UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	**)** **)**	**Docket No. ER17-2568-000**

ANSWER OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
TO COMMENTS OF THE DEPARTMENT OF MARKET MONITORING

The California Independent System Operator Corporation (CAISO) files this answer to the comments submitted by the Department of Market Monitoring (DMM) for the CAISO.[1] The Commission should accept the CAISO's September 29, 2017 tariff amendment as filed to (1) maintain in effect for an additional 12 months (*i.e.*, until November 30, 2018) interim tariff provisions previously accepted by the Commission to address the limited operability of the Aliso Canyon gas storage facility (Aliso Canyon), and (2) make permanent and modify other tariff provisions the Commission previously accepted on an interim basis to address potential gas limitations (Aliso Phase 3 Tariff Amendment).[2]

These tariff provisions are necessary to ensure the CAISO has available just and reasonable measures to address any risks to electric grid reliability in

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1 The CAISO files this answer pursuant to Rule 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R., § 385.213. Rule 213 "permits answers to comments and other types of pleadings not specifically prohibited" by the rule. *Gulf S. Pipeline Co.*, 155 FERC ¶ 61,287, at P 41 n.43 (2016). DMM filed its comments six days out of time and consequently the CAISO is filing this answer only today.

2 The CAISO explained in the Aliso Phase 3 Tariff Amendment that there have been three Commission proceedings on CAISO tariff amendments to address Aliso Canyon-related issues: the Aliso Phase 1 and Aliso Phase 2 proceedings, which are completed, and the Aliso Phase 3 proceeding. Transmittal letter for Aliso Phase 3 Tariff Amendment at 8-15.

light of anticipated gas pipeline system constraints in the upcoming months. The currently effective interim measures expire on November 30, 2017 and, unless the Commission approves the tariff amendment, the CAISO will then have only exceptional dispatch authority to deal with the gas limitation issues. As cautioned by Commission Staff in its Winter 2017-18 Energy Market Assessment, not only may operational constraints at the Aliso Canyon facility continue to pose risks to the functioning of natural gas and electric markets in Southern California, but also outages of crucial Southern California Gas Company (SoCalGas) pipelines may limit flexibility or constrain gas available to electric generation in the region. The Staff further cautioned that these "risks could also be magnified by upstream pipeline issues, like further outages or wellhead freeze-offs."[3]

The risks to electric reliability in light of gas constraints are real and cannot be ignored. It would be imprudent to deprive the CAISO of tools it has available at this time to address electric reliability issues effectively during these uncertain times. Further, regardless of when or if Aliso Canyon becomes operational, the CAISO has been working with stakeholders consistent with Commission direction to develop the right set of tools it needs to operate the electric system reliably in the likely event that it will at some point face gas constraints in a part of its

[3] Winter 2017-2018 Energy Market Assessment, Docket No. AD06-3-000, at slide 12 (Oct. 19, 2017). Similar concerns were expressed in a letter filed in Docket Nos. AD06-3-000 and AD16-24-000 on October 30, 2017 by SoCalGas executives Mike Bardee, Director, Office of Electric Reliability, Joe McClelland, Director, Office of Energy Infrastructure Security, Anna Cochrane, Director, Office of Energy Market Regulation, Larry Parkinson, Director, Office of Enforcement, Janel Burdick, Director, Division of Energy Market Oversight, and James Danly, General Counsel.

market footprint. The measures proposed in the Aliso Phase 3 Tariff Amendment further this goal and provide the CAISO the tools it will need in the near future to address such gas system constraints.

Neither DMM nor any other intervenor opposes the Aliso Phase 3 Tariff Amendment.[4] DMM does not even suggest any changes to the tariff provisions the CAISO proposes. Indeed, "DMM supports the extended and expanded authority sought under the CAISO's proposed tariff revisions."[5] DMM explains that "the CAISO made a number of modifications and clarifications to address the recommendations and concerns DMM expressed during the CAISO's stakeholder, [CAISO Governing] Board approval and tariff drafting process."[6]

DMM does, however, offer recommendations related to the following measures the CAISO proposed in the Aliso Phase 3 Tariff Amendment:

- Maintaining for an additional 12 months the existing interim tariff provisions to improve the accuracy of the gas commodity price indices the CAISO uses to calculate commitment costs (*i.e.*, start-up costs, minimum load costs, and multi-stage generating resource transition costs) for gas-fired resources subject to the proxy cost methodology, generated bids, and default energy bids subject to the variable cost option that are used in the day-ahead market, by reflecting the most recent gas commodity price information.

- Maintaining for an additional 12 months the existing interim tariff provisions to allow the CAISO to use an increased gas price to calculate commitment costs, generated bids, and default energy bids for the real-

[4] The following entities filed only motions to intervene: the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California; the City of Santa Clara, California and the M-S-R Public Power Agency; the Modesto Irrigation District; the Northern California Power Agency; NRG Power Marketing LLC and GenOn Energy Management, LLC; Pacific Gas and Electric Company; San Diego Gas & Electric Company; and Southern California Edison Company. Puget Sound Energy, Inc. filed comments supporting without further recommendations the third CAISO proposal listed above.

[5] DMM at 23.

[6] *Id.*

time market as appropriate for resources receiving gas service from SoCalGas and San Diego Gas & Electric Company (SDG&E).

- Making permanent and expanding the geographic scope of the CAISO's existing interim tariff authority to implement a gas constraint that limits the maximum amount of natural gas that can be burned by resources in the SoCalGas and SDG&E gas regions of the CAISO balancing authority area.

The CAISO appreciates DMM's comments and believes they are appropriately addressed in ongoing CAISO stakeholder efforts to improve its market rules, outside of this Commission proceeding. As explained below, the additional recommendations that DMM provides are beyond the scope of the Commission's proceeding and, where applicable, the CAISO will consider DMM's comments in the ongoing stakeholder initiatives and in the business practice manual (BPM) change management process.

I. Answer

A. The Commission Should Maintain on an Interim Basis the Tariff Provisions to Improve the Day-Ahead Gas Price Methodology

In the Aliso Phase 3 Tariff Amendment, the CAISO proposed to maintain for an additional 12 months the existing interim tariff provisions the Commission previously accepted to improve, by reflecting the most recent gas commodity price information, the accuracy of the gas commodity price indices the CAISO uses in the day-ahead market to calculate commitment cost caps for gas-fired resources subject to the proxy cost methodology, to calculate generated bids, and to calculate default energy bids subject to the variable cost option.[7] DMM

[7] *See* transmittal letter for Aliso Phase 3 Tariff Amendment at 16-20.

does not oppose the CAISO's proposal to extend the proposed price index procedure to be used in the day-ahead market for an additional year. In fact, the DMM recommends that the CAISO should implement this procedure on a permanent basis, claiming that the CAISO can easily do so and because the provisions have substantially improved the accuracy of the gas commodity price indices.[8]

The Commission should continue the effectiveness of the tariff provisions on an interim, 12-month basis rather than make them permanent. As explained in the Aliso Phase 3 Tariff Amendment, the CAISO agrees that the tariff provisions improve the accuracy of the gas commodity price indices – which is why they should be maintained for an additional 12 months. However, the provisions should remain in effect on an interim basis while the CAISO works to develop various means of determining the gas costs used in the day-ahead market as part of the ongoing Commitment Costs and Default Energy Bids Enhancements (CCDEBE) stakeholder initiative. That initiative, in which DMM is participating, will result in tariff enhancements currently planned to go into effect as of fall 2018, *i.e.*, before the 12-month interim extension period ends.

Contrary to DMM's suggestion, the CAISO has not foreclosed the possibility of adopting the updated index procedure as part of the CCDEBE enhancements. Rather, the CAISO is continuing to consider whether this procedure will be necessary in light of the changes it ultimately develops as part of that stakeholder process, and if it is, what enhancements it can make to

[8] DMM at 2-5, 23.

automate further the procedure. At the end of the CCDEBE stakeholder initiative the CAISO will propose any further tariff changes to the extent they are needed.[9]

DMM's proposal to make the tariff provisions permanent is beyond the scope of this proceeding, which in relevant part concerns only whether the tariff provisions should be temporarily extended until the CAISO and stakeholders develop means of determining the gas costs used in the day-ahead market as part of the CCDEBE initiative.[10] The fact that DMM believes the measure should be permanently in effect is not cause to reject the CAISO's proposal to maintain the measure for the next 12 months. Moreover, adopting DMM's proposal at this time would be an end-run around the CCDEBE initiative and thus arguably would undermine the CAISO's obligation, pursuant to a Commission directive in the Aliso Phase 2 proceeding, to "consider other types of longer-term market enhancements . . . in its stakeholder processes."[11]

DMM quotes discussion from the draft final proposal for CCDEBE regarding the challenges to making the improved determination of gas costs for the day-ahead market a permanent and automated measure, in place of the

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[9] Transmittal letter for Aliso Phase 3 Tariff Amendment at 14-15, 19.

[10] The matter before the Commission is to determine whether the CAISO's proposal, not DMM's proposed alternative, is just and reasonable. "Pursuant to section 205 of the FPA [Federal Power Act], the Commission limits its evaluation of a utility's proposed tariff revisions to an inquiry into 'whether the rates proposed by a utility are reasonable – and not to extend to determining whether a proposed rate schedule is more or less reasonable to alternative rate designs.'" *Cal. Indep. Sys. Operator Corp.*, 141 FERC ¶ 61,135, at P 44 n.43 (2012), quoting *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984). Therefore, "[u]pon finding that CAISO's proposal is just and reasonable, [the Commission] need not consider the merits of alternative proposals." *Id.* at P 44.

[11] *Cal. Indep. Sys. Operator Corp.*, 157 FERC ¶ 61,151, at P 29 (2016) (Aliso Phase 2 Order).

interim and manual measure those challenges compel the CAISO to use now. But DMM attempts to wave away the challenges the CAISO has experienced by asserting that it would actually be a simple and straightforward matter to make the measure permanent and automated.[12] The CAISO assures DMM and the Commission that the description in the CCDEBE draft final proposal is accurate. The challenges to automating and making the measure permanent are real and will require a significant amount of time and effort to resolve – if they can be resolved at all. The Commission should maintain the effectiveness of the tariff provisions on a continued interim basis, as the CAISO proposes, while the CAISO continues those efforts and the discussion with DMM and the other stakeholders in the ongoing CCDEBE initiative.

B. The Commission Should Maintain on an Interim Basis the Tariff Provisions Authorizing the CAISO to Adjust Gas Prices for the Real-Time Market

In the Aliso Phase 3 Tariff Amendment, the CAISO proposed to maintain for an additional 12 months the existing interim tariff provisions the Commission previously accepted to allow the CAISO to use an increased gas price – sometimes called a scalar or a gas adder – to calculate commitment costs, generated bids, and default energy bids for the real-time market as appropriate for resources receiving gas service from SoCalGas and SDG&E. The initial setting of the scalar for commitment costs and generated bids is 75 percent (*i.e.*, 175 percent of the gas price) and for default energy bids is 25 percent (*i.e.*, 125

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[12] DMM at 5.

percent of the gas price). The CAISO has adjusted these settings from time to time.[13] They are currently set at their original 75 percent and 25 percent levels.[14]

DMM "supports the CAISO's request for another temporary extension of CAISO's authority to re-set the gas cost adders above 100 percent if appropriate due to a change in gas market conditions."[15] DMM also recommends that the CAISO begin to develop, as a replacement for that extended authority, a mechanism for updating gas prices used in the real-time market based on same-day gas market data available each morning.[16]

DMM's recommendation for a replacement mechanism is beyond the scope of this proceeding on the extension of the CAISO's current interim scalar authority, which DMM supports. The CAISO explained in the Aliso Phase 3 Tariff Amendment that it agrees with DMM that it is important to monitor the performance of the scalars and commits to continue evaluating the market to determine whether they remain effective in achieving their goals or should be adjusted to achieve those objectives. The CAISO will discuss any such adjustments with DMM.[17] Thus, the CAISO will continue to satisfy the directive in the Aliso Phase 2 Order to "closely monitor the effectiveness of the gas adders and their impact on market behavior and to make any revisions to the gas

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[13] *See* transmittal letter for Aliso Phase 3 Tariff Amendment at 20-25.

[14] The CAISO announced these settings in a market notice issued on October 22, 2017.

[15] DMM at 7.

[16] *Id.* at 2, 6-12, 23.

[17] Transmittal letter for Aliso Phase 3 Tariff Amendment at 25.

adders, which could include downward, as well as upward adjustments, that may become warranted and to notify market participants accordingly."[18]

DMM suggests that using an updated real-time gas price index is sufficient to address the issues the CAISO intends to address with the scalars. The CAISO respectfully disagrees. As discussed in the Aliso Phase 3 Tariff Amendment, the CAISO adopted the scalars to provide greater bidding flexibility to generators in affected areas so that they can better reflect costs not captured by the indices. Specifically, the CAISO explained that the scalars are necessary to differentiate between generators that are at risk of violating gas-balancing rules and those that have gas available to respond to dispatch. This allows the market dispatches to reflect operational constraints on the gas system. For example, this may occur when generators are faced with low operational flow orders (OFOs) in particularly constrained areas due to drops in pipeline pressure because nominated gas is lower than the actual gas demand. Generators that have imbalances outside the tolerance band and are unable to procure gas and nominate flow to reduce such imbalances face either curtailments or noncompliance penalties. The interim scalars permit such generators to hold or reduce their gas burns by bidding into the CAISO market at higher costs, which decreases the likelihood that the real-time market will dispatch resources in those constrained areas.[19]

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[18] Aliso Phase 2 Order at P 30.

[19] Transmittal letter for Aliso Phase 3 Tariff Amendment at 21-23.

DMM provides data that purportedly supports its position that if the "CAISO developed the ability to adjust gas costs used in the real-time market based on observed prices on ICE [the Intercontinental Exchange] the morning of each operating day, gas costs used in the real-time market during this period would have been closely aligned with actual costs for gas purchased in the same day market."[20] The CAISO believes that although this data is helpful to understand the historical experience with gas constraints, it does not support a conclusion that an update to the index would be sufficient to reflect the costs a generator expects to face in any given hour as a result of the unanticipated constraints on the congestion system.

As discussed above, the purpose of the scalars is to move the gas burn away from the gas constrained areas. The CAISO evaluated the frequency with which market participants used the scalar associated with minimum load cost this past year. Figure 1 below shows how frequently market participants with resources in the SoCalGas and SDG&E regions bid their minimum load cost, which is a component of commitment costs, below or above the maximum allowed cost based on a 100 percent gas price index (with the cap on minimum load costs being set at 125 percent of the proxy cost[21]). Figure 1 also shows how frequently participants bid their minimum load cost using the additional headroom provided when the scalar was set at 175 percent on the gas price.

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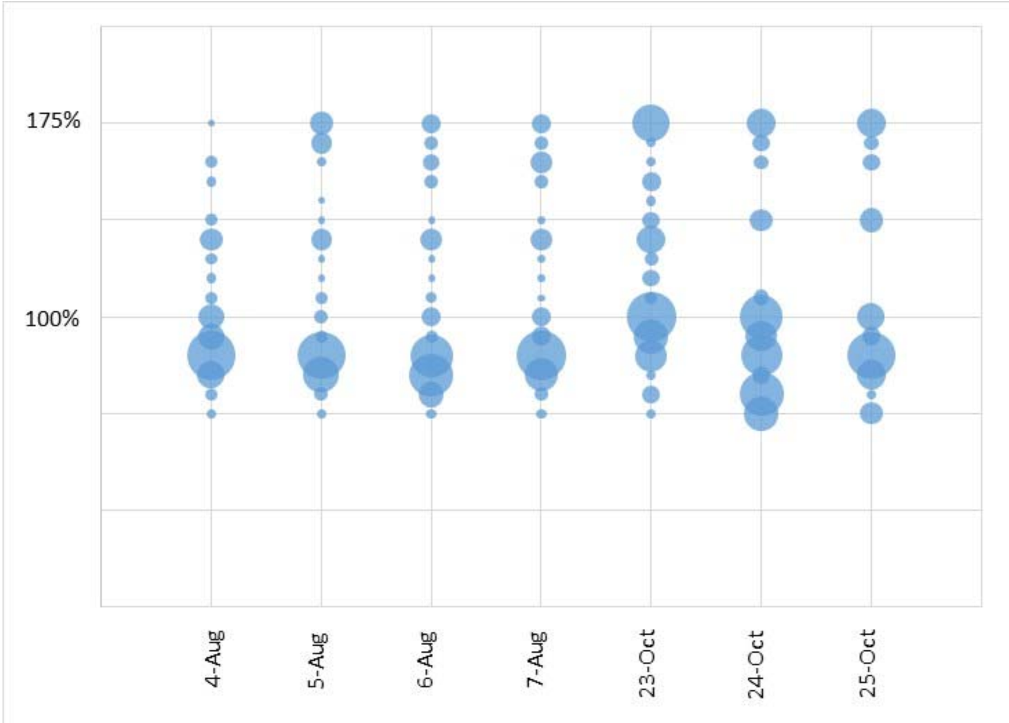
[20] DMM at 11.

[21] Section 30.7.10.1 of the CAISO tariff. Minimum load costs may also be adjusted due to temporary increases in minimum load as specified in section 30.7.10.2 of the CAISO tariff.

Figure 1: Frequency of Minimum Load Costs Bid in the Market



The size of each bubble in Figure 1 shows the relative frequency of bids at the respective percentage. The larger the bubble, the greater the instances of bids submitted at that percentage. Figure 1 shows that market participants did in fact use the additional headroom on those days for which the CAISO set the commitment cost scalar to 175 percent, but not all.

Neither the DMM data nor the data reflected in Figure 1, however, reflects the actual costs incurred and whether the costs on the system increased. In order to determine how the scalar affected the costs, the CAISO would have to evaluate the costs of all the resources actually committed with the scalar "turned on" relative to those committed with the scalar "turned off". Such an analysis is not readily available. However, it is also not appropriate to judge the merits of the scalar based on whether the costs increased or decreased. DMM's assertion that costs increased is not based on such an assessment and DMM erroneously suggests that this is an adverse potential outcome of applying the scalars. DMMs conclusion seems to be based on the assumption that simply because the scalars are turned on, all resources using the scalars are dispatched. This is incorrect. The scalars provide the additional headroom to allow the CAISO to not dispatch a particular resource if it is facing gas system constraints. If the CAISO nevertheless dispatches the resource, the additional headroom ensures that the resource's costs are recovered.

DMM also mistakenly focuses its explanation on actual costs incurred, though it is unclear whether DMM is citing any actual costs in its comments. The scalars are intended to allow generators to reflect their *expected* costs in their bids so that the CAISO can account for potential gas constraints in a given area. At the time scheduling coordinators are expected to submit their bids, the resources may not be able to determine definitively that they will face a penalty. However, they may be aware that such a possibility exists and with the scalars in place, resources could reflect such expectations in their bids.

The scalars allow the market to recognize this and avoid dispatching the resource, thereby respecting gas system operational constraints. In that case, these costs may not actually be incurred. Moreover, the primary reason for using the scalar is to ensure that resources have sufficient flexibility to offer their expected costs during constrained gas periods so that the resources in the SoCalGas and SDG&E regions are limited to dispatches for local reliability needs to limit additional strain on the gas system. Therefore, the effectiveness of the scalars depends on whether the CAISO was successful in shifting any of the gas utilization outside of the SoCalGas and SDG&E regions and thus relieving some of the stress on resources. Secondarily, the scalars provide an opportunity for the resources that are actually incurring higher gas costs to recover those costs that would otherwise not be recoverable due to the 125 percent commitment cost cap. This ensures that resources that have options either not to offer or to run while remaining available for dispatch. The higher expected commitment costs allowed by the scalar ensure that system needs are met by resources outside of the constrained area and do not exacerbate reliability concerns on the gas system. The CAISO expects the resources would be using the additional bidding flexibility to reflect expected cost exposures.

Consistent with the rationale for adopting the scalars, the analysis the CAISO used to establish the initial settings of the scalars identified the amount of additional headroom needed to move resource commitments for system needs outside of the SoCalGas and SDG&E regions during constrained gas periods. The analysis compared the relative costs of the gas-fired resources inside the SoCalGas and SDG&E regions with the costs of gas-fired resources outside of that region to determine what level of additional costs would be necessary to limit their dispatch for system needs. The CAISO determined the 175 percent scalar for commitment costs to be appropriate to ensure that during tight gas supply periods, based on the relative cost profiles, that resources in the SoCalGas and SDG&E regions would only be dispatched for local reliability needs. The analysis suggested by DMM, however, is largely irrelevant, as the relative cost of resources does not change significantly with changes in gas prices.

The CAISO does not believe that updating the gas price index used by the real-time market, as DMM recommends, would provide generators with greater flexibility to reflect their expected costs. First, as discussed above, the gas price information available to resources will not capture the resources' expected exposure to costs related to the procurement of gas, such as penalties in the event that the gas system is constrained. Second, DMM's proposal is for the CAISO to calculate and index based merely on a limited amount of available same-day trade information on ICE that typically does not reflect a high volume of gas transactions. This leads the CAISO to believe that this information alone is unlikely to reflect actual costs that generators may incur in the real-time. The CAISO agrees with the Commission's assessment of this matter in Order No. 831, in which the Commission stated that "information about the short-run fuel costs of certain natural gas-fired resources may be limited when natural gas supplies are scarce because publicly available natural gas indices may not be representative of the price that such resources actually pay for fuel."[22]

For all these reasons, the Commission should not agree with DMM's recommendation that merely attempting to update the gas price index used by the real-time market, based on the limited amount of same-day gas trade information available on ICE, will provide market participants with the sufficient

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[22] *Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 831, 157 FERC ¶ 61,115 at P 84 (2016).

bidding flexibility needed in the CAISO market to reflect potential costs associated with doing business on the constrained gas system.

C. The Commission Should Accept the Tariff Provisions to Make Permanent and Expand the Geographic Scope of the Existing Provisions Regarding the Maximum Natural Gas Constraint

In the Aliso Phase 3 Tariff Amendment, the CAISO proposed to make permanent its existing interim, Commission-approved tariff authority to implement a gas constraint that limits the maximum amount of natural gas that can be burned by resources in the SoCalGas and SDG&E gas regions of the CAISO balancing authority area. The CAISO also proposed to expand the geographic scope of that tariff authority to include all areas in which the CAISO operates a market, including the rest of the CAISO balancing authority area as well as the balancing authority areas of the Energy Imbalance Market (EIM) entities.[23] In addition, the CAISO proposed to make permanent the existing interim tariff provisions to address market issues related to the enforcement of the maximum gas constraint.[24]

DMM states that "[w]hile it does not oppose expansion of this authority at this time, DMM recommends that the CAISO implement refinements and gain additional experience in the SoCal gas region before actually expanding usage of the constraint to other parts of the CAISO or EIM."[25] Specifically, DMM recommends that the CAISO make "software and process enhancements" to modify the penalty prices associated with violating gas usage constraints,

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23 *See* transmittal letter for Aliso Phase 3 Tariff Amendment at 26-39.

24 *See id.* at 39-41.

25 DMM at 12-13.

improve how gas usage constraint limits are set and adjusted in real-time for the CAISO and EIM entity balancing authority areas, and incorporate gas usage limits in the CAISO's automated market power mitigation and EIM resource sufficiency tests.[26]

None of DMM's suggested refinements affect in any way the tariff provisions proposed in the Aliso Phase 3 Tariff Amendment. First, with regard to the penalty prices associated with violating gas usage constraints, the Aliso Phase 3 Tariff Amendment explained:

> The CAISO will continue to implement the maximum gas constraint using generation nomograms that include the generators within the affected areas. The nomogram will affect the congestion component of the relevant generators' locational marginal prices and have a relaxation parameter value (*i.e.*, a "penalty price") associated with relaxing the gas constraint. The CAISO will continue to apply this parameter to function appropriately relative to the parameters for other constraints enforced in the market and *has specified the parameter in the business practice manual for market operations*.[27]

Thus, the penalty prices are set forth in the BPM and are not reflected in the tariff provisions proposed in the Aliso Phase 3 Tariff Amendment. The Aliso Phase 3 Tariff Amendment went on to state that "[c]ontinued use of the constraint parameter in this manner is consistent with the finding in the Aliso Phase 1 Order that using generator nomograms with a penalty factor is an appropriate means of employing the gas constraint to ensure electric reliability."[28]

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[26] *Id.* at 2-3, 12-23.

[27] Transmittal letter for Aliso Phase 3 Tariff Amendment at 32 (emphasis added) (citation omitted).

[28] *Id.* (citing *Cal. Indep. Sys. Operator Corp.*, 155 FERC ¶ 61,224, at P 48 (2016)).

DMM notes the statement in the CAISO's July 2017 memorandum to the CAISO Governing Board (Board) that the CAISO "is in the process of [analyzing the penalty prices] and will propose changes to these parameters through the business practice manual change process."[29] The CAISO has also informed DMM that the parameter enhancement requires a software upgrade, which will be available in early 2018. Once the parameter enhancement can be implemented the CAISO will modify the BPM for market operations through its BPM change management process.

Turning to how gas usage constraint limits are set and adjusted in real-time, DMM correctly states that these implementation details for the CAISO balancing authority area are set forth in the BPM for managing the full network model.[30] Likewise, as explained in the Aliso Phase 3 Tariff Amendment, it is appropriate to develop through the BPM change management process, and then to document in the BPM for the EIM, implementation-level details regarding the process for using the maximum gas constraint in areas beyond the SoCalGas and SDG&E gas regions.[31]

DMM "believes that the usage gas constraint may not be more effective and reliable than exceptional dispatches, depending on how effectively the process of setting and adjusting the maximum gas usage constraint is done."[32] The CAISO respectfully disagrees. Once the constraint is developed for a given

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[29] DMM at 13 (citing page 6 of the memorandum also included in attachment E to the Aliso Phase 3 Tariff Amendment (Board Memorandum)).

[30] DMM at 15.

[31] Transmittal letter for Aliso Phase 3 Tariff Amendment at 39.

[32] DMM at 17.

area of the CAISO market footprint ahead of time, the CAISO will be able to enforce the constraint based on the assessment of the operators and operating engineers regarding the need for a particular area.

The CAISO and the EIM entity will do as the CAISO has done pursuant to its existing interim tariff authority as to gas constraints. That is, the CAISO and EIM entity will create and develop constraints to be used in specific areas. Those constraints will then be available even if they are not used all the time. Once the grid operators determine there is a need to enforce the constraint, the constraint can be enforced with less difficulty than using manual or exceptional dispatch would require. In using the constraint the operator will have to determine the desired gas burn limitation for a particular area, which will be adjusted based on the need in actual operations. Once that determination is made, the operator need not make adjustments for each individual generator. That is in contrast to what the grid operators would have to do in the event that they had to constrain a particular gas area through manual or exceptional dispatch. Under manual or exceptional dispatch, the operator has to determine ahead of time, or even in real-time, how much to constrain each generator. This is less ideal than using the gas constraint the CAISO proposes, for several reasons.

First, in using the gas constraint all the operator has to do is limit the gas burn for a designated area and then the market optimization determines the schedules or dispatches optimally for the generators in those designated areas based on submitted bids, transmission constraints, resources constraints and system conditions. In contrast, if conducting exceptional or manual dispatch, the operator has to determine what the optimal burn is for each generator and then issue a dispatch instruction to the resource consistent with the operator's determination. This is likely to be less optimal than the dispatch produced by the market optimization engine. It is also likely to create more stressful and error-prone conditions for operators were such issues to materialize in the real-time.

Second, as discussed in the Aliso Phase 3 Tariff Amendment, the use of the gas constraint in the market software means that the locational marginal prices for resources will reflect the cost of needing to constrain a particular area due to gas constraints.[33] In contrast, unless the CAISO can incorporate the exceptional or manual dispatches in the market runs, which is not always possible, the market solution will not reflect the cost of having to constrain the system.

Third, the use of the gas constraint is more effective in managing the system reliably because commitments, system conditions, and generation configurations change as the day unfolds. Normally, if the CAISO operators are aware of potential gas system constraints, and can only resort to exceptional dispatch to minimize the gas burn in particular areas, they would have to make those exceptional dispatches based on their best estimates of the system and resource conditions. Those assumptions can become outdated by the time the real-time arrives and may have require the operators to take further real-time exceptional dispatch actions to account for those changes. For example, an

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33 Transmittal letter for Aliso Phase 3 Tariff Amendment at 35.

operator may have made a best guess of what other resources are available, but if a significant de-rate occurs after the exceptional dispatches are established, the operator will have to reevaluate the dispatch decisions and ensure that the exceptional dispatches are still feasible. In contrast, because the gas nomogram used for the gas constraint is deployed for a given day or hours, the market will optimize available resources based on the system and resource constraints and will determine the optimal solution dynamically, including in contingency dispatches.

DMM notes that the CAISO included language in the tariff provisions specifically to address DMM's comments in the stakeholder process about using the maximum gas constraint effectively for physical limitations in EIM entity balancing authority areas. Nevertheless, DMM expresses concern that "it may be very difficult to actually utilize gas constraints effectively" for EIM entity balancing authority areas on "very short notice."[34] DMM conflates the two steps the CAISO will take to develop and implement each gas constraint. First, as stated in the Aliso Phase 3 Tariff Amendment, the CAISO has worked and will continue to work with DMM and other stakeholders when developing and defining the constraint for a given area. Second, once the constraint is developed and established for a specific area, the CAISO will also provide notice to DMM and market participants, to the extent feasible, when it plans on using the constraint.[35] It may not always be feasible, however, to provide notice in advance of when a

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[34] DMM at 17-18.

[35] Transmittal letter for Aliso Phase 3 Tariff Amendment at 38-39.

constraint will be used, because sometimes the CAISO has to take immediate action to address or prevent a reliability threat. This is no different from the CAISO's obligation to take immediate action to exceptionally dispatch resources to address or prevent a reliability issue. The CAISO may not have time to, nor should it be required to, coordinate with DMM to issue exceptional dispatch instructions.

DMM asserts that, "[i]n practice, EIM entities and participants have additional options [apart from the maximum gas constraint] for managing any physical gas limits that may develop before or during an operating day."[36] DMM states that those options include submitting bids only for an amount of capacity for which gas is available – since the EIM imposes no must-offer obligation – as well as submitting plant outages to reflect fuel limitations and setting limits on transfer constraints to limit or prevent transfers out of the EIM balancing authority area.[37] The CAISO does not disagree that the EIM entities or the CAISO have other options to managing the system reliably. Even in the CAISO balancing authority area, resources can simply not bid in (unless they are resource adequacy resources) or bid in at high levels to avoid being dispatched if they face gas constraints. However, DMM overlooks the reason for using the constraint in the first place. The use of the constraint is not intended to reflect economic decisions. The constraint is to be used only if the system operator has determined that there is a need to limit the gas burn in a particular area to

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[36] DMM at 18.

[37] *Id.* at 18-19.

maintain electric grid reliability in light of the gas constraints experienced on the gas pipeline system. Just as has been the case for the CAISO balancing authority area, the CAISO may have to limit the gas burn for the EIM entity balancing authority areas pursuant to the proposed tariff provisions. The purpose of using the gas constraint in the EIM entity balancing authority areas is the same.

As to the issue of incorporating gas usage limits in the CAISO's automated market power mitigation, DMM notes that "[t]he CAISO has agreed to work on automation, which it intends to implement by the end of 2018" and states that "stakeholder involvement and review will be appropriate in determining the details of how gas usage limits are incorporated in the CAISO's market power tests."[38] The CAISO concurs. The CAISO will include DMM and other stakeholders in developing the automated market power mitigation scheduled to be implemented by the end of next year. In the interim, if the CAISO determines that it should apply a maximum gas constraint, it will work with DMM to ensure that the current manual market power mitigation appropriately captures that constraint.

Lastly, regarding the issue of incorporating gas usage limits in the CAISO's EIM resource sufficiency tests, those tests are set forth in section 29.34 of the CAISO tariff, which the CAISO does not propose to revise in this proceeding.[39] DMM references the statement in the Board Memorandum that the

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38 *Id.* at 20 (citing transmittal letter for Aliso Phase 3 Tariff Amendment at 40-41).

39 *See Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,305, at P 112 (2015) ("We find that CAISO's existing tariff measures – including the balancing test, the ramping test, and a capacity

CAISO "commits to continue to monitor the impact of the gas constraint, as well as transmission constraints, on the efficacy of the EIM resource sufficiency test. [The CAISO] will consider modifications to the resource sufficiency test if the impact warrants the additional cost and complexity required to include such constraints in the EIM resource sufficiency test."[40] The CAISO will honor those commitments.

In sum, all of DMM's suggestions solely concern software and process refinements regarding tariff and BPM provisions other than the tariff provisions proposed in the Aliso Phase 3 Tariff Amendment. Therefore, those suggestions are beyond the scope of this proceeding. They can and will be addressed as appropriate in the applicable BPM change management process or future stakeholder initiative.

II. Conclusion

For the foregoing reasons, the Commission should accept the Aliso Phase 3 Tariff Amendment as filed.

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test – serve to both require and incentivize resource sufficiency in the EIM") (citing sections 29.34(k), -(l), and -(m) of the CAISO tariff).

[40] Board Memorandum at 7 (cited in DMM at 21-22).

Respectfully submitted,

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Dated: November 8, 2017

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service list for the above-referenced proceeding, pursuant to the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, CA this 8th day of November, 2017.

/s/ Anna Pascuzzo
Anna Pascuzzo