



Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market & Infrastructure Development

Date: September 29, 2016

Re: **Decision on Aliso Canyon gas-electric coordination phase 2 proposal**

This memorandum requires Board action.

EXECUTIVE SUMMARY

As detailed in Management's May 2, 2016 memorandum to the Board of Governors, the Aliso Canyon natural gas storage facility in southern California experienced a large natural gas leak significantly affecting many of the people that live and work in the area as well as the gas balancing tools available to gas users. The storage facility is a significant part of the gas system serving customers in the Los Angeles Basin and San Diego, including gas-fired electric generation. The leak has resulted in a dramatic reduction in the use of the storage facility, greatly limiting the flexibility of the Southern California Gas Company (SoCalGas) and San Diego Gas and Electric Company (SDG&E) systems to serve gas-fired electrical generators in the area.

Management's May 2016 memorandum proposed a coordinated set of operational and market tools to address risks to electrical reliability posed by gas system conditions over the summer. The Board approved these measures that were later conditionally approved by FERC to be effective through November 30, 2016.

Based on an inter-agency task force study completed this summer, the limitations resulting from the loss of the Aliso Canyon storage facility are expected to continue to stress the gas system this winter.¹ In response, Management initiated a second expedited process to work with stakeholders to evaluate which market mechanisms and operational tools should be extended to address ongoing risks due to the continued unavailability of the Aliso Canyon facility.

As a result, Management is proposing to extend most of these measures beyond their current November 30, 2016 expiration date. Upon Board approval, Management will submit tariff revisions to FERC seeking expedited consideration of mitigation measures with an

¹ <https://efiling.energy.ca.gov/getdocument.aspx?tn=212904>

effective date beginning at the sunset date, December 1, 2016. Given the short timeframe to develop these provisions and the request for expedited consideration by the Commission, and the expectation that the Aliso Canyon facility will not be operational during the bulk of 2017, Management proposes that the provisions be temporary and expire on November 30, 2017.

Moved, that the ISO Board of Governors approves the Aliso Canyon gas electric coordination phase 2 proposal, as described in the memorandum dated September 29, 2016; and

Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.

DISCUSSION AND ANALYSIS

Management originally proposed a set of temporary operational and market tools to address reliability concerns resulting from the limited use of the Aliso Canyon natural gas storage facility. The measures were proposed as temporary to allow the ISO and stakeholders to review their effectiveness over the summer and to assess whether these measures, or other measures, would be necessary to address any continued reliability risks. Management conducted a new stakeholder process to review the effectiveness of the current measures and to assess whether they are needed to address the continued reliability risks outlined in the winter inter-agency task force study. As a result of this process, Management proposes to extend all but one of these measures to meet the following two policy objectives:

- Provide operational tools that can be used through the market clearing process at ISO operators' discretion if needed to mitigate the risk of operating outside gas system limitations that are severely constrained due to the limited operability of Aliso Canyon to avoid electric service interruptions to the extent possible, and
- Ensure ISO markets produce prices that reflect gas system limitations to mitigate the risk that ISO dispatch could adversely impact gas operators' efforts to manage their systems reliably.

Operational tools

One of the primary operational tools originally implemented as part of the Aliso Canyon mitigation measures was a gas burn constraint. The ISO coordinates with the gas company to the extent possible in setting gas burn limitations of the constraint. The constraint is enforced when gas system limitations exist or operators have a concern that electric system dispatches could compromise gas system conditions which in turn could compromise electric grid reliability. Depending on gas system limitations, operators have the ability to apply the constraint in either, or both, the day-ahead and real-time markets. Operators also have the ability to apply the constraint for individual or groups of zones defined by the gas

system. The constraint, when binding, limits the dispatch of generators subject to the constraint and affects resource-specific prices used for dispatch and settlement purposes. However, it does not impact the locational marginal price used for other purposes including load, congestion revenue rights, and virtual bids settlement. The ISO will enforce the gas constraint to manage gas constraint issues only in the Southern California Gas and San Diego Gas and Electric gas regions.

Management proposes to retain the constraint in the ISO market processes that limits the affected area generators' gas burn, with one modification. Management proposes to modify the constraint to no longer enforce that gas burn be kept to a minimum amount. Based on experience over the summer, resources have the ability to meet imbalance limitations in which they need to burn a minimum amount of gas. They can increase the likelihood of operating at a certain minimum output by lowering their bid price or self-scheduling.

As a result of the gas burn limitation constraint, Management also proposes to extend related measures. First, Management proposes to extend the authority to deem selected internal transmission paths competitive or uncompetitive when the gas burn constraint is enforced in the ISO market processes based on a determination that the actual electric supply conditions may be uncompetitive. Second, Management proposes to extend the authority to suspend virtual bidding if it observes virtual bidding causes market inefficiencies when the gas constraint is enforced.

The operational measures originally implemented also included a provision that allowed the ISO to reserve transfer capability on internal transmission paths. Management proposes not to extend this authority. The reliability authority for the ISO balancing area, *Peak Reliability Coordinator*, recently modified its system operating limit methodology to allow a path's rated limit to exceed its rating under emergency conditions. As a result, the ability to reserve internal transfer capability is no longer needed to ensure sufficient transfer capability is needed in real-time to meet unexpected southern California needs.

In conjunction with this, Management proposes not to extend the provisions in which the ISO would potentially limit the amount of congestion revenue rights it releases in the monthly allocation and auction to be consistent with any reduced transfer capability in the day-ahead market.

ISO market modifications

In addition to the operational tools described above, Management proposes to extend the ISO market modifications originally approved in phase 1. This will continue to ensure ISO markets produce prices that reflect gas system limitations so that the risk that ISO dispatch could adversely impact gas operators' efforts to manage reliability is mitigated.

The first of these market modifications was to increase the gas cost estimate that is used to calculate the ISO real-time market commitment cost bid cap and default energy bids for generators on the SoCalGas/SDG&E systems. This modification allows generators' real-

time bid prices to better reflect gas system limitations and gas prices. This greater bidding flexibility increases the likelihood that the ISO market will only dispatch these generators for local needs and not for system energy that can be provided by generators not subject to gas limitations in other areas of the electric grid.

This modification provides for the ISO to increase these gas cost estimates in the real-time market by an amount that is:

- Sufficient to enable the ISO market to dispatch generators on the SoCalGas/SDG&E systems only for local electricity needs and not system electricity needs;
- Accounts for systematic differences between actual day-ahead and same day gas prices that are likely to be more volatile for same day purchases on the constrained gas systems; and
- Needed to improve generators' ability to manage gas company requirements on the constrained systems to limit differences between individual generator's gas schedules and usage (*i.e.*, gas balancing requirements).

The amount used in the commitment cost proxy cost calculation was initially set to scale the gas commodity price to 175 percent of the gas index price. The ISO monitors whether this level is effective in meeting the three objectives listed above. The provisions provide the ISO with the authority to adjust the scaling of the gas commodity price in the event that it is too high or too low based on observed electric and gas market outcomes. To date, the ISO has not observed the need to adjust this scaler.

The measures also include provisions to adjust the gas price used to calculate default energy bids, which are the incremental energy bids used when a generator's bid is mitigated in local market power mitigation. The gas price used in the default energy bid calculation was initially scaled to 125 percent of the gas commodity price. Similar to the proxy cost calculation, the ISO has the authority to adjust the scaling of the gas price used for default energy bid calculations up or down based on observed electric and gas market outcomes. The gas commodity price for default energy bids would be capped at 200 percent of the gas commodity price. The ISO has not observed the need to adjust this scaler.

The second market modification Management proposes to extend, applicable to all gas-fired generators, not just those in the affected area, is to improve the gas price information used by the ISO day-ahead market to establish commitment cost bid caps and default energy bids for mitigated energy offers. The gas price information currently used by the day-ahead market is based on gas trading occurring the previous day and consequently does not align with gas trading for the majority of the operating day for which the ISO's day-ahead market is being run. The gas trading for the majority of the operating day occurs in the morning before the ISO runs the day-ahead market. The ISO currently manually adjusts its gas prices in the event of a large gas price increase relative to the previous day based on an

updated index price received from the Intercontinental Exchange. Because the Intercontinental Exchange recently started publishing this updated index price at a time later in the day that makes this process infeasible, Management proposes to draw from the Intercontinental Exchange an index published between 8:00 a.m. and 9:00 a.m. Pacific Time that represents the price of fuel based on trades made on the Intercontinental Exchange at that earlier time. The earlier index produced by the Intercontinental Exchange the ISO will use consists of a volume weighted average price using trades observed during the Intercontinental Exchange next day trading window prior to the time it is published.

The third market modification Management proposes to extend is to make two day-ahead advisory market results available to scheduling coordinators. Making this advisory information regarding estimates of resources' day-ahead market schedules available to market participants allows them to consider this information in purchasing gas in the next day gas trading that primarily occurs before ISO day-ahead market results are available. Finally, the proposal includes three market modifications that the Board approved earlier this year as part of the bidding rules and commitment cost enhancements initiative. Management included these modifications as part of the phase 1 Aliso Canyon so that they could be implemented quickly to help address the Aliso Canyon reliability concerns. In August, the ISO filed these measures with FERC to be in effect on a permanent basis as previously approved by the Board in May. Because FERC has not yet issued an order approving these provisions, Management proposes to file with FERC to extend these provisions on a temporary basis until the later of the date on which FERC approves these provisions on a permanent basis, or November 30, 2017.

The first of these is to allow resources to re-bid commitment costs in the real-time market for hours for which they did not receive a day-ahead schedule and are not restricted by a real-time commitment. This is important to allow them to reflect gas costs and limitations in the real-time market. The second of these will result in the ISO market no longer automatically inserting bids into the real-time market for resources that had bid into the day-ahead market but did not receive a day-ahead schedule and that do not have a real-time must offer obligation. This will ensure the real-time market will not consider bids from generators that did not have an obligation to plan for gas procurement to operate in real-time from neither receiving a day ahead schedule nor having a real-time must offer obligation. The third market modification is to permit market participants to file with FERC to have the opportunity to recover incurred costs that exceed commitment cost bid caps not recovered through market revenues as the result of high marginal fuel procurement costs not being fully reflected in the bid cap.

Finally, in addition to permitting market participants to file with FERC to recover costs incurred that exceed commitment cost bid caps, Management proposes to extend the temporary measure to allow for similar recovery of costs that exceed the mitigated energy bid.

POSITIONS OF THE PARTIES

Stakeholders strongly support the ISO's proposal to retain the operational tools and market mechanisms as temporary measures.

Department of Market Monitoring and Western Power Trading Forum both strongly support the ISO's continued ability to adjust the scalars applied to the gas commodity price. Department of Market Monitoring also strongly supports improving the gas price information used by the ISO day-ahead market.

A number of stakeholders request the ISO provide additional documentation and procedures to increase the information it releases to the market related to these measures and its enhanced gas-electric coordination. ISO is already in the process of doing this where appropriate.

Department of Market Monitoring and PG&E both believe the ISO should pursue tariff revisions for price mitigation of incremental exceptional dispatches due to natural gas limitations. They also urge the ISO to develop a methodology to mitigate decremental exceptional dispatches. Management plans to examine this as part of an upcoming stakeholder process and could accelerate this if bidding practices appear to necessitate more expedient action.

NV Energy and Environmental Defense Fund support the ISO pursuing long-term market enhancements to its commitment cost and default energy bid designs. Management plans to examine long-term market enhancements in an upcoming stakeholder process.

CONCLUSION

Management requests Board approval of the proposal discussed above. The proposed market and operational tools will provide important functionality to mitigate the reliability impacts of the limited operability of the Aliso Canyon natural gas storage facility. The proposal includes flexibility so that the ISO can adjust the use of the new tools in line with market and reliability needs.