

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**Coordination of the Scheduling Processes)
of Interstate Natural Gas Pipelines and)
Public Utilities)
_____)**

Docket No. RM14-2-000

**Response of the California Independent System Operator Corporation
to Data Request**

The California Independent System Operator Corporation hereby files this response to the data request received from the Director of the Federal Energy Regulatory Commission's Office of Energy Policy and Innovation on December 12, 2014.¹ As stated in the data request, as part of the above-captioned proceeding, the Commission has proposed to move the start of the gas day from 9:00 a.m. Central Time to 4:00 a.m. Central Time in part because of a concern that the current 9:00 a.m. Central Time start of the gas day occurs in the middle of the morning electric load ramp in some regions, creating a situation where electric load is increasing at the same time natural gas-fired generators may be running out of their daily nominations of natural gas transportation service. The Commission proposed to move the start of the gas day earlier, in part, to address instances in which natural gas-fired generators reduce their output during the morning electric ramp period to balance their remaining scheduled natural gas transportation capacity for that gas day.

¹ The data request issued pursuant to the delegated authority of the Director, Office of Energy Policy and Innovation set forth in 18 C.F.R. § 375.315(b)(2) which reads: "The Commission authorizes the Director or the Director's designee to issue and sign requests for additional information regarding applications, filings, reports and data processed by the Office of Energy Policy and Innovation[.]"

General Response

In response to the data request, the CAISO undertook a search of its current outage management system known as the scheduling and logging for the ISO of California or SLIC.² This system provides a platform for resource owners to communicate outage information to the CAISO for both planned and forced outages. The CAISO examined information in SLIC from 2013 and 2014. The CAISO identified instances in which it received notices of outages or de-rates from natural gas fired electric generators in each month during 2013 and 2014 and instances it received such notices between the hours of 3:00 a.m. and 9:00 a.m. Central Time. SLIC allows electric generators to use codes from the Generator Availability Data System used by the North American Electric Reliability Corporation. The CAISO examined de-rates and outages associated with the Generator Availability Data System code for fuel related issues as well as the SLIC card short description submitted with those de-rates and outages. The CAISO's responses to specific questions reflect this search.

Response to specific questions

- 1. During 2013 and 2014, how many times and during which months did natural gas-fired generators notify CAISO system operations that they were unavailable to run or had to reduce their output (i.e., de-rate)? How many times did they provide the above notification between the hours of 3:00 a.m. Central Time and 9:00 a.m. Central Time?**

Table 1 below reflects the number of noticed outages or de-rates by month for 2013 and 2014 submitted by natural gas-fired generators. Table 2 reflects the number

² The CAISO is working to implement a new outage management system on or before February 28, 2014. See generally *California Independent System Operator Corp.*, 148 FERC ¶ 61,168 (2014); *California Independent System Operator Corp.*, 149 FERC ¶ 61,285 (2014).

of noticed outages or de-rates by month for 2013 and 2014 submitted by natural gas-fired generators between the hours of 3:00 a.m. and 9:00 a.m. Central Time.

Table 1 - Noticed outages or de-rates by month for 2013 and 2014 submitted by natural gas-fired generators

Month	2013	2014
January	1220	1288
February	1040	1383
March	1132	1495
April	1221	1415
May	1609	1595
June	1598	1444
July	1653	1543
August	1755	1640
September	1666	1635
October	1627	1641
November	1526	1451
December	1620	1168

Table 2 - Noticed outages or de-rates by month for 2013 and 2014 submitted by natural gas-fired generators between the hours of 3:00 and 9:00 a.m. Central Time

Month	2013	2014
January	270	375
February	178	401
March	237	455
April	307	393
May	350	444
June	464	403
July	523	405
August	475	425
September	416	401
October	537	419
November	511	412
December	513	276

2. **During 2013 and 2014, on which dates did natural gas-fired generators notify CAISO system operations that they had to de-rate during the hours of 3:00 a.m. Central Time and 9:00 a.m. Central Time due to the generators having exhausted their daily nomination of natural gas transportation service prior to the end of the Gas Day? For each day, provide, for each**

hour 3:00 a.m. Central Time through 9:00 a.m. Central Time, (a) the total MW/hour de-rated; (b) number of generators de-rated; (c) total system load in MW/h; (d) the level of effective operating reserves in MW available to the RTO. In your answer, please define the morning ramp period for your region.

Based a reasonable search and diligent inquiry, the CAISO has not located any record of a natural gas-fired generator notifying the CAISO that the generator had to de-rate a unit during the hours of 3:00 a.m. and 9:00 a.m. Central Time because the generator exhausted its daily nomination of natural gas transportation service prior to the end of the gas day.

- i. For each day, for those generators identified in 2(b) above, specify the number of generators that were committed in the day-ahead market, but did not provide power at their day-ahead scheduled level.**

Based on its response to question 2, the CAISO has no responsive information to this question.

- ii. For each day, for those generators that comprise your response in 2(b) above, specify the number of generators that had received a real-time dispatch instruction to increase their power output from their day-ahead schedule. Also, provide the hour at which the real-time dispatch instruction was issued. For each occurrence provide the difference between the generator's day-ahead schedule and the ISO's real-time dispatch instruction for those units that de-rated.**

Based on its response to question 2, the CAISO has no responsive information to this question.

- iii. To the best of your knowledge, for each date of occurrence, specify the non-confidential system conditions on the relevant interstate natural gas pipeline(s) or Local Distribution Companies (LDCs), if applicable, that restricted transportation to the generator at the time**

the natural gas-fired generator(s) notified CAISO system operations that they were unavailable or had to de-rate (e.g., were pipeline Operational Flow Orders in effect)?

Based on its response to question 2, the CAISO has no responsive information to this question.

iv. If during any of these occurrences CAISO took extraordinary action to maintain adequate operating reserves, indicate the date and time, the actions taken and the MW/hour of relief obtained.

Based on its response to question 2, the CAISO has no responsive information to this question.

v. What were the operational and cost impacts of the occurrences?

Based on its response to question 2, the CAISO has no responsive information to this question.

3. Do the generators that comprise your response to 2(b) above share any common characteristics? For example, do natural gas-fired generators located on certain interstate natural gas pipelines de-rate more frequently? Do smaller natural gas-fired generators de-rate more frequently than larger natural gas-fired generators?

Based on its response to question 2, the CAISO has no responsive information to this question.

4. How often has CAISO committed generation out of merit order in anticipation of natural gas-fired generators running out of their nominated gas transportation at the end of the Gas Day?

The CAISO does not believe it has committed generation out of merit order in anticipation of natural gas-fired generator running out of their nominated gas transportation at the end of the gas day. The CAISO, however, has committed generation out of merit order based on system conditions involving scarcity of gas supply to natural gas-fired generation in its balancing authority area.

5. Please describe any efforts CAISO has made to minimize the risk that natural gas-fired generators may run out of natural gas during the morning electric ramp.

The CAISO's day-ahead market closes at 10:00 a.m. Pacific Time the day prior to the operating day. This timing occurs after the natural gas timely nomination cycle by design, so market participants have the opportunity to purchase the bulk of their gas prior to submitting bids into the CAISO market thereby allowing for greater price certainty when scheduling coordinators for natural gas-fired generators submit day-ahead energy bids. When the CAISO issues day-ahead market awards, participants can purchase any incremental natural gas in the evening nomination cycle since CAISO issues day-ahead market results in between these two cycle timings. The CAISO clears the vast majority of its real-time energy needs through the day-ahead market and generally has predictable forecasts of electric load. As a result, natural-gas fired generators generally have a clear understanding of their fuel needs across the entire operating day, including the morning electric ramp. This visibility provides

an opportunity for natural gas-fired generators to balance their transportation service over the gas day.

In addition, as part of its ongoing coordination activities with natural gas-fired generators, the CAISO prepares daily gas burn rate reports for each natural gas pipeline serving generators in its balancing authority area. These reports reflect day-ahead awards and allow each gas pipeline company to identify their gas line loading requirements one day in advance of actual flows. The CAISO is also deploying this process two days in advance, allowing an estimate at two-days and one-day before an operating day to help manage electric and gas reliability. As a result, gas pipeline operators have greater visibility over fuel needs of their natural gas-fired generator customers during the morning electric ramp.

Finally, the CAISO coordinates approval of electric generation and transmission outages with outages occurring on natural gas pipeline systems, so system impacts can be assessed across both systems, allowing for greater electric and natural gas reliability. Under this process, the CAISO and pipeline operators can optimize gas and electric system outages where possible. This coordination enhances the likelihood that sufficient gas supply will exist for natural gas-fired generators during the morning electric ramp.

6. Please provide any additional information relevant to this data request.

Based on the CAISO's response to this data request, the CAISO believes that natural gas-fired generators operating in the CAISO balancing authority

generally do not face problems securing sufficient fuel to meet the morning electric ramp under existing electric and gas market timelines.

Dated: January 14, 2015

Respectfully submitted,

By: /s/ Andrew Ulmer

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CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 14th day of January, 2015.

S/ Sarah Garcia

Sarah Garcia