Generator Expectations During a Gas Curtailment or Operational Flow Order (OFO) User's Guide

Introduction:

On days when gas system reliability could be at risk, the Local Distribution Company (LDC), interstate or intrastate gas pipeline may invoke an Operational Flow Order (OFO) or issue other instructions restricting use of gas imbalance service. Unlimited use of balancing gas by generators could, in some circumstances, endanger gas system reliability. This document is applicable to all generators that are available but for potential fuel limitations.

When the Generator's LDC or pipeline has issued an OFO, or instructions restricting imbalance usage, the Generator may be subject to charges for incurring gas imbalances that exceed certain limited tolerances specified in the OFO or instruction. NYISO will not ordinarily permit inclusion in generator reference levels charges for violating Operational Flow Orders or for violating LDC/pipeline instructions restricting gas usage. However, if and to the extent that a Market Party has obtained specific authorization from the relevant natural gas LDC or pipeline to use gas that would otherwise be unauthorized, the ISO shall not consider such usage to be unauthorized use. Market Parties shall make every effort to clearly document authorization they obtain from an LDC or pipeline. Documentation obtained after the fact will be considered.

This document describes the NYISO's expectations for entities that Bid into the NYISO administered markets during times when an Operational Flow Order (OFO) or other instructions restricting imbalance usage are in effect. Installed Capacity Providers have an obligation to Bid, schedule, or notify for all hours in the Day-Ahead Market ("DAM") in accordance with Market Administration and Control Area Services Tariff ("Services Tariff") Section 5.12.7. In addition to the Services Tariff requirements for Installed Capacity Providers, it is expected that any available generator that is acting in a competitive manner would be bidding into both the Day-Ahead Market and the Real-Time Market. This guide is written in general terms that may not apply to a Generator's unique circumstances.

Nothing in this document circumvents NYISO's Economic withholding rules.

General Statements:

For the purpose of this document, the term "portfolio" refers to gas balancing portfolios.

The failure of a gas-only Generator to offer additional incremental (in excess of its scheduled MWs) energy or ancillary services in real-time during an OFO due to the inability to obtain gas, would be deemed conduct consistent with competitive behavior for purposes of physical withholding evaluations conducted pursuant to the NYISO's Market Power Mitigation Measures (Services Tariff Section 23).

If an interruption of gas service occurs before Day-Ahead Market Bid window closes, gas-only generators are not expected to Bid into the Day-Ahead Market to the extent they are unable to obtain fuel. Such generators would be expected to notify outage scheduling of a forced outage (See GADS Reporting Section).

If an interruption of gas service occurs after a gas-only generator receives a Day-Ahead schedule, the generator is expected to derate for "lack of fuel" (See GADS Reporting Section), and is expected to notify the NYISO of its unavailability due to lack of fuel through its TO.

1. Daily Operational Flow Order (OFO)

During a daily OFO, the following rules apply:

1.1 Gas Only Generators – Single Generator

1.1.1 Day-Ahead Market Expectations

- Since one electric day spans portions of two gas days, Generators' Bids should consider the OFO for the appropriate 24-hour gas day.
- A Generator is expected to reflect any costs (risks) associated with operating during an OFO period in its Bids.

1.1.2 Real-Time Market Expectations

- A gas-only Generator is not expected to offer additional, incremental Energy or Ancillary Services in real-time during an OFO if it cannot procure additional gas or would have to use unauthorized gas services to satisfy its Energy or Ancillary Services offer.
- A Generator is expected to offer into the Real-Time Market during the available gas nomination periods even if the Generator was not awarded a Day-Ahead Market schedule.
- A Generator is expected to offer into the Real-Time Market during the available gas nomination periods if the Generator was awarded a Day-Ahead Ancillary Services schedule for hours outside the available gas nomination period.
- If a Generator chooses not to offer in the Real-Time Market during the period it was awarded a Day-Ahead Ancillary Services schedule, the Generator must be derated to 0 MW for that time period. (See the GADS Reporting section in this Users Guide for details on reporting derates in GADS).
- The failure of a gas-only Generator to offer additional incremental Energy or Ancillary Services (in excess of its Day-Ahead scheduled MWs) in real-time, during an OFO, due to the inability to obtain gas would not be considered physical withholding pursuant to the NYISO's Market Power Mitigation Measures (Services Tariff Section 23).

1.2 Dual Fuel Generators – Single Generator

1.2.1 Day-Ahead Market Expectations

A dual-fuel Generator that has been assigned a default reference fuel type of gas, but is unable to obtain gas due to an OFO, might nonetheless be able to run on oil for the day. In such circumstances, the Generator is expected to include a fuel type adjustment (from gas to oil) in its Market Information System (MIS) bid form.

1.2.2 Real-Time Market Expectations

Generators that would otherwise be available, but for the inability to obtain gas due to an OFO, are expected to Bid for all hours of the Real-Time Market. A dual-fuel Generator that has been assigned a default reference fuel type of gas, but is unable to obtain gas due to an OFO, might nonetheless be able to run on oil for the day. In such circumstances, it is expected the generator will include a fuel type adjustment (from gas to oil) in its Market Information System (MIS) bid form. If a generator has sufficient oil, but fails to offer into the RT Market on oil, the generator will be reviewed for possible physical withholding pursuant to the NYISO's Market Power Mitigation Measures (Services Tariff Section 23) and the generator is expected to report this appropriately in GADS (See the "GADS Reporting" section for details on how to report this derate in GADS).

1.3 Portfolio (combination of gas only & dual fuel generators)

1.3.1 Day-Ahead Market Expectations

- A Generator is expected to reflect any costs (risks) associated with operating during an OFO period in its Day-Ahead Market Bids.
- Alternatively, to the extent a dual-fuel Generator reasonably expects it will be unable to obtain gas it could Bid on its alternate fuel during an OFO period.

1.3.2 Real-Time Market Expectations

- Generators that would otherwise be available, but for the inability to obtain gas due to an OFO, are expected to Bid MWs in the Real-Time Market that were not scheduled in the Day-Ahead Market.
- Generators that have sufficient oil are expected to Bid into the Real-Time Market.
- If, due to an OFO, a Generator cannot secure sufficient gas to meet the Generator's Day-Ahead schedule, and no alternative fuel is available, the NYISO expects the Generator to take a forced outage (See GADS Reporting Section).
- If a Generator with sufficient oil chooses not to Bid into the Real-Time Market, the Generator must derate to 0 mw (See the "GADS Reporting" section for details on how to

report this derate in GADS). Generators are expected to Bid additional available capacity in the Real-Time Market outside the available gas nomination periods when the portfolio can operate within the balancing service allowed during the OFO.

1.4 Portfolio (Gas-only generators)

1.4.1 Day-Ahead Market Expectations

- A Generator is expected to reflect any costs (risks) associated with operating during an OFO period in its Day-Ahead Market Bids.
- If, due to an OFO, a gas-only Generator does not expect to be able to secure sufficient gas to support bidding into the Day-Ahead Market, the NYISO expects the Generator to take a forced outage (See GADS Reporting Section) and is expected to notify outage scheduling.

1.4.2 Real-Time Market Expectations

- Generators that are able to nominate gas are expected to bid in the Real-Time Market during the available gas nomination periods.
- Generators are expected to Bid additional available capacity in the Real-Time Market outside the available gas nomination periods when the portfolio can operate within the balancing service allowed during the OFO.
- If, due to an OFO, a gas-only Generator cannot secure sufficient gas to meet the Generator's Day-Ahead schedule, the NYISO expects the Generator to take a forced outage (See GADS Reporting Section) and is expected to notify the NYISO of its unavailability due to lack of fuel through its TO.

Example #1:

The NYISO would expect a gas-only portfolio to stack the generators by heat rate (cost). If a portfolio knows that they could have five of their generators receive Real-Time Market schedules, and they could stay within the 2% portfolio restriction, then they should offer those five generators in the RT Market. It would be considered consistent with competitive behavior to not Bid the remaining generators in the portfolio into the RT Market.

Example #2:

When bidding into the RT Market, a gas-only portfolio must take into consideration that the current bidding hour impacts the second bidding hour. If a gas-only portfolio assumes full commitment for the second bidding hour, and would still have bandwidth for the 2% portfolio restriction with full commitment, then the portfolio should continue to Bid for the following hour. If the portfolio assumes full commitment for the second bidding hour and would have no bandwidth for the 2% portfolio restriction, then they would not be considered physical withholding pursuant to the NYISO's Market Power Mitigation Measures (Services Tariff Section 23) if they didn't Bid all of their generators for the following hour.

Example #3:

If the portfolio is on track to under burn for the day in comparison to their gas nomination ("long on gas"), the expectation would be that the generator asset owner would offer into the Real-Time Market MWs not scheduled in the Day-Ahead Market. However, if producing an additional MW puts the portfolio into a situation which violates the OFO, then the NYISO would not find the generators to be physically withholding if they didn't offer into the Real-Time Market. If producing an additional MW does not put the portfolio into a situation which violates the OFO, then the NYISO would expect the portfolio to offer. If the portfolio is not offered in this situation, then the generators not offered would be evaluated for Physical Withholding conduct and impact.

Example #4:

Post Cycle Transactions. If a generator can typically obtain post-cycle gas, then the NYISO would expect that generator to offer into the RT Market based on the probability of getting post-cycle gas.

2 Hourly (Ratable) Operational Flow Order (OFO)

2.1 Gas Only Generators – Single Generator

2.1.1 Day-Ahead Market Expectations

- During an "hourly" or "1/24th" OFO, a gas LDC or pipeline may require its Generator customers to maintain similar levels of gas usage across an entire gas day. For gas-fired GTs that might only receive DAM schedules for an hour or two of the gas day, the DAM schedule might, in some cases, force a Generator to buy more gas than it actually needs, and then sell the extra gas it purchased at a loss. The NYISO will work with generators that face such a risk to include temporary adders in Day-Ahead Market start-up reference levels to allow Generators to reflect expected sell-back losses.

- If, due to an OFO, a Generator cannot secure sufficient gas to support its Bid into the Day-Ahead Market, and no alternative fuel is available, the NYISO expects the Generator to take a forced outage (See GADS Reporting Section).

- Generators that are Installed Capacity Suppliers are expected to Bid in accordance with Services Tariff Section 5.12.7 for all hours of the Day-Ahead Market. If the OFO is called prior to the Day-Ahead Market Bid window closing, the NYISO expects that the Generator would include the costs associated with operating during a ratable OFO in its Day-Ahead Market Bid.

2.1.2 Real-Time Market Expectations

- A gas-only Generator is not expected to offer additional, incremental energy or ancillary services above their DAM award in real-time during an OFO if it cannot procure additional

gas or would have to use unauthorized gas services in order to operate to effectuate its energy or ancillary service offer.

- If a generator Bids into the RT Market and that Bid results in violating the OFO, the penalty charges will not be included in reference levels or in the calculation of the generator's compensation.

- Generators are expected to comply with the provisions of OATT Section 34 (also referred to as OATT Attachment BB). If the generator is determined to be a Local Critical Generator or a Bulk Critical Generator and said Critical Generator has coordinated Feasible Natural Gas delivery with the LDC as outlined in OATT Attachment BB, it is expected that the generator will bid for all applicable hours in the RT Market.

- As outlined in Services Tariff Section 23.3.1.4.6.2.1.2, if and to the extent a Market Party has obtained specific authorization from the relevant natural gas LDC or pipeline to use gas that would otherwise be unauthorized, such use shall not be considered unauthorized use by the ISO and the Market Party would be expected to bid for all hours in the RT Market. Market Parties shall make every effort to clearly document authorization they obtain from the LDC or pipeline. Documentation obtained after the fact will be considered.

- If a generator has no accepted DAM schedule, and has not procured gas for the RT Market, the generator has two options:

    - The generator can bid into the RT Market. The bid should include the costs to procure sufficient gas to satisfy the restrictions of the OFO.

    - If a generator cannot procure sufficient gas, then the generator would not be expected to bid into the RT Market. The NYISO would expect the Generator to enter a Reserve Shutdown condition (See GADS Reporting Section). There would be no evaluation for physical withholding pursuant to the NYISO's Market Power Mitigation Measures (Services Tariff Section 23) in this circumstance.

- If a generator has a DAM Ancillary schedule, but has not procured gas for any hours other than that ancillary schedule, the generator has two options:

    - The generator can bid into the RT Market for all hours, including those outside the Ancillary schedule. The bid should include the costs to procure additional gas to satisfy the restrictions of the OFO.

    - If a generator cannot procure additional gas, then the generator would not be expected to bid into the RT Market outside the hours of the Ancillary schedule. The NYISO would expect the generator to enter a Reserve Shutdown condition for the hours outside the Ancillary schedule (See GADS Reporting Section).

- If a generator has a DAM Ancillary Schedule but cannot procure gas to satisfy this schedule in the RT Market, then the NYISO would expect the generator to take a forced outage (See GADS Reporting Section).

- The failure of a gas-only Generator to offer additional incremental (in excess of its scheduled MWs) energy or ancillary services in real-time during an OFO due to the inability to obtain gas, would be deemed conduct consistent with competitive behavior for purposes of physical withholding evaluations conducted pursuant to the NYISO's Market Power Mitigation Measures (Services Tariff Section 23).

- During an "hourly" or "1/24th" OFO, a gas LDC or pipeline may require its Generator customers to maintain similar levels of gas usage across an entire gas day. For gas-fired GTs that might only receive DAM schedules for an hour or two of the gas day, the DAM schedule might, in some cases, force a Generator to buy more gas than it actually needs, and then sell the extra gas it purchased at a loss. The NYISO will work with generators that face such a risk to include temporary adders in DAM start-up reference levels to allow Generators to reflect expected sell-back losses.

2.2 Oil Generators – Single Generator

2.2.1 Day-Ahead Market Expectations

- During an hourly (ratable) OFO, an oil-fired generator that has not already been scheduled to provide non-synchronous reserves, or to start, and that must start on natural gas might need to find intraday startup gas. This may involve the generator obtaining authorization from the LDC allowing use of the startup gas. If the ability to obtain authorization is unknown at the time the generator is bidding into the DA Market, then the NYISO would expect the generator to include in their bid the risk (cost) of not being granted the authorization.

2.2.2 Real-Time Market Expectations

- If the LDC refuses to authorize the use of start-up gas, then an oil-fired generator that must start on natural gas is not expected to bid in the Real-Time Market while the OFO is in effect. (See GADS Reporting Section).

2.3 Dual Fuel Generators – Single Generator

2.3.1 Day-Ahead Market Expectations

- Generators that are Installed Capacity Suppliers are expected to Bid in accordance with Services Tariff Section 5.7.12 for all hours of the Day-Ahead Market. A dual-fuel Generator that has been assigned a default reference fuel type of gas, but is unable to obtain gas due to an OFO, might nonetheless be able to run on oil for the day. In such circumstances, it is expected the generator will include a fuel type adjustment (from gas to oil) in its Market Information System (MIS) bid form.

2.3.2 Real-Time Market Expectations

- Generators that would otherwise be available, but for the inability to obtain gas due to an OFO, are expected to Bid for all hours in the Real-Time Market. A dual-fuel Generator that has been assigned a default reference fuel type of gas, but is unable to obtain gas due to an OFO, might nonetheless be able to run on oil for the day. By including a fuel type adjustment (from gas to oil) in its Market Information System (MIS) bid form, the Generator may avoid unnecessary mitigation.

3 Interruption of Gas Service

3.1 Gas Only Generators

3.1.1 Day-Ahead Market Expectations

- If interruption of gas service occurs or a notice of interruption has been issued by the pipeline or LDC before Day-Ahead Market Bid window closes, generator are not expected to Bid into the Day-Ahead Market. Such generators would be expected to notify outage scheduling of a forced outage. (See GADS Reporting Section).

- If interruption of gas service occurs or a notice of interruption has been issued by the pipeline or LDC after a generator receives a Day-Ahead schedule, the generator is expected to derate for "lack of fuel" (See GADS Reporting Section). The generator is expected to notify the NYISO of its unavailability due to lack of fuel through it's TO.

- If a generator did not bid into the DA Market or RT Market, they would not be evaluated for physical withholding pursuant to the NYISO's Market Power Mitigation Measures (Services Tariff Section 23) during an interruption of service. Generator must report status appropriately in GADS (See GADS Reporting Section).

- Installed Capacity Suppliers located East of Central-East shall Bid in the Day-Ahead all Capacity available for supplying 10-Minute Non-Synchronized Reserve (unless the Generator is unable to meet its commitment because of an outage as defined in the ISO Procedures). (See Section 5 –Exception)

3.1.2 Real-Time Market Expectations

- If a generator bid into the Day-Ahead Market, and didn't get scheduled, generator wouldn't be expected to bid into the Real-Time Market. If not bid into the Real-Time Market, the generator would report this as a Reserve Shutdown in GADS (See GADS Reporting Section). Generator would be expected to notify their TO of their unavailability to run due to lack of available fuel.

3.2 Dual Fuel Generators

- If an LDC system or pipeline is experiencing low pressure, and requests that generators behind that LDC or on that pipeline stop burning gas, the generator is expected to contact its Transmission Owner (TO) to determine if the TO needs the generator to switch to its alternate fuel for reliability. If the TO determines that the generator is required for reliability, the TO will place the generator OOM (which will allow the generator to automatically recover any additional costs incurred with switching to its alternate fuel) and the generator would be expected to switch to its alternate fuel. If the TO does not require the generator to switch to its alternate fuel for reliability, the generator will then decide to either switch to its alternate fuel and run without any mechanism to recover additional costs associated with switching to its alternate fuel; or it will choose to shut down, derate to 0 MW and report the outage appropriately in GADS (See GADS Reporting Section).

4 Generating Availability Data System (GADS) Reporting

Generators are expected to report forced outages or reserve shut down conditions in the Generator Availability Data System (GADS). This section outlines what should be reported as a forced outage and what should be reported as a reserve shutdown.

4.1.1 Reporting Forced Outages

- When the Generator's LDC or pipeline has issued an OFO, instructions restricting imbalance usage, or there is an interruption of gas service, and gas is not available to the generator, the generator is required to enter a Forced Outage/Derate (U1, U2, U3 / D1, D2, D3) with the Cause Code 9130 or 9131 in their GADS data (except as noted below).

Examples of Forced Outages:

- Generator not available to bid into the Day-Ahead Market due to lack of fuel.
- Generators scheduled for Incremental Energy in the Day-Ahead Market, but cannot get fuel in the Real-Time Market to meet the Day-Ahead schedule.
- Generators not scheduled in the Day-Ahead Market, but SRE'd or placed OOM and cannot operate in the Real-Time Market because of the OFO.
- Generators not scheduled in the Day-Ahead Market, but scheduled in the RT Market for Incremental Energy and cannot run in the Real-Time market because of the OFO.
- Generators not scheduled in the Day-Ahead Market but scheduled for reserves in the Real-Time Market and asked to convert to Incremental Energy and cannot operate because of the OFO.

4.1.2 Reporting Reserve Shutdowns

- A reserve shutdown is a situation where a gas-only generator is not scheduled to run in the Day-Ahead Market and cannot run in the Real-Time Market due to an inability to obtain gas.

Examples of Reserve Shutdowns:

- Generators that bid into the DA Market, but was not scheduled, and cannot operate in the RT Market due to the OFO.
- Additional Incremental Energy or Ancillary Services MWs (in excess of its Day-Ahead scheduled MWs) not offered in real time due to lack of fuel.

5 Exception – Real-Time Obligations of Installed Capacity Suppliers located East of Central-East

- Installed Capacity Suppliers located East of Central-East are required (See Services Tariff Section 5.12.1.11) to bid in the Day-Ahead and Real-Time Markets all Capacity available for supplying 10-Minute Non-Synchronized Reserve (unless the Generator is unable to meet its commitment because of an outage). Except for generators that have demonstrated to the ISO that they are subject to environmental, contractual or other legal or physical requirements that would otherwise preclude them from providing 10-Minute Non-Synchronized Reserve.

6 GADS Reporting for Installed Capacity Suppliers located East of Central-East which provide 10-Minute Non-Synchronized Reserves

6.1.1 Reporting Forced Outages

- When the Generator's LDC or pipeline has issued an OFO, instructions restricting imbalance usage, or there is an interruption of gas service, and gas is not available to the generator, the operator/owner is required to enter a Forced Outage/Derate (U1, U2, U3 / D1, D2, D3) with the Cause Code 9130 or 9131 in their GADS data.

Examples of Forced Outages for these generators:

- Generators scheduled for Incremental Energy in the DA Market, but cannot get fuel in the RT Market.
- Generators scheduled in the DA Market for reserves and asked to convert to Incremental Energy in the RT Market but cannot get fuel.
- Generators not scheduled in the DA Market, but SRE'd or placed OOM and cannot operate in the RT Market because of the OFO.

6.1.2 Reporting Reserve Shutdowns

Examples of Reserve Shutdowns for these generators:

- Generators scheduled in the DA Market for reserves and NOT asked to convert to Incremental Energy but OFO called in the RT Market.
- Generators scheduled in the DA Market for Incremental Energy or Reserves and then not scheduled in the RT Market but OFO is called.
- Generators not scheduled in the DA Market and didn't bid into the RT Market because the OFO was called.
- Generators not scheduled in the DA Market but scheduled for Reserves in the RT Market and NOT asked to convert to Incremental Energy but can't run because of an OFO.

7 Reference Level Software (RLS) Reporting

The NYISO expects all generators to communicate with the Mitigation References (MR) team any expected additional costs incurred as a result of operating during an OFO condition or instructions restricting imbalance usage.

- Generators are expected to comply with the provisions of the NYISO Reference Level Manual; specifically section 6.3.2 Bidding, fuel procurement and reference updates in the presence of gas balancing costs or Operational Flow Orders.

8 Outage Scheduling

Generators are expected to comply with the provisions of the NYISO Outage Scheduling Manual. Please refer to the NYISO Outage Scheduling Manual when notifying the NYISO of planned and unexpected changes to the operational availability of their transmission and generating facilities. These notifications are given in the form of requests to the NYISO for consideration and approval as Outage Schedules.