as unresolved by the CAISO and some commenters, and in the one remaining case the Commission was still receiving pleadings from the parties as recently as February 26.³⁴

The Commission orders:

The CAISO's MRTU readiness certification is hereby accepted as discussed in the body of this order.

By the Commission. Commissioner Kelliher is not participating.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

³⁴ See *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,089 (2009); *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,082 (2009); *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,081 (2009); and *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,165 (2009); *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,148 (2009) *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,147 (2009). The one remaining case of the six that is still pending is the CAISO's tariff clean-up filing on miscellaneous MRTU tariff clarifications in Docket No. ER09-556-000.

Document Content(s)

20117917.DOC.....1-23