

153 FERC ¶ 61,315
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;
Cheryl A. LaFleur, Tony Clark,
and Colette D. Honorable.

California Independent System Operator Corporation

Docket No. EL14-22-000

ORDER ON COMPLIANCE FILING

(Issued December 17, 2015)

1. By order issued March 20, 2014,¹ the Commission instituted an inquiry pursuant to section 206 of the Federal Power Act (FPA)² in the above-referenced proceeding to ensure that California Independent System Operator Corporation's (CAISO) scheduling, particularly its day-ahead scheduling practices, correlate with revisions to the natural gas scheduling practices ultimately adopted by the Commission in Order No. 809.³ On July 23, 2015, CAISO filed a compliance filing with the Commission, contending that it does not need to modify the timing of its current day-ahead scheduling.
2. In this order, the Commission determines that CAISO has shown cause why its existing scheduling practices need not be changed and hereby accepts CAISO's compliance filing. However, the Commission also directs CAISO to submit an annual informational report explaining ongoing efforts to further align the gas and electric scheduling practices, as discussed below.

¹ *Cal. Indep. Sys. Operator Corp.*, 146 FERC ¶ 61,202 (2014) (206 Order). The 206 Order applied to all six jurisdictional independent system operators (ISO) and regional transmission organizations (RTO), assigning separate docket numbers to each ISO or RTO. This order only relates to CAISO.

² 16 U.S.C. § 824e (2012).

³ *Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities*, Order No. 809, 80 Fed. Reg. 23,198-01 (Apr. 24, 2015), FERC Stats. & Regs. ¶ 31,368 (cross-referenced at 151 FERC ¶ 61,049), *order on clarification*, 152 FERC ¶ 61,095, *order on reh'g*, 152 FERC ¶ 61,212 (2015).

I. Background

3. Beginning in 1996, the Commission has adopted regulations to standardize the business practices and communication methodologies of interstate natural gas pipelines to create a more integrated and efficient pipeline grid. These regulations were promulgated in the Order No. 587 series of orders,⁴ wherein the Commission incorporated by reference into the Commission's regulations standards for interstate natural gas pipeline business practices and electronic communications developed and adopted by the North American Energy Standards Board (NAESB) Wholesale Gas Quadrant (WGQ). The NAESB WGQ standards, including the standard nationwide nomination timeline, were developed to improve the speed and efficiency with which shippers can transact business across interconnecting pipelines.

4. The NAESB WGQ standards provide a minimum number of nomination opportunities for natural gas shippers to schedule service for the Gas Day, which starts at 9:00 a.m. Central Clock Time (CCT):⁵ (a) the Timely Nomination Cycle, which occurs the day before the operating day on which the gas will flow (Gas Day); (b) the Evening Nomination Cycle, which occurs late in the day prior to gas flow and allows shippers to modify their Timely Nomination Cycle schedules; and (c) two intraday nominations (three after implementation of Order No. 809) that occur during the Gas Day. The Commission meanwhile has accepted regional variations in the development of wholesale electric industry scheduling practices.

5. The differences between the day-ahead nationwide natural gas scheduling timeline and the day-ahead regional organized electricity market scheduling timelines can create complications for interstate natural gas pipelines and electric transmission operators in coordinating the scheduling of the two industries. The Timely Nomination Cycle is the most liquid time to acquire both natural gas supply and pipeline transportation capacity. During that cycle, all of a natural gas pipeline's scheduling nomination priorities are in

⁴ This series of orders began with the Commission's issuance of *Standards for Business Practices of Interstate Natural Gas Pipelines*, Order No. 587, FERC Stats. & Regs. ¶ 31,038 (1996). The most recent order in this series is Order No. 587-W, issued on October 15, 2015, wherein the Commission incorporated by reference the Version 3.0 WGQ Business Practice Standards. *Standards for Business Practices of Interstate Natural Gas Pipelines*, Order No. 587-W, 80 Fed. Reg. 67,302 (Nov. 2, 2015), FERC Stats. & Regs. ¶ 31,373 (2015) (cross-referenced at 153 FERC ¶ 61,061).

⁵ See NAESB WGQ Standards 1.3.2. NAESB's standards in general make reference to CCT, which refers to the actual time in the Central Time Zone, reflecting Central Standard Time or Daylight Savings Time, whichever is applicable.

effect: primary firm nominations⁶ have priority over secondary firm nominations,⁷ and secondary firm nominations have priority over interruptible nominations.⁸ Under Commission policy and pipeline tariffs, once firm transportation is scheduled, including secondary firm nominations, it cannot be displaced or bumped by another firm or interruptible nomination for that Gas Day.⁹

6. As detailed below, day-ahead electric generation commitments generally occur after the Timely Nomination Cycle. Typically, a natural gas-fired generator must either submit its nomination for natural gas transportation services before it knows when and how much electricity it will be committed to produce the next day, or it must wait until it receives its day-ahead commitment to nominate natural gas transportation services, with the risk that during some periods natural gas supply and transportation capacity may not be available or economical, given the ISO and RTO day-ahead market clearing price. If a natural gas-fired generator acquires natural gas supply and transportation prior to learning whether it is dispatched, it runs the risk of having to sell off excess natural gas supply and pipeline transportation capacity during the less liquid Evening or intraday Nomination Cycles to the extent its bid does not clear the day-ahead market. If the natural gas-fired generator waits to acquire natural gas supply and pipeline transportation until its bid clears the day-ahead market, it would be doing so during the less liquid Evening or intraday Nomination Cycles, where the generator may be unable to acquire pipeline transportation capacity if the pipeline is fully scheduled. While natural gas-fired generators may be able to obtain natural gas supply and pipeline transportation throughout the day during many periods of the year, their ability to procure natural gas supply and pipeline transportation in the most liquid Timely Nomination Cycle may be critical to their ability to provide service during periods when the pipeline is constrained.

7. After the day-ahead electric dispatch schedule is set, ISOs and RTOs also conduct reliability assessments to determine whether they believe they have sufficient generation committed to meet expected load for the following electric operating day. If the day-

⁶ Primary firm nominations are nominations of firm transportation from a primary receipt point to a primary delivery point. Order No. 809, FERC Stats. & Regs. ¶ 31,368 at P 72.

⁷ Secondary firm nominations are firm nominations that include at least one secondary point. *Id.* P 72 n.134.

⁸ Interruptible nominations are nominations for service that is “subject to a prior claim by another customer or another class of service and receives a lower priority than such other classes of service.” 18 C.F.R. § 284.9(a)(3) (2015).

⁹ See Order No. 809, FERC Stats. & Regs. ¶ 31,368 at PP 73, 75.

ahead electric dispatch schedule does not appear adequate to meet load, the ISO or RTO may schedule additional units to be ready during real time. Each ISO and RTO establishes its own timing for the day-ahead schedule and reliability unit commitment. As with the Timely Nomination Cycle, if the ISOs and RTOs do not announce commitments of these generators prior to the Evening Nomination Cycle, those generators might have difficulty obtaining natural gas supply at reasonable prices and scheduling pipeline transportation service using only the intraday nomination cycles.

8. The following table shows each ISO's and RTO's existing day-ahead scheduling timeline:

Table 1 – ISO and RTO Day-Ahead Scheduling¹⁰

ISO or RTO	Time for Bid Submission (CCT)	Time for Publication of Day-Ahead Commitment Bids (CCT)	Notification of Reliability Unit Assessment (CCT)
California Independent System Operator Corporation (CAISO)	12:00 p.m.	3:00 p.m.	3:00 p.m.
ISO New England Inc. (ISO-NE)	9:00 a.m.	12:30 p.m.	4:00 p.m.
PJM Interconnection, L.L.C. (PJM)	11:00 a.m.	3:00 p.m.	7:00 p.m.
Midcontinent Independent System Operator, Inc. (MISO)	10:00 a.m. (during period of the year not covered by Daylight Savings Time)	2:00 p.m. (during period of the year not covered by Daylight Savings Time)	7:00 p.m. (during period of the year not covered by Daylight Savings Time)

¹⁰ This table does not reflect revisions to PJM's day-ahead timeline, to become effective on March 31, 2016, which the Commission recently approved in *PJM Interconnection, L.L.C.*, 153 FERC ¶ 61,209 (2015). Nor does this table reflect revisions to SPP's day-ahead timeline, to become effective October 1, 2016, which the Commission has approved in *Sw. Power Pool, Inc.*, 153 FERC ¶ 61,316 (2015), issued contemporaneously with this order.

ISO or RTO	Time for Bid Submission (CCT)	Time for Publication of Day-Ahead Commitment Bids (CCT)	Notification of Reliability Unit Assessment (CCT)
	11:00 a.m. (during period of the year covered by Daylight Savings Time)	3:00 p.m. (during period of the year covered by Daylight Savings Time)	8:00 p.m. (during period of the year covered by Daylight Savings Time)
New York Independent System Operator, Inc. (NYISO)	4:00 a.m.	10:00 a.m.	10:00 a.m.
Southwest Power Pool, Inc. (SPP)	11:00 a.m.	4:00 p.m.	8:00 p.m.

Under existing day-ahead timelines, all ISOs and RTOs (except NYISO) post successful economic dispatch bids *after* the current nomination deadline for the Timely Nomination Cycle at 11:30 a.m. CCT, and MISO and SPP post successful initial reliability unit commitments *after* the current nomination deadline for the Evening Nomination Cycle at 6:00 p.m. CCT.

9. As part of its efforts to coordinate the scheduling practices of the wholesale natural gas and electric industries, and as relevant here, on March 20, 2014, the Commission concurrently issued: (1) a notice of proposed rulemaking in Docket No. RM14-2-000, proposing changes to the scheduling practices of the wholesale natural gas industry;¹¹ and (2) the 206 Order, instituting an FPA section 206 inquiry into ISO and RTO electric scheduling practices. In the NOPR, the Commission proposed, among other things, to move the Timely Nomination Cycle from 11:30 a.m. CCT to 1:00 p.m. CCT. The Commission proposed this change in order to provide the ISOs and RTOs with additional time in which to post results of their day-ahead markets so that gas-fired generators will know their day-ahead commitments for the following electric operating day in time to submit nominations for pipeline capacity during the Timely Nomination Cycle, the most liquid nomination cycle.

¹¹ *Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities*, FERC Stats. & Regs. ¶ 32,700 (2014) (cross-referenced at 146 FERC ¶ 61,201) (NOPR).

10. The 206 Order directed each ISO and RTO, within 90 days of the issuance of a final rule in Docket No. RM14-2-000, either “(1) to make a filing that proposes tariff changes to adjust the time at which the results of its day-ahead energy market and reliability unit commitment process (or equivalent) are posted to a time that is sufficiently in advance of the Timely and Evening Nomination Cycles, respectively, to allow gas-fired generators to procure natural gas supply and pipeline transportation capacity to serve their obligations, or (2) to show cause why such changes are not necessary.”¹² The Commission directed each ISO and RTO to “explain how its proposed modifications are sufficient for gas-fired generators to secure natural gas pipeline capacity prior to the Timely and Evening Nomination Cycles.”¹³

11. On April 16, 2015, the Commission issued the final rule in Docket No. RM14-2-000, Order No. 809, which amended the Commission’s regulations to incorporate by reference NAESB’s revised standards that changed the nationwide Timely Nomination Cycle nomination deadline from 11:30 a.m. CCT to 1:00 p.m. CCT and revised the intraday nomination timeline to include an additional intraday scheduling opportunity during the Gas Day.¹⁴ The large majority of commenters supported moving the start time for the Timely Nomination Cycle from 11:30 a.m. CCT to 1:00 p.m. CCT, including commenters that did not generally support NAESB’s revised intraday nomination timeline.¹⁵ Many commenters to the NOPR stated that moving the Timely Nomination Cycle nomination deadline to 1:00 p.m. CCT would provide generators more time to acquire natural gas supply and pipeline transportation capacity after learning their electric dispatch obligations, provided changes are made to the ISO and RTO scheduling processes.¹⁶ The Commission agreed with these commenters, finding that moving the close of the Timely Nomination Cycle from 11:30 a.m. CCT to 1:00 p.m. CCT “will provide generators more time to acquire natural gas supply and pipeline transportation after learning their electric dispatch obligations, *provided changes are made to the ISO and RTO scheduling processes.*”¹⁷

¹² 206 Order, 146 FERC ¶ 61,202 at P 19.

¹³ *Id.*

¹⁴ Order No. 809, FERC Stats. & Regs. ¶ 31,368 at PP 1, 168. Although the NOPR proposed moving the start of the Gas Day from 9:00 a.m. CCT to 4:00 a.m. CCT, the Commission declined to adopt that proposal. *Id.* PP 3, 13.

¹⁵ *Id.* P 84.

¹⁶ *Id.*

¹⁷ *Id.* P 87 (emphasis added).

12. The following table shows the current NAESB gas nomination timeline and the revised NAESB gas nomination timeline accepted in Order No. 809 and effective April 1, 2016:¹⁸

Table 2 – Current and Revised NAESB Natural Gas Nomination Cycles

Time Shifts -- All times CCT		Current NAESB Standards	Revised NAESB Standards
Timely	Nomination Deadline	11:30 AM	1:00 PM
Evening	Nomination Deadline	6:00 PM	6:00 PM
Intraday 1	Nomination Deadline	10:00 AM	10:00 AM
	IT Bump Rights	bumpable	bumpable
Intraday 2	Nomination Deadline	5:00 PM	2:30 PM
	IT Bump Rights	no bump	bumpable
Intraday 3	Nomination Deadline		7:00 PM
	IT Bump Rights		no bump

II. CAISO's Filing

13. On July 23, 2015, CAISO submitted a compliance filing in response to the 206 Order. CAISO's current day-ahead energy market closes at 10:00 a.m. Pacific Time (PT) (12:00 p.m. CCT) and CAISO publishes its market results, including its day-ahead energy schedule, ancillary services awards, and reliability unit commitment, at 1:00 p.m. PT (3:00 p.m. CCT). CAISO does not propose any changes to its day-ahead market close and publication of market results.

14. CAISO states that large load-serving entities in the CAISO balancing authority area, which also schedule supply into the CAISO markets, have explained that moving the day-ahead market process to earlier in the day may result in less accurate supply forecasts. CAISO states that weather data and other information necessary to create load, hydroelectric, and variable energy resource forecasts may not be available to market participants or may be less accurate earlier in the day and that moving the market close would result in reduced accuracy and higher procurement costs. CAISO states that some scheduling coordinators may be reluctant to schedule variable energy resources into the day-ahead market if they need to do so before obtaining what they consider to be an

¹⁸ See *id.* at app. (emphasis added). See also *Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities*, 152 FERC ¶ 61,095 (clarifying that the new day-ahead nomination timelines will apply as of March 31, 2016 for those nominations that will become effective April 1, 2016).

accurate day-ahead production forecast.¹⁹

15. CAISO also asserts that the existing market timeline advances efficiency. CAISO explains that its current scheduling timeline provides natural gas price certainty for market participants. CAISO claims that this certainty increases the likelihood that bids for energy from natural gas-fired resources accurately reflect the cost of fuel. CAISO states that scheduling coordinators have estimated that potential inefficiencies from less accurate forecasting could amount to millions of dollars annually. According to CAISO, the current day-ahead market timeline also allows for more load, hydroelectric, and variable energy resource forecasting accuracy, which results in better alignment between day-ahead and real-time market results.²⁰

16. CAISO states that the three-hour period between the close of the day-ahead market and the publication of market results is necessary to conduct the market processes that result in day-ahead energy schedules and ancillary services awards as well as residual unit commitment awards. CAISO states that it issues its day-ahead market awards and completes its residual unit commitment process well in advance of the Evening Nomination Cycle. CAISO states that its practice meets the Commission's expectation that CAISO complete its reliability unit commitment procedures by a time sufficiently prior to the Evening Nomination Cycle to permit natural gas-fired resources to acquire transportation capacity they require to meet that commitment.²¹

17. CAISO states that current practices in the West and California generally support reliable access to natural gas supply and transportation. CAISO states that natural gas-fired resources serving load in the CAISO balancing authority area generally have access to natural gas supply and transportation services from both interstate and intrastate pipelines. CAISO states that, according to the 2014 California Gas Report, natural gas utilities, interstate pipelines, and in-state natural gas storage facilities have sufficiently increased their delivery and receipt capacity to meet demand growth. CAISO points out that, as explained in CAISO's fuel assurance report filed with the Commission earlier this year,²² two intrastate gas pipeline companies serve the majority of California's natural gas demand. According to CAISO, Pacific Gas and Electric Company (PG&E) and Southern California Gas Company (SoCal Gas) plan their intrastate pipelines based on

¹⁹ CAISO Compliance Filing at 6-8.

²⁰ *Id.* at 8.

²¹ *Id.* at 2-3.

²² *See* Report of the CAISO submitted in Docket Nos. AD13-7-000 and AD14-8-000 at 6 (Feb. 18, 2015).

specific reliability-based design criteria set by the California Public Utilities Commission rather than in response to firm contract demand. CAISO asserts that, similar to the electric sector, both companies expand their gas systems to meet 1-in-10 year demand under dry hydro conditions. Each company has additional requirements to maintain slack capacity on the system and planning criteria to address more severe scenarios. CAISO explains that PG&E has informed CAISO that its storage resources and pipelines can supply 40 percent more supply than PG&E has forecasted for its gas system on an abnormal peak day.²³

18. CAISO claims that flexible scheduling practices in the West—specifically the ability for electric generator customers to elect to take transportation service under firm or interruptible options or to negotiate products with natural gas marketers, and the availability of monthly balancing on some pipelines—also benefit customers. CAISO states that these mechanisms, among others, provide natural gas-fired resources with flexibility to draw on transportation services backed by natural gas pipeline and storage systems. CAISO claims that for calendar years 2013 and 2014, it has no record of a resource operator informing it of an outage or de-rate as a result of its resource exhausting its daily nomination of natural gas transportation service. In addition, for those years, CAISO states that it has no record of a resource operator informing it of an outage or de-rate as a result of the resource operator's inability to secure natural gas pipeline transportation services in the day-ahead timeframe, except in the case of a planned or forced outage of the pipeline facilities serving the operator's resource.

19. CAISO acknowledges that its day-ahead market processes occur after the close of the current Timely Nomination Cycle. According to CAISO, after it issues day-ahead market and residual unit commitment awards, natural gas-fired resources have sufficient time to secure any incremental natural gas transportation service to support their schedules through the Evening Nomination Cycle and intraday nomination cycles.²⁴

20. CAISO states that its existing day-ahead electric market timeline enhances reliability by accommodating the use of more up-to-date load and resource forecasts as well as a mechanism to address sudden natural gas price spikes. CAISO states that its day-ahead market clears bid-in demand with bid-in supply. CAISO claims that maintaining the current timeframe enhances reliability by allowing scheduling coordinators to use a more accurate load forecast closer to the trade date to bid their demand.

21. CAISO states that, according to market participants, the most liquid gas trading

²³ CAISO Compliance Filing at 4.

²⁴ *Id.* at 3-6.

period occurs daily between 5:30 a.m. PT (7:30 a.m. CCT) and 7:00 a.m. PT (9:00 a.m. CCT). These market participants have informed CAISO that the most liquid natural gas trading will likely continue to occur during these hours regardless of any change in the Timely Nomination Cycle. If CAISO moves the day-ahead market process to earlier in the day so that CAISO can publish market results in advance of the new Timely Nomination Cycle, CAISO states that it will need to close the day-ahead market to bids sometime around 7:00 a.m. PT (9:00 a.m. CCT) in order to complete CAISO's market runs, to obtain a feasible day-ahead solution based on bid-in demand, and to complete CAISO's residual unit commitment process.²⁵

22. Given the time required to run CAISO's bid formulation process (four to five hours), should CAISO have to move the processes to earlier in the day in order to publish market results before the new Timely Nomination Cycle close, CAISO states that some scheduling coordinators may lose gas price certainty. Instead, scheduling coordinators may need to forecast the natural gas price the night before or at least before actual morning natural gas trading begins to ensure there is enough time to run their bid formulation processes. According to CAISO, this approach could add a risk premium on top of the natural gas price forecast to account for additional natural gas price uncertainty. CAISO notes that two market participants estimated that the premium could have an annual financial impact of \$80 million to \$200 million for customers. CAISO represents that, in contrast, no stakeholders provided data to reflect an offsetting financial benefit to ratepayers from moving the day-ahead market processes to an earlier time in the day. Thus, CAISO maintains that changing the close of the day-ahead market to earlier in the day may decrease market efficiency by not reflecting actual production costs, increase uncertainty regarding bilateral trades in the region (thereby increasing day-ahead market prices), and lead to the underutilization of variable energy resources.²⁶

23. CAISO asserts that its existing day-ahead electric market processes accommodate scheduling coordinators' operational and business practices. CAISO claims that moving the day-ahead market close to earlier in the day would necessitate business process and staffing changes that could negatively affect some market participants' operations. CAISO states that market participants would need to alter the hours of their day-ahead schedulers unless they decided to submit all of their bids the day before the day-ahead market closes. CAISO adds that moving the close to earlier in the day would also negatively impact several of its business practices including: (1) the newly implemented manual natural gas price spike adjustment mechanism; (2) the CAISO proposed resource

²⁵ *Id.* at 8-9.

²⁶ *Id.* at 8-10.

adequacy rule regarding the timing of replacement resources; and (3) coordination with external balancing authority areas.

III. Notices, Interventions, and Pleadings

24. Notice of the 206 Order was published in the *Federal Register*, 79 Fed. Reg. 16,791 (2014). Motions to intervene or notices of intervention were filed by Algonquin Gas Transmission, LLC, America's Natural Gas Alliance, American Gas Association, American Public Power Association, Arizona Public Service Company, Atmos Energy Corporation, Atmos Energy Marketing LLC and Trans Louisiana Gas Pipeline, Inc., Atmos Pipeline Texas, Big Sandy Pipeline, LLC, California Department of Water Resources State Water Project (SWP), Calpine Corporation, Chesapeake Utilities Corporation, Cities of Santa Clara and Redding, California and the M-S-R Public Power Agency, Coalition of MISO Transmission Customers, Office of the People's Counsel of the District of Columbia, Delaware Division of the Public Advocate, Dominion Resources Services, Inc. (Dominion), Duke Energy Carolinas, LLC, Duke Energy Florida, Inc., Duke Energy Progress, Inc., Duquesne Light Company, Duquesne Power, LLC, Dynegy Marketing and Trade, LLC, East Tennessee Natural Gas, LLC, Edison Electric Institute, Electric Power Supply Association (EPSA), Exelon Corporation (Exelon), Gulfstream Natural Gas System, L.L.C., Interstate Natural Gas Association of America (INGAA), Macquarie Energy LLC, Maritimes & Northeast Pipeline, L.L.C., Maryland Public Service Commission, Mississippi Public Service Commission, Modesto Irrigation District, Morgan Stanley Capital Group Inc., National Rural Electric Cooperative Association, Natural Gas Supply Association (NGSA), New England States Committee on Electricity, New York Transmission Owners, Northern California Power Agency (NCPA), NRG Companies I,²⁷ Old Dominion Electric Cooperative, Ozark Gas Transmission, L.L.C., Pacific Gas and Electric Company (PG&E), Pennsylvania Office of Consumer Advocate, PJM Industrial Customer Coalition, Portland General Electric Company, Public Utilities Commission of The State of California, Puget Sound Energy, Inc., Repsol Energy North America Corporation, Southeast Supply Header, LLC, Southern California Generation Coalition, Texas Eastern Transmission, LP, Wabash Valley Power Association, Inc., Western Power Trading Forum (WPTF), Vermont Department of Public Service, Vitol Inc., and Xcel Energy Services Inc.

²⁷ NRG Companies I include NRG Power Marketing LLC, GenOn Energy Management, LLC, Cabrillo Power I LLC, Cabrillo Power II LLC, El Segundo Power LLC, NRG Delta LLC, NRG Marsh Landing LLC, NRG California South LP, High Plains Ranch II, LLC, Long Beach Generation LLC, NRG Solar Alpine LLC, NRG Solar Borrego I LLC, NRG Solar Blythe LLC, NRG Solar Roadrunner LLC and Avenal Solar Holdings LLC.

25. Notice of CAISO's compliance filing was published in the *Federal Register*, 80 Fed. Reg. 46,263 (2015), with interventions and protests due on or before August 18, 2015. Timely motions to intervene were filed by the cities of Anaheim, Azusa, Banning, Colton, Pasadena and Riverside, CA (Six Cities), EPSA, INGAA, NGSAs, the New York Transmission Owners, PacifiCorp, San Diego Gas & Electric Company (SDG&E), and WPTF.
26. EPSA, NCPA, NGSAs, NRG Companies II,²⁸ PacifiCorp, PG&E, SDG&E, Six Cities, and SWP each filed comments, while WPTF filed a protest. On September 2, 2015, as amended on September 3, 2015, CAISO filed an answer to the comments on and protests of its July 23, 2015 filing.
27. NCPA, PacifiCorp, PG&E, SDG&E, Six Cities, and SWP support CAISO's proposal to leave unchanged the time CAISO closes the day-ahead market and publicizes market results.²⁹ These commenters generally argue that there is no evidence of natural gas transportation problems in the CAISO market area and that the market currently operates efficiently and reliably.³⁰ As such, they argue that no changes to the market are necessary. They contend that changing the timing of the market close would introduce problems related to load and variable energy resource forecasting, staffing problems, could detrimentally impact reliability, decrease market efficiency, and negatively impact market operations.³¹
28. NGSAs support regional variation in responding to the 206 Order. NGSAs, however, urges the Commission and ISOs and RTOs to consider revising scheduling timelines in the future should pipeline capacity become constrained, particularly as states move to implement the Clean Power Plan.³²

²⁸ NRG Companies II are NRG Power Marketing LLC and GenOn Energy Management, LLC.

²⁹ NCPA Comments at 1; PacifiCorp Comments at 1-2; PG&E Comments at 1; SDG&E Comments at 2-3; Six Cities Comments at 2; and SWP Comments at 1-2.

³⁰ PacifiCorp Comments at 3; PG&E Comments at 1-2; Six Cities Comments at 2-3; SWP Comments at 1-2; SDG&E Comments at 3.

³¹ NCPA at Comments 2-3; PacifiCorp Comments at 3-4; SDG&E Comments at 3; Six Cities Comments at 3; SWP Comments at 2;

³² NGSAs Comments at 4-8.

29. EPSA states that the choices CAISO offered for stakeholder consideration in Docket No. EL14-22-000 were conservative and likely overly limited or narrow.³³ While EPSA does not oppose CAISO maintaining its day-ahead market solve time (i.e. the time period between the close of the day-ahead market and the publication of the day-ahead market results) at three hours, it believes the window could be condensed.

30. EPSA and WPTF state that, based on events in California during June 30-July 1, 2015, CAISO's forecasting processes appear to be flawed and inefficient.³⁴ They also contend that CAISO's market optimization does not include natural gas supply constraints. Thus, they state, CAISO can issue financially binding schedules despite generators' inability to obtain natural gas to deliver power. According to EPSA and WPTF, CAISO's rules do not excuse generators from their financially binding day-ahead schedules. EPSA and WPTF argue that the combination of these two factors – a CAISO market optimization that does not honor natural gas supply constraints and has no *force majeure* protection – disadvantages natural gas-fired generators and demonstrates a market inefficiency that underlies poor electric and natural gas market coordination in CAISO.³⁵

31. WPTF takes no position on whether submission of day-ahead bids should stay unchanged or move earlier in the day, but objects to CAISO's implication that the gas-electric nexus is operating flawlessly.³⁶ WPTF suggests that there are significant factors that CAISO needs to address in balancing its bidding enhancement process. WPTF states that these issues include the fact that: (1) not all natural gas can be traded at Timely Nomination Cycle natural gas prices or, for that matter, the day-ahead natural gas "index" price CAISO relies upon for several of its payment and market power mitigation calculations; (2) CAISO presumes that suppliers should bear all of the fuel cost risk despite the lack of any organized capacity market to provide revenue streams to mitigate these risks outside of energy market transactions; and (3) increasing penetration of

³³ EPSA Comments at 4-5.

³⁴ On June 30-July 1, 2015, CAISO's system experienced high demand and low imports, causing CAISO to dispatch natural gas-fired resources in the Los Angeles basin. CAISO Compliance Filing at 5 n.17. As a result of a pipeline outage, SoCal Gas curtailed natural gas supply to several of these resources. These curtailments required CAISO to dispatch additional units in Northern California to reduce the natural gas burn by generating units in Southern California. *Id.*

³⁵ EPSA Comments at 5-7; WPTF Comments at 5.

³⁶ WPTF Comments at 3.

renewables are putting increasing pressure on natural gas balancing markets for the California electric generation fleet.³⁷

32. NRG Companies II argue that CAISO's proposed day-ahead schedule does not satisfy the Commission's directive. NRG Companies II acknowledge that CAISO has faced different natural gas liquidity problems than the eastern ISOs and RTOs. NRG Companies II, however, argue that CAISO should have measures in place to address problems that might arise in the future. NRG Companies II cite the events during June 30-July 1, 2015, where CAISO notified generators of a natural gas curtailment after announcing day-ahead awards. NRG Companies II suggest that publicizing bids before the Timely Nomination Cycle would help generators in CAISO, during the winter months, when pipelines are more likely to operate under conservative balancing rules.³⁸ Further, NRG Companies II argue that the Commission should direct CAISO and the other ISOs and RTOs to reduce their solve times.

33. In response to some commenters, CAISO explains that it continues to enhance its coordination activities with natural gas pipeline operators.³⁹ CAISO indicates that one aspect of this effort is ensuring that CAISO and natural gas pipeline operators understand the operational limitations of each other's systems under both normal and constrained conditions. According to CAISO, it now provides information to the two large intra-state natural gas pipeline operators in California about daily gas usage on both a zonal and unit-specific basis subject to the terms and conditions of nondisclosure and use agreements. CAISO explains that this information reflects day-ahead schedules and awards, and allows each natural gas pipeline company to identify its natural gas pipeline loading requirements for natural gas-fired generating units one day in advance of actual flows. CAISO states that it also provides an estimate of daily natural gas usage two days in advance of an operating day to help manage electric and natural gas reliability. CAISO states that it expects this coordination will enhance natural gas pipeline operators' ability to identify potential issues before real-time and to reduce the number of unexpected natural gas curtailments.⁴⁰

34. Based on the events of June 30-July 1, 2015, CAISO notes that it has also requested that the large intrastate natural gas pipeline operators provide generating units with sufficient information about fuel supply constraints so that scheduling coordinators

³⁷ *Id.* at 4.

³⁸ NRG Companies II Comments at 4-6.

³⁹ CAISO Answer at 2.

⁴⁰ *Id.* at 4.

for these units have the opportunity to submit an outage card in CAISO's outage management system. CAISO indicates that this approach will enable it to dispatch resources down exceptionally when these resources face natural gas curtailments. According to CAISO, to the extent the scheduling coordinators receive information about fuel supply constraints from natural gas transmission operators before CAISO publishes the day-ahead market results, scheduling coordinators can use this process to mitigate the risk that they will receive financially binding day-ahead schedules and then face natural gas curtailments in real-time.

35. CAISO contends that the NRG Companies II fail to justify why CAISO should modify the timing of its day-ahead market close and publication of market results. While CAISO understands NRG Companies II's preference that market participants both know the price of gas in their day-ahead offers and are able to schedule the necessary natural gas quantities through the more liquid day-ahead Timely Nomination Cycle, it does not believe that NRG Companies II's proposal is practicable given the timing of natural gas trading in the West and market participants' bid formulation procedures. CAISO indicates that, according to market participants, the most liquid natural gas trading period occurs daily between 5:30 a.m. PT (7:30 a.m. CCT) and 7:00 a.m. PT (9:00 a.m. CCT). Thereafter, according to CAISO, market participants coordinate their natural gas purchases with the submission of economic bids into CAISO's day-ahead market. CAISO states that, according to market participants, this coordination process takes time to complete prior to bid submission and validation and that starting its market process at 7:00 a.m. or 7:30 a.m. PT (9:00 or 9:30 a.m. CCT) – in order to publish day-ahead market results before 11:00 a.m. PT (1:00 p.m. CCT) – is inconsistent with this timeframe.⁴¹

36. CAISO also argues that NRG Companies II's arguments that organized markets should protect against the risk of unexpected natural gas constraints is beyond the scope of this proceeding. CAISO contends that moving the day-ahead market process to earlier in the day so that market results are available before the Timely Nomination Cycle may not have any mitigating effect on unexpected gas constraints that arise in real-time. According to CAISO, moving the close of its day-ahead market and publication of market results is not necessary because, under normal conditions, natural gas-fired resources participating in CAISO's markets can obtain natural gas transportation service to support their day-ahead electric schedules. CAISO also contends that NRG Companies II's protest overstates the occurrence of natural gas curtailments for generating units in the CAISO balancing authority area and notes that the CAISO balancing authority area has not experienced the same fuel supply concerns involving natural gas transportation infrastructure that have occurred in the East.⁴²

⁴¹ CAISO Answer at 5-6.

⁴² *Id.* at 8-10.

37. CAISO contends that NRG Companies II's comments that the Commission should direct CAISO to reduce its three-hour solve time for the day-ahead market process, which CAISO sometimes exceeds, is also outside the scope of the 206 Order. CAISO asserts that the 206 Order did not notice or provide an opportunity for comment on whether the time periods for ISOs and RTOs to complete their day-ahead market processes are unjust, unreasonable or unduly discriminatory and did not direct ISOs and RTOs to shorten the time between the deadline for submitting day-ahead offers and the publication of market results.

38. CAISO explains that it is actively working to address recent delays in publishing day-ahead market results. In particular, CAISO has identified a number of causes for these delays, including the validation steps it takes after the software creates a market solution, an increased number of constraints associated with its full network model enhancements that make the market solution more complex, and problems with input data, and is working to address the causes with stakeholders.

IV. Discussion

A. Procedural Matters

39. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2015), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

40. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2015), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept CAISO's answer because it has provided information that assisted us in our decision-making process.

B. Commission Determination

41. We accept CAISO's compliance filing. We find that CAISO has shown cause why it need not publicize the results of its Day-Ahead Market in advance of the Timely Nomination Cycle. As CAISO represents, moving the close of the day-ahead market earlier could reduce the accuracy of demand, hydroelectric supply, and variable energy resource output forecasts. This could, in turn, have the unintended consequence of increasing uncertainty regarding natural gas volumes by discouraging schedulers from scheduling variable energy resources, leading them to schedule more natural gas-fired generators.⁴³ Increasing natural gas volume uncertainty contradicts the intent of the 206 Order to provide gas-fired generators with greater opportunity to procure sufficient

⁴³ See CAISO Compliance Filing at 6-8.

resources to fulfill their electricity market commitments and to contribute to reliable system operation.⁴⁴ Thus, given the prevalence of hydroelectric and variable energy resources in the West and California, we cannot find CAISO's proposal unjust and unreasonable at this time.

42. We also agree that, because CAISO schedules on Pacific Time instead of Eastern Prevailing Time, it essentially has three fewer hours to align day-ahead electric schedules with interstate pipelines' schedules than PJM, NYISO, ISO-NE, and, for part of the year, MISO.⁴⁵ As a result, when Eastern Prevailing Time ISOs and RTOs align their schedules with interstate pipelines, their 7:00 a.m. EPT (6:00 a.m. CCT on pipeline) forecast is three hours closer to actual load, and hence more accurate, than a contemporaneous 4:00 a.m. PT forecast. Thus, we find that the time zone difference further supports CAISO's retention of its current scheduling process at this time.

43. In addition, we find that CAISO has demonstrated that its current Reliability Unit Commitment process ensures that results are posted sufficiently in advance of the Evening Nomination Cycle to allow gas-fired generators to utilize the Evening Cycle to try and procure natural gas supply and pipeline transportation capacity they require to meet that commitment.

44. Although we find that CAISO has sufficiently explained why it does not need to modify its tariff at this time, we recognize, as NRG Companies II note, that further benefits could accrue from shorter market solve times. CAISO states that it "is actively working to address recent delays in publishing day-ahead market results,"⁴⁶ and we encourage CAISO to continue work with its stakeholders in an effort to improve market efficiency, to develop means to reduce its market solve times further, and to allow market participants to submit bids reflecting increased fuel price certainty. We note that reduced solve times may help enable CAISO to further modify its day-ahead schedule to allow natural gas-fired generators to receive the day-ahead market results prior to the Timely Nomination Cycle or otherwise improve market efficiency.

45. While the Commission accepts this compliance filing, the Commission finds that it

⁴⁴ 206 Order, 146 FERC ¶ 61,202 at P 16.

⁴⁵ MISO currently schedules on Eastern Standard Time, which is the equivalent of Eastern Prevailing Time during the period of the year *not* covered by Daylight Savings Time and the equivalent of Central Clock Time during the period of year covered by Daylight Savings Time (from mid-March through early November). SPP schedules on Central Clock Time year-round.

⁴⁶ See CAISO Answer at 9.

is important that CAISO continue its efforts to better coordinate the scheduling practices of the wholesale gas and electric industries. Thus, the Commission directs CAISO to submit an annual informational report in Docket No. EL14-22 on or before the anniversary of the publication of this Order for the next three years.⁴⁷ This report should explain ongoing efforts to further improve gas-electric coordination, including efforts to improve solve times. The informational report should also identify whether any natural gas fired generators within CAISO experienced any operational challenges related to gas-electric coordination issues, and identify what actions CAISO undertook to mitigate such events.

The Commission orders:

- (A) CAISO's compliance filing is hereby accepted, as discussed in the body of this order.
- (B) CAISO is hereby directed to file annual informational reports for three years, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

⁴⁷ We note that all of the reports directed in this order are for informational purposes only and will neither be noticed nor require Commission action.