

131 FERC ¶ 61,280
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Marc Spitzer, Philip D. Moeller,
and John R. Norris.

California Independent System Operator Corporation Docket Nos. ER10-500-000
ER10-500-001

ORDER ACCEPTING AND SUSPENDING TARIFF REVISION, SUBJECT TO
COMPLIANCE FILING AND FURTHER COMMISSION ORDER

(Issued June 29, 2010)

1. On December 24, 2009, the California Independent System Operator Corporation (CAISO) filed its proposed open access transmission tariff (CAISO Tariff) revisions to implement a Scarcity Reserve Pricing Mechanism (Scarcity Pricing Mechanism)¹ pursuant to section 205 of the Federal Power Act (FPA)² and Part 35 of the Commission's regulations.³ As proposed by CAISO, the Scarcity Pricing Mechanism will apply in the day-ahead and real-time markets to the procurement of regulation up,⁴ regulation down,⁵ spinning reserve, and non-spinning reserve.⁶ As proposed, the

¹ CAISO December 24, 2009 Tariff Amendment to Implement Scarcity Reserve Pricing in Docket No. ER10-500-000 (CAISO Filing).

² 16 U.S.C. § 824d (2006).

³ 18 C.F.R. Part 35 (2010).

⁴ Regulation provided by a resource that can increase its actual operating level in response to a direct electronic (AGC) signal from CAISO to maintain standard frequency in accordance with established reliability criteria.

⁵ Regulation reserve provided by a resource that can decrease its actual operating level in response to a direct electronic (AGC) signal from CAISO to maintain standard frequency in accordance with established reliability criteria.

⁶ The Scarcity Pricing Mechanism covers both the System Region (the CAISO balancing authority area), and the Expanded System Region (the System Region and the

(continued...)

Scarcity Pricing Mechanism is an administrative mechanism that, during periods of operating reserve shortages, applies pre-determined prices to energy and ancillary services to more accurately reflect their value in such an emergency. As discussed below, we accept the revised tariff sheets establishing the Scarcity Pricing Mechanism, suspend their proposed effectiveness for five months from the date of this order, to become effective November 29, 2010, subject to a compliance filing and a further Commission order.

I. Background

2. In September 2006, the Commission directed CAISO to “develop a reserve shortage scarcity pricing mechanism that applies administratively-determined graduated prices to various levels of reserve shortage” within 12 months following the start of the Market Redesign Technology Upgrade (MRTU).⁷ In Order No. 719, the Commission established reforms to remove barriers to demand response by requiring regional transmission organizations (RTOs) and independent system operators (ISOs) to reform their market rules in such a way that prices during operating reserve shortages more accurately reflect the value of energy during such shortages.⁸

3. In the MRTU Rehearing Order, the Commission stated that prices during periods of scarcity should be allowed to rise according to a pre-determined administratively set demand curve and not on the basis of submitted bids.⁹ The Commission further provided that CAISO’s scarcity pricing proposal should ensure that prices are not inappropriately suppressed during periods of genuine scarcity.¹⁰ Finally, the Commission directed that,

intertie scheduling points with adjacent balancing authority areas). CAISO considers its “System Region,” or its footprint minus the interties, a sub-region for the purposes of this proposal. For simplicity, we will only refer to “sub-regions” in this order, but we note that the term does include the System Region.

⁷ *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 1078-79 (2006) (MRTU Order), *order on reh’g*, 119 FERC ¶ 61,076 (2007) (MRTU Rehearing Order), *order on reh’g and denying motion to reopen record*, 120 FERC ¶ 61,271 (2007).

⁸ *Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, FERC Stats. & Regs. ¶ 31,281 (2008) (Order No. 719), *order on reh’g*, Order No. 719-A, 74 Fed. Reg. 37,776 (July 29, 2009), FERC Stats. & Regs. ¶ 31,292 (2009), *reh’g denied*, Order No. 719-B, 129 FERC ¶ 61,252 (2009).

⁹ MRTU Rehearing Order, 119 FERC ¶ 61,076 at P 518.

¹⁰ MRTU Order, 116 FERC ¶ 61,274 at P 1078.

in the event a shortage occurs, prices should reflect the economic value of the reserves necessary to resolve the shortage. Thus, the prices for both reserves and energy should increase automatically with the severity of the shortage.¹¹

4. In response to CAISO's Filing, the Commission issued a deficiency letter on March 31, 2010 (Deficiency Letter). On April 30, 2010, CAISO filed its response to the Deficiency Letter that included CAISO Tariff revisions (CAISO Response). Therein, CAISO requested a June 29, 2010 action date and a July 7, 2010 effective date.

II. Proposal

5. CAISO's proposed Scarcity Pricing Mechanism will apply when supply is insufficient to meet any of CAISO's ancillary service procurement requirements within an ancillary service region or sub-region. As proposed, the scarcity demand curves will clear the ancillary services market with administratively-determined prices and will apply in the region or sub-region in which the shortage occurs.¹² Under CAISO's proposal, the price for a higher-quality ancillary service that can substitute for another ancillary service will always be higher than the price for a lower-quality ancillary service.¹³ CAISO proposes to review the Scarcity Pricing Mechanism at least every three years.¹⁴

6. For regulation down, CAISO proposes to adopt a tiered demand curve that applies to the Expanded System Region with values that increase with the levels of shortage.¹⁵ The demand curve values for regulation down are a percentage of the applicable maximum energy bid price. The proposed demand curve values for each tier are based on the maximum ancillary services bids in 2006 and 2007. In all cases, CAISO points out that these values reflect ancillary service marginal prices that are higher than the current maximum ancillary service bid price.¹⁶ In the CAISO Response, CAISO

¹¹ *Id.* P 1079.

¹² CAISO Filing at 3.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *See* proposed section 27.1.2.3.1 of the CAISO Tariff.

¹⁶ CAISO Filing at 4.

proposes to apply a demand curve, 25 percent of the maximum energy bid price, to an ancillary services sub-region for regulation down.¹⁷

7. For non-spinning reserve, CAISO proposes a tiered demand curve that applies to the Expanded System Region with values that increase with the levels of shortage.¹⁸ CAISO's proposed demand curve values for non-spinning reserve are a percentage of the applicable maximum energy bid price and are based on the maximum ancillary services bids in 2006 and 2007. In all cases, CAISO points out that these values reflect ancillary service marginal prices that are higher than the existing maximum ancillary service bid price. When non-spinning reserve is scarce within an ancillary service sub-region, including the System Region, CAISO proposes an additional demand curve value of 25 percent of the maximum energy bid price.¹⁹

8. For spinning reserve, CAISO proposes a single demand curve value of 10 percent of the maximum energy bid price that applies to the Expanded System Region. When spinning reserve is scarce within an ancillary service sub-region, including the System Region, CAISO proposes to apply an additional demand curve value of 10 percent of the maximum energy bid price.²⁰

9. For regulation up, CAISO proposes a single demand curve value of 20 percent of the maximum energy bid price that applies to the Expanded System Region. When regulation up is scarce within an ancillary service sub-region, including the System Region, CAISO proposes to apply an additional demand curve value of 10 percent of the maximum energy bid price.²¹

10. CAISO proposes that the maximum scarcity price in the Expanded System Region equal the maximum energy bid price. As proposed, when supplies of all reserves are short in the Expanded System Region and a sub-region, the scarcity price may rise to 145 percent of maximum energy bid price. In order to ensure that both ancillary service and energy prices rise as the severity of a shortage increases, CAISO proposes that the

¹⁷ CAISO Response at 12-13.

¹⁸ See proposed section 27.1.2.3.2 of the CAISO Tariff.

¹⁹ CAISO Filing at 5.

²⁰ *Id.*

²¹ *Id.*

locational marginal prices for energy reflect the foregone opportunity cost of the marginal resource, if any, for not providing the scarce ancillary services.²²

III. Notice, Intervention, and Responsive Pleadings

11. Notice of the proposed CAISO Tariff revisions was published in the *Federal Register*, 75 Fed. Reg. 354 (2010), with motions to intervene, comments, and protests due on or before January 14, 2010. Timely motions to intervene, comments, and/or protests were filed by the following: (1) Mirant Energy Trading, LLC, Mirant Delta, LLC and Mirant Potrero, LLC; (2) Modesto Irrigation District; (3) Cogeneration Association of California; (4) Northern California Power Agency; (5) Cities of Anaheim, Azusa, Banning, Colton, Pasadena and Riverside California; (6) J.P. Morgan Ventures Energy Corporation and BE CA LLC (J.P. Morgan); (7) Dynegy Morro Bay, LLC, Dynegy Moss Landing, LLC, Dynegy Oakland, LLC, and Dynegy South Bay, LLC, (Dynegy); (8) Golden State Water Company; (9) California Department of Water Resources State Water Project (SWP); (10) Powerex Corporation; (11) San Diego Gas and Electric Company (SDG&E); (12) Southern California Edison Company; (13) Western Power Trading Forum (WPTF); (14) NRG Power Marketing LLC, Cabrillo Power I LLC, Cabrillo Power II LLC, El Segundo Power LLC, and Long Beach Generation LLC; (15) Pacific Gas and Electric Company (PG&E); (16) City of Santa Clara, California and the M-S-R Public Power Agency; (17) California Municipal Utilities Association; (18) Sacramento Municipal Utility District; (19) DC Energy, LLC; and (20) Energy Producers and Users Coalition. A notice of intervention and comments were filed by the California Public Utilities Commission (CPUC).

12. CAISO filed an answer in response to WPTF and Dynegy. PG&E filed an answer in response to WPTF.

13. The CAISO Response was a timely response to the Deficiency Letter. WPTF, J.P. Morgan, and SoCal Edison filed comments to the CAISO Response. CAISO filed an answer to SoCal Edison's comments.

IV. Discussion

A. Procedural Matters

14. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2010), the timely, unopposed motions and notices to intervene serve to make the entities that filed them parties to this proceeding. Rule 213(a)(2) of the

²² *Id.* at 6.

Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2010), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We are not persuaded to accept the CAISO answer in response to WPTF and Dynegy, the PG&E answer in response to WPTF, and the CAISO answer in response to SoCal Edison and will, therefore, reject them.

B. Substantive Matters

15. Below are the Commission's discussion and findings that primarily address aspects of CAISO's proposal that have been contested by various commenters. With respect to the proposed CAISO Tariff sheets that are not contested and not specifically discussed herein, we find that they are just and reasonable and will accept them for filing and suspend their effectiveness for five months, subject to a compliance filing and further Commission order.

1. Demand Curve Levels

a. Comments

16. WPTF and J.P. Morgan object to CAISO's proposal to apply lower scarcity prices to the sub-regions than the Expanded System Region. Both parties assert that establishing lower scarcity prices for sub-regional shortages sends a poor price signal to would-be suppliers of reserves and to potential generation and demand response investors. In addition, WPTF and J.P. Morgan dispute CAISO's claim that the applicable reliability standard governing system-wide reserve requirements is more important, and thus results in more valuable ancillary services procurement, than the applicable reliability standard governing the dispersion of ancillary services within CAISO's footprint. Therefore, both parties assert that sub-regional scarcity prices should equal Expanded System Region scarcity prices.

17. WPTF and J.P. Morgan disagree with CAISO's position that a failure to meet sub-regional reserve requirements is not a violation of either the North American Electric Reliability Corporation (NERC) or the Western Electric Coordinating Council (WECC) reliability standards. WPTF argues that NERC Standard TOP-002-2 (Normal Operations Planning), Requirement 7, requires each balancing authority to meet its reserve requirements, including a requirement that reserves be deliverable.²³

18. WPTF notes that, while Requirement 7 of NERC Standard TOP-002-2 does not expressly require balancing authorities to "disperse" reserves, it does require that reserves

²³ WPTF January 14, 2010 Comments at 4 (WPTF Comments).

be deliverable.²⁴ WPTF contends that this requirement means that reserves must be carried on capacity that is located within the CAISO grid such that the energy can be fully called upon from those reserves without creating or exacerbating other problems, such as transmission overloads. WPTF asserts that, if the energy from certain reserve capacity cannot be fully deployed without creating other problems, then it is inappropriate for CAISO to count on the full amount of that reserve capacity to meet its reserve obligations. J.P. Morgan asserts that the fact that NERC/WECC does not require CAISO to maintain certain levels of reserves within a sub-region does not diminish the need to ensure that reserves are accessible and that a drop in reserves in a sub-region may compromise CAISO's ability to respond to contingencies across the system, let alone within that sub-region.²⁵

19. WPTF argues that the failure to maintain sufficient reserves in a local area is no less of a threat to reliability than a failure to maintain sufficient reserves in the CAISO balancing authority area, as demonstrated by the events of August 25, 2005 – the only day in which CAISO shed firm load in the last five years. On that day, WPTF contends that CAISO maintained sufficient reserves on a balancing area-wide basis but did not have sufficient deliverable operating reserves south of Path 26, a transmission path in southern California. WPTF states that, consequently, the largest CAISO firm load shedding event in the last five years was due to a local, not a system-wide, shortfall in ancillary services.²⁶

20. WPTF argues that the reasonableness of CAISO's assertion that failure to meet sub-regional ancillary services requirements is "...less of a threat to system reliability as compared to a scarcity condition in the [E]xpanded [S]ystem [R]egion" depends on the definition of the term "system reliability."²⁷ According to WPTF, CAISO's assertion can only be reasonable if the phrase "system reliability" means "the chance that a particular demand will be curtailed."²⁸ However, WPTF points out that the CAISO Tariff defines "system reliability" as "[a] measure of an electric system's ability to deliver uninterrupted service at the proper voltage and frequency."²⁹ Therefore, WPTF asserts that CAISO's

²⁴ *Id.*

²⁵ J.P. Morgan January 14, 2010 Comments at 7 (J.P. Morgan Comments).

²⁶ WPTF Comments at 5.

²⁷ *Id.* at 5-6.

²⁸ *Id.* at 6.

²⁹ *Id.*

own definition of “system reliability” does not differentiate between load located anywhere within CAISO’s balancing authority area and load in a particular sub-region.

21. WPTF argues that the failure to maintain sufficient reserves at any location within the CAISO balancing authority area puts CAISO’s ability to deliver uninterrupted service to load at risk. WPTF explains that the only difference between a sub-regional reserve shortfall and a CAISO-wide reserve shortfall is that a sub-regional reserve shortfall puts only load within that local area at risk, while the failure to maintain sufficient reserves within the balancing authority area puts all load within the balancing authority area at risk, albeit arguably at lesser risk, because the pool of load which could be curtailed to alleviate the reserve shortfall is larger. Thus, WPTF contends that, from the standpoint of an end-use load within a particular sub-region, a reserve shortfall in that sub-region could be viewed as a greater threat to reliability (i.e., its continuity of service) than a CAISO-wide reserve shortfall because that shortfall can only be cured by curtailing load within that local area, thereby increasing the likelihood that it will be interrupted.³⁰ Therefore, WPTF contends that sub-regional ancillary service shortfalls should send the same price signal in that sub-region as a CAISO-wide ancillary service shortfall sends to the entire region.

22. WPTF explains that in California there are few events that would transparently signal the need for capacity or additional demand response in a sub-region. According to WPTF, Reliability Must-Run (RMR) units address local area reliability needs, but the value of the products provided by RMR units are not transparent or market-based. WPTF points out that CPUC has adopted local area capacity requirements within its resource adequacy program. Finally, WPTF argues that CAISO’s energy and ancillary service markets do not send fully transparent and reliable price signals regarding the value of locational reserves. WPTF states that, by its own admission, CAISO uses exceptional dispatch to meet sub-regional capacity needs not met by RMR units because many, if not most, local capacity requirements, especially those resulting from transmission outages, are not modeled in CAISO’s full network model underlying its market software.³¹

23. WPTF argues that whether CAISO’s ancillary services markets will send meaningful sub-regional price signals depends not only on the sub-regional prices but also on the extent to which CAISO engages in sub-regional ancillary services procurement. WPTF notes that, to date, CAISO has not even procured reserves in SP-26³² separately to address the Path 26 issue that caused load shedding on August 25,

³⁰ *Id.*

³¹ *Id.* at 7.

³² SP-26 is a sub-region in southern California.

2005 because it does not model the effects of losing the Pacific DC Intertie in its network model. While neither the Commission nor market participants can control whether CAISO procures reserves on a sub-regional basis, WPTF states that the Commission can ensure that, if it does, CAISO's sub-regional scarcity prices have the same effect as its system-wide scarcity prices.³³

24. WPTF states that CAISO's Market Surveillance Committee questions CAISO's assertion that sub-regional scarcity prices should be lower than system-wide scarcity prices.³⁴ WPTF points out that scarcity prices are not based on the value of lost load (as the Market Surveillance Committee suggests) but on a percentage of the bid cap in effect. WPTF asserts that, if scarcity prices were based on the value of lost load, they would almost certainly be higher. Further, WPTF argues that, regardless of the basis for the proposed scarcity prices, CAISO has not justified why sub-regional scarcity prices should be different than system-wide scarcity prices.³⁵

25. In order to elicit both the appropriate short-term response to scarcity (i.e., to make additional resources available in real-time) and the long-term response to scarcity (i.e., encourage new entry of generation and demand resources), J.P. Morgan states that CAISO needs to establish location-sensitive prices. J.P. Morgan recommends that CAISO establish scarcity prices that establish comparable incentives for resources to respond to locational needs.³⁶

26. J.P. Morgan states that it is imperative that CAISO establish locational price signals to guide short-term operating and long-term investment decisions that will address locational needs. J.P. Morgan claims that one of those needs is the appropriate dispersion of operating reserves. J.P. Morgan states that establishing a lower scarcity price for reserve shortages in sub-regions sends the wrong signal to resource operators and investors. J.P. Morgan cautions CAISO and the Commission against establishing lower sub-regional scarcity prices while continuing to permit CAISO to rely on non-

³³ WPTF Comments at 7.

³⁴ See *December 2, 2009 Final Opinion on Reserve Scarcity Pricing Design* (Market Surveillance Committee Opinion) at 5, available at <http://www.caiso.com/2478/247894ab1efc0.pdf>.

³⁵ WPTF Comments at 8. Dynegy agrees with WPTF and argues that sub-regional prices should be the same as system-wide prices. Dynegy January 14, 2010 Comments at 2.

³⁶ J.P. Morgan Comments at 5-6.

market and opaque measures such as exceptional dispatch to address sub-regional capacity requirements. J.P. Morgan states that, while CAISO could have addressed these requirements by procuring more operating reserves in those areas, it chose not to. J.P. Morgan posits that CAISO may want to reconsider addressing such needs by supplementing the amount of system reserves dispersed to such areas and ensuring that the potential scarcity prices available to those that provide such reserves are set at a level commensurate with their locational value.³⁷

27. While J.P. Morgan recommends that the Commission direct CAISO to establish scarcity prices for sub-regions equal to those used for the Expanded System Region, if the Commission elects not to do so, J.P. Morgan asks the Commission to consider permitting CAISO to incorporate provisions comparable to those included in the New York Independent System Operator, Inc. (NYISO) open access transmission tariff (NYISO Tariff). J.P. Morgan notes that the NYISO Tariff contains provisions that allow NYISO operators to establish prices different than those specified by the operating reserve demand curves in order to avoid a reliability problem.³⁸ However, as an alternative to the authority granted to the NYISO to apply a different price (presumably either an increase or a decrease), J.P. Morgan recommends that CAISO be only able to increase the price of scarcity prices.³⁹ J.P. Morgan is concerned that the application of any lower price during these conditions (i.e., a reliability event) may obviate any incentive that resources would have to respond.

b. Responses Following the Deficiency Letter

28. In the Deficiency Letter, the Commission asked the following:

The CAISO proposes to apply lower scarcity prices to the sub-regions than the Expanded System Region. It justifies lower sub-regional scarcity prices based upon its interpretation of the applicable reliability standards.⁴⁰ Please explain how these standards justify the application of lower

³⁷ *Id.* at 8-9.

³⁸ *Id.* at 9.

³⁹ *Id.* at 10.

⁴⁰ Deficiency Letter at 2 (citing CAISO Filing at 10).

scarcity prices to the sub-regions than the Expanded System Region.⁴¹

29. In response, CAISO reiterates that WECC STD-BAL-002-0 requires CAISO to meet minimum reserve margin requirements for the Expanded System Region, but not for the sub-regions, therefore justifying the higher Expanded System Region scarcity prices. CAISO elaborates that ISO New England, Inc. (ISO-NE) and NYISO use similar approaches, applying different zonal pricing parameters than they apply to their regions.⁴²

30. J.P. Morgan reiterates its earlier position that CAISO apply the same scarcity premiums regardless of whether the shortages are in the CAISO Expanded System Region or in CAISO's defined ancillary services sub-regions.⁴³ Similarly, WPTF restates its position that CAISO not discriminate between sub-regional scarcity prices and Expanded System Region scarcity prices.⁴⁴ Both WPTF and J.P. Morgan note that NERC Standard TOP-002-2, Requirement 7 mandates that CAISO must ensure that reserves are deliverable within its control area and that such a requirement justifies the application of the same scarcity prices in sub-regions as is applied to the Expanded System Region.

31. In addition, the Commission asked the following:

The CAISO explains why the scarcity prices contained in the Expanded System Region provide adequate price signals for customers to invest in generation and demand response technologies and for customers to participate in the CAISO's markets. Explain how the lower sub-regional scarcity prices provide adequate price signals for customers to invest in generation and demand response technologies and to participate in the markets.⁴⁵

⁴¹ Deficiency Letter at 2.

⁴² CAISO Response at 3-5.

⁴³ J.P. Morgan May 21, 2010 Response at 6-10 (J.P. Morgan Response).

⁴⁴ WPTF May 21, 2010 Response at 2-5.

⁴⁵ Deficiency Letter at 3.

32. CAISO responds that scarcity pricing will not result in a lower sub-regional scarcity ancillary service marginal price. CAISO explains that the ancillary service marginal price in an ancillary service sub-region will rise above the ancillary service marginal price in the Expanded System Region, if a shortage condition exists in both. According to CAISO, if a shortage condition exists only in the Expanded System Region and a sub-regional constraint is also binding, requiring CAISO to procure ancillary services on a sub-regional basis, then the value for a scarce ancillary service in an ancillary service sub-region also will rise above the scarcity value in the Expanded System Region.⁴⁶

33. CAISO states that the proposed scarcity demand reserve values for the ancillary service sub-regions create significant ancillary service premiums when there is insufficient supply. Specifically, CAISO explains that, during the time that the maximum energy bid price is \$750/MWh (i.e., until March 31, 2011), if a scarcity condition arises in an ancillary service sub-region, then ancillary service marginal prices for non-spinning reserve, spinning reserve, and regulation service could immediately rise as high as \$188, \$263, and \$338 above the ancillary service marginal prices of non-spinning reserve, spinning reserve, and regulation service in the Expanded System Region respectively. CAISO explains that, during the time that the maximum energy bid price increases to \$1,000/MWh (i.e., after March 31, 2011), these ancillary service marginal prices could rise to \$250, \$350, and \$450 above the ancillary service marginal prices in the Expanded System Region, respectively. Thus, CAISO asserts that new resources will likely choose the sub-regions, where scarcity conditions are more likely to occur, when deciding where to invest in generation resources and demand response technologies, or when deciding where to participate in the CAISO market. Moreover, based on its review of bid data that predates the new CAISO market that went into effect on March 31, 2009, CAISO contends that these premiums should be sufficient to provide adequate price signals for new investments and market participation.⁴⁷

34. Finally, the Commission asked the following:

Please justify the omission of a demand curve for sub-regional regulation down service. Explain why a shortage of regulation down on a sub-regional basis is not possible. If sub-regional shortage conditions are possible, explain why a sub-regional demand curve is not appropriate.⁴⁸

⁴⁶ CAISO Response at 10.

⁴⁷ *Id.* at 11.

⁴⁸ Deficiency Letter at 3.

35. In response, CAISO proposes a sub-regional curve for regulation down. CAISO states that the sub-regional demand curve will be 25 percent of the maximum energy bid price.⁴⁹

36. SoCal Edison supports the addition of a demand curve for regulation down service in ancillary service sub-regions; however, it argues that CAISO should be required to apply sub-regional regulation down procurement requirements in all ancillary service sub-regions, not just in the SP-26 expanded sub-region.⁵⁰ SoCal Edison notes that, per its understanding of the requested modification, the regulation down price in SP-26 expanded sub-region will be lower than the NP-26⁵¹ expanded sub-region price in situations where CAISO is unable to procure its minimum requirement of regulation down service in the NP-26 expanded sub-region area. SoCal Edison argues that CAISO must provide more robust justification for the proposal beyond actual operational experience since the start of MRTU.⁵² SoCal Edison warns that CAISO's proposal to have a minimum regulation down procurement constraint in the SP-26 expanded sub-region and not the NP-26 expanded sub-region will create pricing asymmetry where prices in SP-26 expanded sub-region will always be higher than, or equal to, regulation down prices in the NP-26 expanded ancillary service region. SoCal Edison contends that enforcing minimum regulation down procurement requirements in both sub-regions will allow regulation down prices to be formulated consistently between the two regions under scarcity and non-scarcity pricing conditions.⁵³

c. Commission Determination

37. As discussed below, our preliminary analysis indicates that CAISO has not shown its proposal to value sub-regional ancillary services and energy less than Expanded System Region reserves in shortage conditions to be just and reasonable. Accordingly, as described in further detail below, we will accept CAISO's proposal but suspend it for five

⁴⁹ The CAISO Response includes proposed CAISO Tariff sheets reflecting the regulation down curve.

⁵⁰ SoCal Edison understands the CAISO Filing letter at 12 to apply regulation down requirements to only SP-26 expanded ancillary service sub-region. SoCal Edison May 21, 2010 Response at 2 (SoCal Edison Response).

⁵¹ NP-26 is a sub-region in northern California.

⁵² SoCal Edison Response at 2 (citing CAISO Filing, Attachment A at p. 13).

⁵³ *Id.* at 2.

months, to become effective November 29, 2010, subject to a compliance filing and further Commission order. The Commission anticipates that it will issue an order on the compliance filing during the suspension period.⁵⁴

38. Under section 205 of the FPA, CAISO must demonstrate that its proposal to utilize a rate of 10 percent of the maximum energy bid price for the sub-regions and 20 percent of the maximum energy bid price for the Expanded System Region is just and reasonable. CAISO has not demonstrated that the applicable reliability standards governing the system-wide reserve requirements differ in such a way from the sub-regional reserve requirements to justify lower sub-regional scarcity prices. Thus, as discussed below,⁵⁵ while we find that the 20 percent of the maximum energy bid cap rate that is proposed for the Expanded System Region is just and reasonable, based upon the evidence proffered by CAISO in support of using a lower value for the sub-regions than the Expanded System Region and consideration of the protests, we find that CAISO has failed to demonstrate that its proposal to use a lower rate for the sub-regions is just and reasonable.

39. CAISO has demonstrated that the Expanded System Region demand curves provide adequate incentive for supply and demand resources to resolve a shortage. Under CAISO's proposal, Expanded System Region prices can rise as high as the market-wide energy price cap in CAISO, \$750/MWh as of April 1, 2010 and \$1000/MWh beginning on April 1, 2011. Such prices are greater than the current ancillary services offer cap of \$250/MWh, and approach the same maximum scarcity prices accepted by the Commission in the following ISO/RTOs: (1) Midwest ISO (MISO); (2) NYISO; (3) PJM Interconnection, LLC, (PJM); and (4) ISO-NE.⁵⁶ Further, CAISO has shown that the Expanded System Region demand curves result in adequate price signals for needed reserves, and that the higher prices will promote future investment and innovation. Accordingly, we find that CAISO's Expanded System Region demand curves are just and reasonable.

⁵⁴ See 16 U.S.C. § 824e.

⁵⁵ See *infra* P 39-43.

⁵⁶ See Section 6.4 of PJM OATT (FERC Electric Tariff, Sixth Revised Vol. No. 1); ISO-NE Tariff Section III.1.10.1A(d)(ix) (FERC Electric Tariff No. 3); MISO Tariff Section 39.2.5(f)(i), Section 40.2.5(k)(i); and NYISO Tariff Section V of Attachment F of Markets and Services Tariff (FERC Electric Tariff Original Volume No. 2).

40. In support of its proposal to utilize a lower rate for the sub-regions than the Expanded System Region, CAISO asserts that sub-regional ancillary services and energy should be procured at a lower price than Expanded System Region ancillary services and energy to reflect their relative value. CAISO claims that the relative value of these products is derived from the reliability standards that govern the reserve requirements in the CAISO balancing authority area. CAISO asserts that an Expanded System Region-wide shortage threatens reliability, while a sub-regional shortage is less of a threat to reliability.⁵⁷

41. We disagree and find the two reliability standards at issue are equally important. Specifically, WECC BAL-STD-002-0 states that an operating reserve is required for the reliable operation of the interconnected power system. It requires that adequate generating capacity be available at all times to maintain scheduled frequency and avoid loss of firm load following transmission or generation contingencies. This generating capacity is necessary to replace generating capacity and energy lost. NERC Standard TOP-002-2a, Requirement 7 states that each balancing authority shall plan to meet capacity and energy reserve requirements, including the deliverability/capability for any single contingency. Both of these standards are applied to balancing authorities and do not prescribe how the balancing authorities should disperse reserves to sub-regions, except that each balancing authority must meet its reserve requirements and that the reserves must be deliverable for any single contingency. Compliance with NERC Standard TOP-002-2a hinges on deliverability. Thus, as long as the arrangements are made to ensure that reserves are deliverable, the balancing authority will be in compliance with the standards. CAISO, as a balancing authority, must comply with the applicable mandatory reliability standards.⁵⁸

42. Moreover, the violation risk factor level applicable to the sub-regional deliverability requirement (NERC Standard TOP-002-2a) is the same as the violation risk factor level that applies to the minimum reserve requirement applicable to the Expanded System Region (WECC BAL-STD-002-0).⁵⁹ This suggests that NERC has delineated

⁵⁷ CAISO Filing at 10.

⁵⁸ How CAISO chooses to allocate and disperse the reserves in its footprint is up to CAISO, provided that it maintains a minimum amount of reserves and ensures deliverability for any single contingency.

⁵⁹ See “FERC Approved Standards” at <http://www.nerc.com/page.php?cid=2|20|285>. The violation risk factors delineate the relative risk to the bulk-power system associated with the violation of each requirement, and that the regional entities and NERC will use them in determining financial penalties for violating the standards as described in section 4 of the Electric Reliability

(continued...)

sub-regional scarcity conditions as a similar threat to system reliability as scarcity conditions in the Expanded System Region.

43. For these reasons, we find that CAISO has failed to demonstrate that reliability standards differentiate between sub-regional and Expanded System Region risks. Accordingly, we find that CAISO has not shown that its proposal to value sub-regional ancillary services and energy less than Expanded System Region reserves in shortage conditions is just and reasonable – CAISO has not justified different valuations for sub-regional and Expanded System Region reserves. We will accept and suspend the Scarcity Pricing Mechanism for five months subject to CAISO submitting a compliance filing within 60 days of the date of this order that justifies such disparate treatment or makes these values consistent.

44. We accept, subject to the compliance filing discussed above, CAISO's proposal to apply a scarcity pricing demand curve to procurement of regulation down service at the sub-regional level. CAISO notes that it has proposed a scarcity reserve demand curve value for regulation down at the sub-regional level based on operational experience within the SP-26 expanded ancillary service sub-region. We find that CAISO's experience provides sufficient evidence that CAISO should have scarcity prices in place for regulation down at the sub-regional level.

45. In addition, we believe that SoCal Edison has misunderstood CAISO's proposal. CAISO has proposed to apply a scarcity price demand curve, 25 percent of the maximum energy bid price, to an ancillary services sub-region for procurement of regulation down services. This curve will apply to all sub-regions, not only to the SP-26 region. Thus, we find SoCal Edison's concerns to be without merit. Moreover, CAISO has shown that it has encountered a shortage of regulation down at the sub-regional level and that the application of sub-regional scarcity prices for regulation down will ensure that the benefits of scarcity pricing (e.g., short-term reliability) will be in place if CAISO encounters a sub-regional regulation down shortage in the future. Accordingly, we find that CAISO's operational experience with the SP-26 expanded ancillary service sub-region supports the acceptance of CAISO's proposed regulation down demand curve, in all ancillary service sub-regions, subject to the compliance filing described above.⁶⁰

Organization Sanction Guidelines, Appendix 4B to the NERC Rules of Procedure. As part of its compliance and enforcement program, NERC has assigned a lower, medium, or high violation risk factor to each requirement of each mandatory Reliability Standard to associate a violation of the requirement with its potential impact on the reliability of the bulk-power system.

⁶⁰ See *supra* P 43.

Accordingly, we find that CAISO's proposed regulation down demand curve is just and reasonable and accept it, subject to the compliance filing discussed above.

2. System-wide Allocation of Costs for a Regional Deficiency

a. Comments

46. CPUC asserts that system-wide cost allocation for sub-regional deficiencies runs contrary to the principle of cost causation and creates an incentive for load serving entities to under-procure ancillary services to meet sub-regional needs. CPUC explains that, if a sub-region within CAISO footprint has insufficient ancillary services, then the costs of such shortage should be borne by the load serving entity or entities within that sub-region. CPUC argues that the existence of a sub-regional requirement implies that the benefits created by this requirement will be concentrated in that sub-region. Additionally, CPUC asserts that the sub-regional cost allocation mechanism creates incentives for load serving entities to rely on CAISO procurement of ancillary services rather than procuring such services themselves because regional load will be able to spread costs for ancillary services procured through the Scarcity Pricing Mechanism to the entire system. According to CPUC, load external to the sub-region will pay for ancillary services needed only within the separate sub-region even though the external load serving entity has procured more than sufficient ancillary services to fulfill its own needs. Therefore, CPUC urges the Commission to adopt a sub-regional cost allocation method for ancillary services procured to meet sub-regional needs.⁶¹

47. SWP argues that the allocation of scarcity pricing costs should be symmetrical to scarcity pricing payments to supply resources. SWP states that CAISO proposes to socialize unusually high ancillary services prices caused by scarcity to all loads throughout the entire CAISO grid, without regard to where scarcity may be occurring.⁶² SWP expresses concern that undue dilution of scarcity prices through cost socialization may cause more frequent instances of scarcity pricing to occur because loads that do not experience accurate pricing may not react in the optimal way.

48. SWP states that NYISO uses "in city" pricing for New York City to send specific price signals to a known load pocket.⁶³ In contrast, SWP notes that CAISO grid customers in San Diego will experience scarcity prices attributable to a shortage of

⁶¹ CPUC January 14, 2010 Comments at 4.

⁶² SWP January 14, 2010 Comments at 8 (SWP Comments).

⁶³ *Id.*

ancillary services in the northwestern part of the state. Moreover, SWP argues that CAISO has not explained how grid-wide socialization of scarcity prices sends price signals that will promote demand response.

49. SWP argues that matching administratively set scarcity pricing payments to resources with cost allocation to loads is essential. SWP states that, without symmetry, the Scarcity Pricing Mechanism cannot create additional investment in demand response. SWP states that the Commission has held that, when CAISO can calculate more accurate cost allocation, it should do so; otherwise, the rates are not just and reasonable.⁶⁴ SWP notes that CAISO has developed ancillary services regions and sub-regions that are used to help “ensure that the [a]ncillary [s]ervices required in the CAISO [b]alancing [a]uthority [a]rea are dispersed appropriately throughout the CAISO [b]alancing [a]uthority [a]rea and accurately reflect the system topology and deliverability needs.”⁶⁵ SWP states that CAISO software calculates ancillary services marginal prices that take into account, among other things, locational constraints and ancillary services regions.

b. Commission Determination

50. We disagree with protesters that the implementation of the Scarcity Pricing Mechanism requires modification of the previously-approved cost allocation methodology for ancillary service procurement costs.⁶⁶ The instant proposal does not alter the type of ancillary service being procured, the existing cost allocation, or the market participants involved from what is currently in-place for ancillary service procurement in non-scarcity conditions. Therefore, we find CAISO’s proposed ancillary service cost allocation for a scarcity condition to be consistent with what the Commission previously accepted, and what is currently in place, for ancillary service procurement in non-scarcity conditions.

⁶⁴ *Id.* at 9 (citing *Cal. Indep. Sys. Operator Corp.*, 101 FERC ¶ 61,219, at P 17 (2002), *order on clarification*, 103 FERC ¶ 61,042 (2003), *order on compliance filing*, 104 FERC ¶ 61,129 (2003), *order on outstanding issues*, 109 FERC ¶ 61,183 (2004) (“the fact that the ISO Tariff is based on [Utility Distribution Company] service areas should not prevent the more accurate assignment of [Unaccounted for Energy] charges, as the ISO Tariff can (and should) be revised to reflect a fair and reasonable calculation of [Unaccounted for Energy] charges.”).

⁶⁵ *Id.* (citing CAISO Tariff sections 8.3.3.2, 8.3.3.5).

⁶⁶ *See* MRTU Order, 116 FERC ¶ 61,274; MRTU Rehearing Order, 119 FERC ¶ 61,076.

51. Regarding protesters' concerns that the proposed cost allocation methodology will not send accurate price signals for investment in demand response, we note that scarcity prices will be paid to ancillary service providers during scarcity conditions, including demand response resources. These scarcity prices will send an appropriate price signal to available resources and ensure that all resources remain available to CAISO during scarcity events. Accordingly, we accept CAISO's proposed cost allocation.

3. Requested Changes to the Hour-Ahead Scheduling Process

a. Comments

52. SWP argues that, to allow demand to respond to scarcity prices in the fashion the Market Surveillance Committee has described and to address overgeneration issues, CAISO should be required to permit demand resources to bid into the hour-ahead/real-time market. SWP provides that the Market Surveillance Committee's opinion on the Scarcity Pricing Mechanism emphasizes the need for demand to be able to react to prices in the hour-ahead/real-time timeframes.⁶⁷ SWP contends that the same flexibility available to supply should be available to demand. SWP states that permitting demand to respond with bids in the hour-ahead/real-time markets is necessary if the Scarcity Pricing Mechanism is to elicit—and be moderated by—demand side actions.⁶⁸

53. SWP explains that CAISO's filing states that the Scarcity Pricing Mechanism is intended to help address overgeneration resulting from renewable energy production in off-peak hours. Therefore, SWP states that, when supply exceeds demand, CAISO expects to keep the grid in balance by triggering the Scarcity Pricing Mechanism for generators' regulation down services. SWP suggest that a more effective means of managing overgeneration is to use increases in demand to consume excess energy on the grid. SWP states that, although loads do not provide regulation services, CAISO currently employs increases in participating load (when water management imperatives so permit) to manage overgeneration.⁶⁹ However, SWP states that the CAISO Tariff does not include a mechanism that permits demand to bid into the hour-ahead/real-time

⁶⁷ See SWP Comments at 11 (citing Market Surveillance Committee Opinion at 2).

⁶⁸ *Id.* at 12.

⁶⁹ *Id.* at 11-12 (citing *Cal. Indep. Sys. Operator Corp.*, CAISO Second Annual Demand Response Report FERC Jan. 15, 2009).

markets. SWP also points out that loads that increase consumption in such timeframes may be subject to costs associated with deviations from day-ahead schedules.⁷⁰

b. Commission Determination

54. We find that SWP's concern as to whether demand resources should be able to offer into the hour-ahead scheduling process is beyond the scope of the instant proceeding. As discussed below, CAISO currently allows demand resources to provide non-spinning reserve. Currently, participating loads may offer to provide non-spinning and energy services into the real-time energy market. We note that CAISO and its stakeholders are actively working on market enhancements that will provide participating loads with greater flexibility, and we encourage CAISO to implement any enhancements that may come out of a stakeholder process as soon as possible. However, the Scarcity Pricing Mechanism does not address, and was not intended to address, participation in the hour-ahead scheduling process. Therefore, we find that concerns as to whether demand resources should be able to offer into the hour-ahead scheduling process would be more appropriately raised in the filing addressing participating load enhancements, which is pending before CAISO.

4. Cost Allocation for Regulation Down

a. Comments

55. SWP states that, consistent with the principles of cost causation, CAISO should require generation resources to bear generation down ancillary service costs resulting from overgeneration. SWP explains that overgeneration occurs when generation exceeds load. SWP argues that, when already insufficient loads are charged high scarcity prices for generators' regulation down services, they receive a highly perverse price signal encouraging them to reduce consumption. SWP contends that reducing the remaining loads on the system in times of overgeneration will worsen the problem, and, as more load reduction occurs, the per unit cost of regulation down services is borne by fewer units of consumption, increasing costs to those loads still on-line. Thus, SWP asserts that a more appropriate cost allocation would require generators to bear the costs of remedying overgeneration.⁷¹

⁷⁰ *Id.* at 12.

⁷¹ *Id.* at 10.

b. Commission Determination

56. We find that SWP's assertion that generators should bear the cost of regulation down is beyond the scope of the proceeding. The Scarcity Pricing Mechanism does not address, and was not intended to address, this issue. Accordingly, we will not address this issue in this proceeding.⁷²

5. Inclusion of Table 1 in the CAISO Tariff

a. Comments

57. SWP recommends that Table 1 be incorporated into the CAISO Tariff, perhaps as an appendix and perhaps with formulas instead of pricing examples or percentiles of demand curves in the case of non-spinning and regulation down reserves, because these curves may change over time.⁷³ SWP asserts that information explaining pricing, i.e. Table 1, should be included in the CAISO Tariff and not in the unfiled Business Practice Manuals.⁷⁴

b. Responses Following Deficiency Letter

58. The Commission asked "Explain why Table 1 does not constitute practices, rules and regulations that affect rates, such that it should be included in the tariff."⁷⁵

59. CAISO responds that Table 1 contains information already stated in the CAISO Tariff or information easily derived from the CAISO Tariff. In addition, CAISO contends that Table 1 does not reflect the fact that the percentages included in the CAISO

⁷² Although we decline to address the merits of SWP's concern in this proceeding, we note the following: (1) the costs of procuring regulation down service should not be allocated differently from the costs of other ancillary services providing similar benefits, i.e. services procured to keep the CAISO system in balance and to serve CAISO load in a reliable manner; and (2) short-term imbalances, for which regulation service is procured, will not be exacerbated by ancillary service requirements or the price paid for such services.

⁷³ SWP Comments at 13.

⁷⁴ *Id.* (citing *KeySpan Ravenswood v. FERC*, ¶ 474 F. 3d 804 (D.C. Cir. 2007) (rejecting FERC's rule of reason argument to hold that an ISO must comply with the filed rate doctrine requiring that matters affecting rates must be included in the filed tariff)).

⁷⁵ Deficiency Letter at 4.

Tariff could apply to maximum energy bid prices that may apply in the future. Thus, CAISO asserts that Table 1 is only partially illustrative because the CAISO Tariff contains, in greater detail, all of the practices that affect rates and service significantly. For these reasons, CAISO argues that including duplicative information in the CAISO Tariff could lead to confusion if parties were to assume that Table 1 differs in some respect from the plain language of the CAISO Tariff.⁷⁶

c. Commission Determination

60. We agree with SWP that Table 1 should be included in the CAISO Tariff and that CAISO should revise all CAISO Tariff sections that refer to Table 1. Specifically, the Commission's regulations require that "[e]very public utility shall file with the Commission . . . full and complete rate schedules . . . clearly and specifically setting forth all rates and charges . . . [and the] practices, rules and regulations affecting such rates and charges . . ."⁷⁷ Previously, the Commission found that utilities must file "those practices that affect rates and service significantly, that are realistically susceptible of specification, and that are not so generally understood in any contractual arrangement as to render recitation superfluous."⁷⁸

61. We find that, inasmuch as Table 1 explains the demand curve values for each ancillary service product, it constitutes practices, rules, and regulations that affect rates. Although it may be possible to calculate scarcity prices based on the information already proposed to be included in the CAISO Tariff, Table 1 is part of CAISO's clear and specific explanation demand curves included in the Scarcity Pricing Mechanism. Accordingly, we direct CAISO to submit a compliance filing no later than 60 days from the date of this order that incorporates Table 1 and includes other CAISO Tariff changes necessitated by the inclusion of Table 1 in the CAISO Tariff.

6. Review of the Scarcity Pricing Mechanism

a. Comments

62. WPTF, SWP, and J.P. Morgan all express concerns that a review of the Scarcity Pricing Mechanism could be as infrequent as every three years. WPTF asks the

⁷⁶ CAISO Response at 14.

⁷⁷ 18 C.F.R. § 35.1(a) (2010).

⁷⁸ *KeySpan Ravenswood v. FERC*, 474 F. 3d 804, 811 (citing *City of Cleveland v. FERC*, 773 F.2d 1368, 1376 (D.C. Cir. 1985)); *see also Cal. Indep. Sys. Operator Corp.*, 122 FERC ¶ 61,271 (2008).

Commission to direct CAISO to review the performance of the Scarcity Pricing Mechanism annually, as a part of CAISO'S annual review of its markets, for at least the first three years.⁷⁹ Similarly, SWP argues that the Scarcity Pricing Mechanism should be reviewed after one year, provided that scarcity prices were triggered.⁸⁰

63. Likewise, J.P. Morgan recommends that CAISO conduct a review of the Scarcity Pricing Mechanism after one year. J.P. Morgan states that, after the initial review, comprehensive periodic reviews every two to three years may be appropriate. J.P. Morgan notes that the NYISO Tariff includes provisions that provide NYISO and its stakeholders with the flexibility to conduct as-needed reviews of its Scarcity Pricing Mechanism. J.P. Morgan states that the Commission and CAISO may want to consider the adoption of comparable provisions.⁸¹

b. Responses Following Deficiency Letter

64. J.P. Morgan reiterates that, at a minimum, CAISO should reviews scarcity pricing after the initial year of implementation and regularly thereafter.⁸²

c. Commission Determination

65. We agree with protesters that, initially, the Scarcity Pricing Mechanism should be reviewed more frequently than proposed by CAISO. Although CAISO's proposal to review the Scarcity Pricing Mechanism at least every three years does not preclude annual or even more frequent review, we agree with protesters that CAISO should review the Scarcity Pricing Mechanism annually for the first three years to ascertain whether it is providing the intended price signals and incentives.

66. We find that CAISO's proposal, which leaves open the possibility that the Scarcity Pricing Mechanism could be used frequently and reviewed as infrequently as every three years in its first years of implementation, is unjust and unreasonable. Instead, at least annual review is appropriate for the first three years.⁸³ This approach allows CAISO and

⁷⁹ WPTF Comments at 9.

⁸⁰ SWP Comments at 12.

⁸¹ J.P. Morgan Comments at 11.

⁸² J.P. Morgan Response at 2.

⁸³ If the Scarcity Pricing Mechanism is not triggered in one of the first three years, then CAISO need not conduct an assessment for that year.

stakeholders to evaluate whether the Scarcity Pricing Mechanism is functioning as intended and sending appropriate price signals and incentives. We direct CAISO to make this revision in a compliance filing no later than 60 days from the date of this order. After the first three years, once the Scarcity Pricing Mechanism has had the opportunity to be appropriately assessed in the market, we accept CAISO's proposal to review the Scarcity Pricing Mechanism at least every three years.

7. Additional Assessments

a. Comments

67. SDG&E supports the Market Surveillance Committee recommendations that CAISO undertake the following: (1) additional assessments of demand curve values based on loss-of-load probabilities and value of lost load; and (2) additional studies to confirm whether the demand curve values reflect appropriately the demand costs of relaxing operating constraints for both the Expanded System Region and the ancillary services sub-regions.⁸⁴ SDG&E contends that the Commission should direct CAISO to undertake such studies so that this initial scarcity reserve pricing mechanism may be refined to produce the sharp scarcity prices needed to drive demand-side initiatives.

b. Commission Determination

68. We find that the Scarcity Pricing Mechanism, subject to the compliance filing described above,⁸⁵ is just and reasonable. SDG&E has not demonstrated that additional studies (i.e., additional assessments of demand curve values based on loss-of-load probabilities and value of lost load, and studies to confirm whether the demand curve values reflect appropriately the demand costs of relaxing operating constraints for both the Expanded System Region and the ancillary services sub-regions) are needed to ensure that the Scarcity Pricing Mechanism is just and reasonable.

8. Compliance with Order No. 719

69. Order No. 719 requires each RTO or ISO to reform or demonstrate the adequacy of its existing market rules to ensure that the market price for energy reflects the value of energy during an operating reserve shortage.⁸⁶ It provides that each RTO or ISO may propose in its compliance filing one of four suggested approaches to pricing reform

⁸⁴ SDG&E January 14, 2010 Comments at 3.

⁸⁵ *See supra* P 43.

⁸⁶ Order No. 719, FERC Stats. & Regs. ¶ 31,281 at P 194.

during an operating reserve shortage or develop its own alternative approach to achieve the same objectives.⁸⁷ Each RTO or ISO is required to address how its selected method of shortage pricing interacts with its existing market design.⁸⁸

70. Order No. 719 also required each RTO or ISO to provide adequate factual support for its compliance filing. To that end, the Commission outlined six criteria it would consider in reviewing whether the factual record compiled by the RTO or ISO meets the requirements of the rule.⁸⁹

a. CAISO Filing

71. CAISO claims that the Scarcity Pricing Mechanism complies with the directives of Order No. 719 as it relates to the pricing of energy and ancillary services during periods of operating reserve shortages. To improve reliability by reducing demand and increasing supply during periods of operating reserve shortages, CAISO states that its proposal will provide immediate and automatic price signals to both demand and generation if there is a shortage of operating reserves. According to CAISO,

⁸⁷ The four suggested approaches to pricing reform during an operating reserve shortage are as follows: (1) RTOs and ISOs would increase the energy supply and demand bid caps above the current levels only during an emergency; (2) RTOs and ISOs would increase bid caps above the current level during an emergency only for demand bids while keeping generation bid caps in place; (3) RTOs and ISOs would establish a demand curve for operating reserves, which has the effect of raising prices in a previously agreed-upon way as operating reserves grow short; or (4) RTOs and ISOs would set the market-clearing price during an emergency for all supply and demand response resources dispatched equal to the payment made to participants in an emergency demand response program. *Id.* P 208.

⁸⁸ *Id.* P 204.

⁸⁹ The six criteria of any shortage pricing mechanism are that it: (1) improve reliability by reducing demand and increasing supply during periods of operating reserve shortages; (2) make it more worthwhile for customers to invest in demand response technologies; (3) encourage existing generation and demand resources to continue to be relied upon during an operating reserve shortage; (4) encourage entry of new generation and demand resources; (5) ensure that the principle of comparability in treatment of and compensation to all resources is not discarded during periods of operating reserve shortage; and (6) ensure market power is mitigated and gaming behavior is deterred during periods of operating reserve shortages including, but not limited to, showing how demand resources discipline bidding behavior to competitive levels. *Id.* P 246-47.

participating demand response that is certified to provide operating reserves can respond to the shortage. CAISO submits that price responsive demand that is bid into its markets can also respond by reducing the need to dispatch energy that CAISO may otherwise co-optimize as operating reserves in the next dispatch interval. According to CAISO, generation certified to provide operating reserves will have the opportunity to respond to the increased prices arising from the shortage.⁹⁰

72. CAISO contends that its proposal will make it more worthwhile for customers to invest in demand response technologies by providing an additional opportunity for demand response resources to earn revenues.⁹¹ CAISO explains that, during a shortage condition, demand response resources that provide operating reserves will receive an administrative price that is greater than the current maximum ancillary service bid price of \$250/MWh for non-spinning reserve and regulation down⁹² in the Expanded System Region. CAISO states that these additional revenues will encourage existing generation and demand resources to continue to be relied upon during an operating reserve shortage and encourage entry by new generation and demand response resources.⁹³

73. Regarding comparability, CAISO states that, under its Scarcity Pricing Mechanism, all resources providing a scarce ancillary service within an ancillary service region in which a shortage exists will receive the same administrative price. Moreover, CAISO submits that locational marginal prices for energy will reflect the foregone opportunity cost of the marginal resource, if any, for not providing the scarce ancillary service consistent with CAISO's co-optimization design.⁹⁴

74. Finally, to ensure that market power is mitigated and that gaming behavior is deterred during periods of operating reserve shortages, CAISO explains that market participants do not need to change their bidding behavior in anticipation of a scarcity condition. If a shortage arises, all bids that have cleared the ancillary services market for that ancillary service will receive the same administrative price. CAISO notes that demand can operate to reduce and eliminate the shortage either by participating in the

⁹⁰ CAISO Filing at 8.

⁹¹ *Id.* at 8-9.

⁹² Currently, demand response resources are only able to provide non-spinning reserve.

⁹³ *Id.* at 9.

⁹⁴ *Id.*

CAISO's ancillary services markets or as part of a load serving entities' program to reduce usage, thereby increasing the availability of resources otherwise dispatched for energy to provide operating reserves.⁹⁵

b. Responses Following the Deficiency Letter

75. The Deficiency Letter asked the following:

In the proceeding on CAISO's Order No. 719 compliance filing, in Docket No. ER09-1048-000, the CAISO stated that it plans to file a standard authorization request with the [WECC], asking it to create a standards drafting team to rewrite WECC standards for regulation and spinning reserves in order to allow non-generation resources to provide these services. The CAISO has also stated that it plans to develop, independently, a set of standards that WECC may or may not adopt, but which the CAISO will ultimately file with the Commission as proposed revisions to its tariff. Please explain the status of these efforts.⁹⁶

76. In response, CAISO states that it is undertaking a stakeholder process to explore mechanisms by which demand response resources may be capable of providing regulation and spinning reserve. CAISO provides that it plans to file a standard authorization request with WECC, asking that it create a standards drafting team to rewrite the standards for regulation and spinning reserves in order to allow non-generation resources to provide these services.⁹⁷ CAISO plans to develop a set of standards that WECC may or may not adopt, but which it will file with the Commission as proposed CAISO Tariff revisions.

77. In addition, CAISO states that it has completed a stakeholder process that focused on increased participation by non-generation resources in its ancillary services markets. CAISO states that the stakeholder process produced the following three recommended CAISO Tariff modifications: (1) reduce the minimum rated capacity requirement from 1 MW to 0.5 MW; (2) clarify the "measurement of continuous energy requirement" to accommodate demand response; and (3) reduce the continuous energy requirement from 2 hours to 30-60 minutes, depending on the service provided.⁹⁸

⁹⁵ *Id.*

⁹⁶ Deficiency Letter at 2.

⁹⁷ CAISO Response at 6.

⁹⁸ *Id.* at 6-7.

CAISO notes that it is drafting CAISO Tariff revisions that will implement each of these enhancements, which are expected to be in place later this year.

78. The Deficiency Letter also asked:

In explaining in part how it meets the six criteria of Order No. 719's directive related to the pricing of energy and ancillary services during periods of operating reserve shortages,⁹⁹ the CAISO states:

Price responsive demand bid into the [CA]ISO's markets can also respond by reducing the need to dispatch energy that the [CA]ISO may otherwise co-optimize as operating reserves in the next dispatch interval.^[100] . . .

* * *

. . . [D]emand can operate to reduce and eliminate the shortage either by participating in the [CA]ISO's ancillary services markets or as part of a load serving entities' program to reduce usage and thereby increase the availability of resources otherwise dispatched for energy to provide operating reserves.^[101]

Please explain the basis for your statement that "demand can operate to reduce and eliminate the shortage either by participating in the [CA]ISO's ancillary services markets or as part of a load serving entities' program to reduce usage,"¹⁰² given that demand resources are not currently eligible to participate in the CAISO spinning and regulation services markets. Where possible, support your response with data and evidence.¹⁰³

⁹⁹ Deficiency Letter at 3 (referencing Order No. 719, FERC Stats. & Regs. ¶ 31,281 at P 247).

¹⁰⁰ *Id.* (referencing CAISO Filing at 8).

¹⁰¹ *Id.* (referencing CAISO Filing at 9).

¹⁰² *Id.*

¹⁰³ Deficiency Letter at 3.

79. CAISO responds that participating load is eligible and does participate in the non-spinning reserve market. CAISO notes that it is working to allow demand resources access to its markets, including submitting to the Commission the Proxy Demand Resource filing (which allows for third-party aggregators of retail customers) and the CAISO Tariff revisions that adjust certain technical ancillary service provider requirements that will allow demand resources to more fully participate in the ancillary service markets.

c. Commission Determination

80. We find that CAISO complies with the requirements of Order 719 with respect to operating reserve shortage pricing. CAISO's approach to ensuring that the market price for energy reflects the value of energy during an operating reserve shortage through the use of operating reserve demand curves, which has the effect of raising prices in a previously agreed-upon way as operating reserves grow short,¹⁰⁴ is just and reasonable, subject to the compliance filing described above.¹⁰⁵ CAISO's proposed demand curves are tiered to allow for an increase in scarcity prices as the size and severity of the reserve shortage increases. The demand curves also consider the relative value of each ancillary service, increasing the scarcity prices from lowest to highest as the quality of the service increases. Finally, the Scarcity Pricing Mechanism ensures that energy prices will rise with ancillary services prices during a reserve shortage, consistent with the Commission's previous directives,¹⁰⁶ by increasing locational marginal prices for energy in periods of reserve shortages to reflect the forgone opportunity cost of the marginal resource for providing energy and not the scarce ancillary services. These features of CAISO's proposal will enhance reliability, encourage participation of existing generation and demand response resources, provide an incentive for new entry of demand response and generation resources, and encourage innovation.¹⁰⁷

81. CAISO has proposed separate demand curves for each ancillary service for its Expanded System Region and its sub-regions. We note that a similar methodology is employed by other RTOs and ISOs.¹⁰⁸ We find this approach to be just and reasonable,

¹⁰⁴ Order No. 719, FERC Stats. & Regs. ¶ 31,281 at P 208.

¹⁰⁵ See *supra* P 43.

¹⁰⁶ MRTU Order, 116 FERC ¶ 61,274 at P 1079.

¹⁰⁷ See Order No. 719, FERC Stats. & Regs. ¶ 31,281 at P 165.

¹⁰⁸ See, e.g., ISO-NE Tariff, Section III.2.7A(c); see also NYISO Markets and Services Tariff, Section 7.0 of Rate Schedule 4.

subject to the compliance filing described above,¹⁰⁹ and note that it is consistent with locational marginal pricing because shortages in both the Expanded System Region and sub-regions will send price signals to areas where investment is needed.

82. We find that the CAISO Tariff ensures that market power is mitigated through adequate mitigation tools at CAISO's disposal. CAISO employs a thorough set of market monitoring and mitigation procedures that test potential suppliers for market power, mitigate automatically those determined to have market power, and monitors for other potential abuses, including the power to take retroactive action to investigate a participant that may be determined to have unduly acted in order to cause a shortage condition. CAISO also permits demand resources to be full participants in several of its markets and is working toward providing demand resources complete access to all of its markets. For these reasons, we find that CAISO has complied with the criteria of Order No. 719.

The Commission orders:

(A) CAISO's proposed CAISO Tariff sheets are hereby accepted for filing and suspended for five months, to become effective November 29, 2010, subject to a compliance filing and a further Commission order.

(B) CAISO is hereby directed to submit a compliance filing within 60 days of the date of this order, consistent with the directives discussed in the body of this order.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.

¹⁰⁹ See *supra* P 43.