

## Memorandum

**To:** Energy Imbalance Market Governing Body

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

**Date:** July 6, 2017

**Re: Decision on Energy Imbalance Market Maximum Natural Gas Burn Constraint**

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***This memorandum requires EIM Governing Body action.***

### EXECUTIVE SUMMARY

Management proposes to make the maximum natural gas burn constraint, implemented last year in the southern California area in response to the limited operability of the Aliso Canyon natural gas storage facility, available for use in balancing areas that are part of the western energy imbalance market. The gas constraint, used prudently, is a valuable operational tool that will enhance electric system reliability by reflecting gas system limitations in the EIM.

Management proposes the following motion:

***Moved, that the EIM Governing Body approves the proposal to extend the use of the maximum natural gas burn constraint to the energy imbalance market; and***

***Moved, subject to Board of Governors' consent, that Management is authorized to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.***

### DISCUSSION AND ANALYSIS

The maximum natural gas burn constraint limits the market's dispatch of a group of generators on a constrained part of the gas system so that these generators in aggregate burn no more than a specified gas quantity. The gas burn constraint is a valuable operational tool used to ensure that electric system dispatches respect gas system operational limits which, if exceeded, could compromise electric system reliability. The ISO developed the gas burn constraint as part of various operational tools it developed last year to mitigate risks due to limited operability of southern California's Aliso Canyon natural gas storage facility. In coordination with the gas system operators, ISO operators

enforce the constraint during conditions for which they are concerned that if gas system limitations are exceeded the electric system reliability could be compromised. The ISO originally implemented the gas constraint as a temporary measure limited to generators affected by Aliso Canyon's limited availability. However, because of the constraint's importance in ensuring reliability, and because physical gas system limitations may develop elsewhere, Management now proposes to make the gas constraint a permanent feature for use throughout the ISO and EIM balancing areas when applicable.

### **EIM natural gas limitations**

Two particular situations exist in EIM balancing areas that would benefit from the gas constraint:

- There may be limitations on the amount of gas that generators can burn in excess of what they scheduled on the pipeline in advance. Gas storage is fairly limited for portions of the EIM, which requires gas system operators to forbid generators to burn unscheduled gas on high demand days to maintain the gas system within operational limits.
- Some gas generators in the EIM have limited firm pipeline capacity because the gas system reserves a share of the pipeline capacity for other gas customers. Although these generators may be able to use additional capacity on the pipeline if overall gas demand is low, they are limited to their firm pipeline capacity when gas demand is high.

The gas constraint offers additional protections to manage these limitations more efficiently than existing tools that include energy bid prices, outages reported to the market systems, and manual dispatch. The gas constraint can efficiently manage a group of generators' overall dispatch and gas burn.

### **Gas burn constraint use**

The ISO will enforce natural gas burn constraints established in EIM balancing areas as requested by EIM balancing area operators (i.e., EIM Entities) when needed to address current or anticipated gas system limitations. The EIM balancing area operator will communicate the maximum gas burn to be enforced and the portion of the gas system it applies to. Acceptable use of the gas constraint will be limited to addressing physical gas system limitations. The EIM balancing authority areas already have the ability to use manual dispatch to manage the gas burn on their system should there be such a need. The maximum gas burn constraint automates and allows the market to optimize what otherwise would be managed by EIM Entities through their existing manual dispatch authority. EIM entities will work with the ISO and the applicable gas system operator to define the gas burn constraints in advance. Only gas-fire participating EIM generators in the affected area will be subject to the constraint. The gas constraint, when binding, limits the dispatch of

those generators and affects resource-specific prices used for dispatch and settlement purposes. However, it does not impact the locational marginal price used for other purposes such as settling load or non-gas resources.

Finally, the gas burn constraint affects the ISO market's local market power mitigation test because it limits the amount of electric supply available from generators to below what would otherwise be available absent the gas burn constraint. The current automated market power mitigation test determines available supply based on energy bids. To address this issue, when the gas burn constraint is enforced, the ISO will have the authority to deem relevant transmission paths competitive or uncompetitive as part of the local market power mitigation test based on the amount of supply available, also considering the gas burn constraint.

## **POSITIONS OF THE PARTIES**

EIM participants generally support the proposal as a valuable tool to manage gas limitations that will more efficiently manage the limitations than existing tools. Arizona Public Service notes physical gas pipeline limitations and intra-day operational emergency conditions in the Southwest make it important for the market to be able to reflect gas constraints.

NV Energy, Puget Sound Energy, Pacific Gas & Electric, Portland General Electric and the ISO Department of Market Monitoring request the ISO document the detailed process for using the gas burn constraint, including acceptable limitations to be included in the constraint and the procedures for its implementation. DMM says it will not support the proposal unless this is done in advance. Management believes these details are more appropriately worked out with stakeholders in business practice manuals and commits to developing EIM-specific procedures that it will document in the EIM business practice manual. Management clarifies that the policy intent is for the constraint to be used in the EIM for physical limitations consistent with the guidelines previously developed for its use in southern California. Management also notes that when the EIM entity requests the use of a gas burn constraint in its area, the ISO and the EIM entity will have to design and tailor each constraint for each area. As the ISO does for use of such constraints in its own balancing authority area, the ISO will provide visibility and notice to the DMM and market participants on the characteristics and implementation of each constraint prior to implementation.

Portland General Electric does not oppose the gas burn constraint but emphasizes broader energy bidding rule changes the ISO is considering as part of the *Commitment Cost and Default Energy Bid Enhancements* initiative, or even more extensive, should be the priority. NRG opposes extending the constraint until the ISO implements enhancements resulting from that initiative. Management clarifies extending the gas burn constraint will not affect *Commitment Cost and Default Energy Bid Enhancements* planned for fall 2018 implementation.

The ISO Department of Market Monitoring requested the ISO alter the EIM resource sufficiency test to consider gas constraint limitations and to automate fully incorporating the gas constraint into the local market power mitigation process, which currently is a manual process. Management believes the electric supply limitations due to gas constraints are similar to transmission limitations, which are currently not considered by the sufficiency test. While there appears to be merit to incorporating these types of constraints into the resource sufficiency tests, Management commits to take up this issue in the future as part of broader resource sufficiency test modifications. Management plans to automate the gas constraint into the local market power mitigation test in fall 2018. In the meantime, it will evaluate the workload associated with the manual process for implementing any new gas constraints and will adjust the implementation schedule accordingly.

## **CONCLUSION**

Management requests the EIM Governing Body approve the changes described above. The gas burn constraint is an important operational tool to ensure that electric system dispatches respect gas system operational limits.