UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Centralized Capacity Markets in Regional Transmission Organizations and Independent System Operators	Docket Nos. AD13-7-___
Winter 2013-2014 Operations and Market Performance in Regional Transmission Organizations and Independent System Operators	AD14-8-___

POST-TECHNICAL CONFERENCE REPORT OF THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

The New York Independent System Operator, Inc. ("NYISO") respectfully submits this Report in compliance with paragraph 20 of the Federal Energy Regulatory Commission's ("Commission's") November 20, 2014 Order in the above proceedings.[1] The NYISO thanks the Commission for convening the technical conferences and for allowing the NYISO to participate in the discussions. As explained in greater detail below, the NYISO has a number of practices in place that are directed at ensuring that New York Control Area ("NYCA")[2] generators timely procure sufficient fuel to meet their obligations. The NYISO also describes several new programs it is pursuing with its stakeholders. The NYISO expects to file any tariff revisions that

[1] 149 FERC ¶ 61,145.

[2] Capitalized terms that are not defined in this Report have the meaning ascribed to them in Article 2 of the NYISO's Market Administration and Control Area Services Tariff.

may be necessary to implement the new programs described below with the Commission over the next several years.[3]

I. How Generator Availability Impacts New York

The NYCA is a summer peaking area with an all-time summer peak load of 33,956 MW, which occurred July 19, 2013. The NYCA's all-time winter peak load of 25,738 MW occurred on January 7, 2014. While sufficient installed capacity is purchased in the NYISO capacity markets, it is important that generator performance by installed capacity providers remain strong during cold weather periods. The NYISO generation capacity consists of 14% nuclear, 15% hydro including pumped storage capability, 46% dual fuel (gas & oil), 9% gas only, 7% oil, 4% coal, 4% wind and 1% other fuel sources. Ninety-five percent of the New York City and Long Island generation mix is gas-fired generation, most of which has dual-fuel capability. Eighty percent of the New York gas-fired generators are interconnected to gas Local Distribution Companies ("LDCs"), not directly to an interstate or large intrastate pipeline. These gas-fired generators must procure gas transportation service from both gas pipeline companies and their gas LDC.

The generator performance concerns New York experiences can be separated into three categories. The first category is generator de-rates or unavailability due to the inability to procure sufficient fuel. The majority of the New York gas-fired generation fleet does not have long term primary firm gas transportation service on the interstate pipelines or across the large gas LDC's. Gas-fired generators that are not able to schedule sufficient natural gas during cold weather conditions (when the gas pipeline infrastructure in New York is constrained due to high usage by other gas LDC customers) may have to de-rate.

[3] The NYISO expects to submit its Comprehensive Shortage Pricing proposal for the Commission's consideration on the date it submits this Report, or shortly thereafter.

For many New York generating stations with oil burning capability, it is cost effective to make oil replacement arrangements, rather than storing large oil inventories on site. Oil-fired generation in New York may need to de-rate or can become unavailable when on-site oil inventories become depleted and cannot be timely replenished.

Oil replacement arrangements require barges, rail, trucks, and ships to transport the oil.[4] While historically oil replacement arrangements have proven workable, during sustained cold weather conditions or when gas prices exceed oil prices, the NYISO carefully monitors oil inventories and replacement deliveries to oil-burning generators because extreme conditions can delay or prevent fuel delivery.

The second category of generator performance concerns are for equipment failures related to cold weather conditions. Causes for these de-rates include frozen pipes, frozen equipment, inability to fire the burner, or forced outages while switching fuels.

The final category of generator performance concerns are ordinary, random equipment failures that are unrelated to fuel or frozen equipment, but still result in loss of generation capacity when needed during cold weather peak conditions.

The performance of generators located outside New York can impact the NYISO's ability to import energy during extreme conditions, and can even result in unanticipated real-time demand from neighboring areas. The NYISO's day-ahead scheduling process is an economic process that evaluates offers to schedule imports to New York and bids to purchase exports from New York. The day-ahead scheduling process schedules lower cost import offers from neighboring areas instead of committing more expensive NYCA generation. Receiving imports that were scheduled day-ahead in real-time can be important for meeting reliability criteria

[4] Replenishment by ship is not a viable option in the winter for generators located on the St Lawrence Seaway.

during extreme conditions. If a neighboring Control Area experiences significant generator outages due to cold weather conditions and is not able to supply energy to New York in real-time, then import offers that NYISO accepted and scheduled day-ahead, and used to develop its day-ahead operating plan, may not be delivered in real-time.

II. NYISO's Comprehensive Strategy for Addressing Fuel Assurance Concerns

The NYISO's comprehensive strategy for addressing fuel assurance and generator performance is a multi-component, multi-phase initiative that is planned for implementation over the next several years. It will improve fuel procurement and performance incentives for generation assets in New York. It encompasses generator performance initiatives in the NYISO's capacity and energy markets, and enhanced reporting of fuel prices, inventories and availability. The NYISO's efforts are designed to comprehensively address all three of the factors that NYISO has identified as significant causes of reduced or curtailed real-time energy output,[5] rather than focusing solely on fuel procurement. Specific programs that fall within the ambit of the NYISO's comprehensive strategy for addressing fuel assurance and generator performance are described below.

III. Summary of Proposed and Planned Improvements to NYISO's Existing Market Rules

This Report describes both existing NYISO market mechanisms that incentivize generator performance during extreme weather and initiatives that NYISO has undertaken to expand or improve upon the performance incentives that are currently available in the NYISO's markets. The summary below only identifies proposed or planned <u>improvements</u> to the NYISO's existing market rules.

[5] Fuel unavailability, cold weather equipment de-rates, and generation de-rates that are not specifically related to fuel or cold weather.

A. Proposed Energy and Ancillary Service Market Improvements

In 2013 and 2014 the NYISO worked with its Stakeholders to develop a comprehensive proposal ("Comprehensive Shortage Pricing") of enhancements to its reserve procurement and shortage pricing that will more accurately reflect the value of energy and ancillary services during tight operating conditions. The proposed new rules should provide additional financial incentives to generating units with day-ahead schedules to improve their performance during extreme cold weather conditions and in other situations where operating reserves are tight.

Almost 84% of the NYISO's stakeholders voted in favor of the Comprehensive Shortage Pricing proposal at the December 2014 Management Committee meeting. The NYISO Board of Directors approved the submission of a Federal Power Act Section 205 filing to request Commission acceptance of the Comprehensive Shortage Pricing proposal. The NYISO expects to file its proposed Comprehensive Shortage Pricing Tariff revisions on the date it submits this Report, or shortly thereafter.

In addition to Comprehensive Shortage Pricing, the NYISO plans to implement improvements to its scarcity pricing rules ("Comprehensive Scarcity Pricing") in 2016. The purpose of scarcity pricing is to set appropriate prices when demand response resources are activated on high load days. Without an appropriate scarcity pricing mechanism in place, price would fall as soon as demand response resources respond to the NYISO's directive.

Comprehensive Scarcity Pricing is aimed at changing scarcity pricing from an *ex-post* pricing process to an *ex-ante* pricing process. Because the NYISO commits and dispatches resources based on *ex-ante* prices and the NYISO's markets ordinarily settle based on *ex-ante* prices, making scarcity pricing an *ex-ante* process will improve pricing and scheduling consistency between demand- and supply-side resources. The planned Comprehensive Scarcity

Pricing improvements will also make the NYISO's scarcity pricing mechanism consistent with the Comprehensive Shortage Pricing improvements that are planned for implementation in 2015.

Finally, a "reference level" is a fuel-indexed approximation of a generator's short run marginal costs that is intended to reflect the offer(s) that a market participant would submit for a generator if it was participating in a competitive market and could not exercise market power. Reference levels are compared to the offer submitted on behalf of a generator to determine if the submitted offer exceeds tariff-defined conduct and market impact thresholds. Offers that exceed defined conduct and market impact thresholds are "mitigated" (reduced to equal the appropriate reference level).

The NYISO is targeting a potential improvement to day-ahead reference level for development in late 2015. Day-ahead reference levels currently use a single fuel price for all 24 hours of the electric market day. However, the NYISO's electric market day is spread across two gas market days,[6] so using a single fuel price to develop reference levels over the entire electric market day may not always produce the most accurate estimate of a generators' expected fuel costs. The proposed enhancement will allow different fuel price or fuel type information to be used in each hour of the day to produce more accurate day-ahead reference levels.

B. Proposed Capacity Market Improvements

The NYISO is also working with its Stakeholders to develop capacity market enhancements that will adjust generators' installed capacity payments based on their performance on defined "critical operating days." These capacity market enhancements are still in the process of being developed. The NYISO hopes to obtain stakeholder approval by the end of 2015 and to implement the proposed capacity market improvements in 2016.

[6] In New York HB 0-9 are in one gas market day, while HB 10-23 are in a different gas market day.

The capacity market enhancements that are under consideration are designed to comprehensively address all three of the factors that NYISO has identified as significant causes of reduced or curtailed real-time energy output. The proposed enhancements are not focused solely on fuel procurement.

C. Planned Improvements to NYISO's Generator Reporting Effort

The NYISO currently has two fuel reporting processes in place. The first is the Seasonal Fuel Survey that occurs each fall. The second is the Daily Fuel Survey. Responses are provided on an Excel spreadsheet template.

The NYISO has a project for 2015 to develop a web-based application that will streamline the capability for gas and oil fired generator owners to submit fuel availability updates on a daily or weekly basis, as and when needed by the NYISO. The NYISO is currently working with its Stakeholders on this project and expects to have this web-based application in production by December 2015.

IV. Specific Programs and Mechanisms NYISO Has Implemented or Is Implementing to Address Fuel Assurance

In this section of the Report the NYISO identifies existing market rules that help the NYISO achieve its fuel assurance and generator performance goals, and provides a more complete explanation of planned or proposed improvements to existing rules that NYISO expects to file with the Commission for its consideration over the next several years. The NYISO also describes the fuel reporting measures that it has developed to improve its Operations Department's ability to make informed decisions when extreme weather events occur.

A. NYISO's Energy and Ancillary Service Markets

The NYISO is currently developing market enhancements to incentivize superior performance by generators in real time operation, improve generator availability, create

provisions for fuel assurance and enhance market signals for investments in new generating plants.

1. The NYISO's Currently Effective Energy and Ancillary Service Market Rules Provide Appropriate Performance Incentives

The NYISO's existing market design includes many features that provide incentives for generators to procure adequate fuel and perform when they are needed in real-time. These incentives come from the design of the NYISO's energy markets—the NYISO's bidding rules, how obligations assumed in the NYISO's Day-Ahead Market ("DAM") translate to real-time, the fact that NYISO's energy market settles at a sub-hourly level in real-time (ordinarily, every five minutes)—and from the NYISO's capacity market design.

The NYISO's marginal pricing, simultaneous co-optimization of energy and ancillary service products and five-minute settlement intervals collectively produce real-time energy and ancillary service prices that accurately reflect real-time system conditions. The NYISO's real-time prices send an efficient market signal for generator with day-ahead energy or reserve commitment to procure adequate fuel to operate in real-time. If a generator that is committed day-ahead is unable to operate in real-time, it is required to buy out of its day-ahead position at the real-time price. If the real-time price at the generator's location is higher than the day-ahead price was, then to the extent a generator is unable to perform to satisfy the obligation it assumed day-ahead, the generator will lose money "balancing" between its DAM position and its Real-Time Market ("RTM") position.[7]

In addition, specific design feature of the NYISO's day-ahead and real-time energy markets contribute to fuel assurance. These include:

[7] If the real-time price is lower than the day-ahead price at a generator's location, then there are likely lower cost resources available to the NYISO in real-time and the generator is appropriately incented to reduce its real-time output below its day-ahead schedule.

- NYISO has the earliest DAM posting time (ordinarily 9:30 a.m.) of any Commission-regulated ISO or RTO. The NYISO's DAM posts approximately two and a half hours before the next day gas nomination period ends, allowing generators that receive day-ahead commitments additional time to purchase and schedule gas to meet their day-ahead schedules.

- The NYISO's DAM incorporates three key types of reliability commitments: forecast load pass commitments, Day Ahead Reliability Unit ("DARU") commitments, and commitments to satisfy local reliability rule criteria in New York City. These reliability commitments are completed and posted at the same time as the rest of the NYISO's DAM, so these reliability-committed generators receive their DAM schedules in time to buy and schedule gas.

- The NYISO procures regulation and reserves in its DAM. Generators that receive day-ahead regulation or reserve schedules have the opportunity to buy and schedule gas to meet their ancillary service obligations.

- Hybrid pricing and offline gas turbine ("GT") pricing reflect the need for quick-start resources in New York and the price of meeting those needs (including the cost of starting-up an offline GT) in LBMPs. By sending accurate energy market price signals the NYISO incentivizes quick-start resources to procure fuel and take other actions that are necessary to operate when these resources are needed.

- Shortage pricing signals when the NYISO is short of reserves, regulation, or transmission to reflect critical operating conditions and incentivize resources to procure fuel and perform when they are needed. The NYISO recently proposed further enhancements to its shortage pricing rules that are described in detail below.

The energy market design features described above are complemented by the NYISO energy market bidding rules, which allow a supplier to offer different hourly bids in each hour of the DAM and the RTM for each generator, so that suppliers can reflect changing costs across the day.[8] This is important in the DAM because of the lack of alignment of the gas and electric markets. In the RTM this allows generators to accurately reflect changing costs, including fuel procurement costs and opportunity costs.

[8] The ability of suppliers to submit different hourly costs is complemented by the NYISO's ability to consider and implement supplier-provided fuel cost updates to the generator reference levels NYISO uses to perform market power mitigation. The benefits of updating generator reference levels to more accurately reflect fuel costs are addressed in greater detail below.

When the ability to offer marginal costs on an hourly basis is not available, suppliers may instead use other offering/unit commitment parameters to attempt to achieve an efficient dispatch. However, there can be distortions when other (often non-price) parameters are used to attempt to reflect changes in a generator's marginal operating costs. By allowing suppliers to precisely reflect their generator's marginal costs, the NYISO can more efficiently dispatch available generation. A more efficient dispatch means the NYISO is making more efficient use of the available fuel.

2. Comprehensive Shortage Pricing Proposed Market Enhancement

Shortage pricing refers to setting of prices for reserves, regulation service, transmission constraints and, in the NYISO's co-optimized market, energy prices when the system is running short of available resources to meet the total needs of the electric system. At times when demand approaches the amount of available supply, the NYISO's shortage pricing design uses demand curves in the DAM and RTM to develop prices for energy and ancillary service products so that the markets clear with an established price reflective of the level of the shortage, even when the desired reserves are not available at any price. This approach ensures that prices are set consistent with New York's reliability needs by prioritizing the constraints the market dispatch secures. Shortage pricing provides a transparent price signal to the market, placing a clear value on reserve capacity and produces an efficient dispatch during shortage situations.

The NYISO is in the process of filing proposed changes to its shortage pricing protocols and the pricing set points that are triggered for various levels of reserve deficiencies for the Commission's consideration. The Comprehensive Shortage Pricing enhancements were endorsed by the NYISO's stakeholders in December of 2014. The proposed enhancements include:

- The expansion of the NYCA reserve requirement in order to better incorporate out-of-market actions the NYISO has traditionally taken to maintain NYCA reliability into the DAM and RTM models. The proposed changes will increase resource availability, incentivize increased resource flexibility and promote fuel assurance by bringing actions that previously occurred outside the economic commitment process into the economic commitment.
- The creation of a Southeast New York ("SENY") reserve area to ensure that additional NYCA reserves are available to address lower Hudson Valley transmission constraints that primarily manifest when NYISO experiences high load conditions in the Summer.
- A limitation on the maximum amount of total reserves that can be scheduled on resources located within the Long Island Load Zone to ensure that the reserves NYISO carries are deliverable when needed, and to improve the distribution of reserves across the NYCA.
- A complete update of all shortage pricing levels to account for the new SENY reserve area, to incorporate more up-to-date resource cost expectations, to better align NYISO's shortage pricing with its neighbors and to ensure that the co-optimized solution properly values regulation, operating reserves and transmission when scheduling resources to meet NYCA reliability requirements.

New York is heavily reliant on natural gas and its reliance is increasing due to sustained, relatively low natural gas prices. Increased reliance on natural gas, combined with recent extreme weather, were key drivers in the NYISO's development of the Comprehensive Shortage Pricing market incentives described above. They are designed to protect reliability by enhancing and more carefully targeting incentives to achieve generator performance, unit availability and adequate fuel.

The NYISO's proposed shortage pricing market changes will enhance reliability and unit availability, fuel assurance and more cost-effective operation by ensuring that New York generators have a strong financial reason to be available for operation during extreme cold and

hot weather events.[9] The proposed new rules will further incent New York generators with day-ahead awards to timely procure sufficient fuel or face potentially large DAM/RTM balancing charges if they are not able to achieve their DAM schedule in real-time under extreme conditions.

The NYISO expects to file its proposed Comprehensive Shortage Pricing tariff revisions for the Commission's consideration on the date it submits this Report, or shortly thereafter. The NYISO will request authority to implement the proposed new rules in November of 2015.

3. Comprehensive Scarcity Pricing Proposed Market Enhancement

The purpose of scarcity pricing is to set appropriate prices when demand response resources are activated during critical operating periods, such as on high load days. It is appropriate to set high price levels to incent resource performance during the critical periods when demand response is activated. Without the scarcity pricing mechanism in place, price would fall as soon as demand response resources respond to the NYISO's directive.

The NYISO's scarcity pricing rules are intended to set RTM prices for all resource types consistent with the cost of maintaining reliability. Scarcity prices are in effect when the NYISO would have experienced a reliability problem "but for" the activation of Special Case Resources and Emergency Demand Response Providers.

The NYISO first implemented scarcity pricing rules in 2003 as an *ex-post* pricing process. Improvements to the *ex-post* scarcity pricing process, called Enhanced Scarcity Pricing, were implemented in 2013 to fully reflect the cost of dispatching resources during demand response events in Real-Time Market prices. The transparency added in the 2013 enhancements created incentives for generators to perform better in the RTM.

[9] While this Report primarily addresses generator performance, the financial incentives described herein also incentivize performance by other resources the NYISO relies on to serve load.

Further improvements to scarcity pricing, called Comprehensive Scarcity Pricing, are planned for implementation in 2016. These improvements are aimed at changing scarcity pricing from an *ex-post* pricing process to an *ex-ante* pricing process. Because the NYISO commits and dispatches resources based on *ex-ante* prices and the NYISO's markets ordinarily settle based on *ex-ante* prices, making scarcity pricing an *ex-ante* process will improve pricing and scheduling consistency between demand- and supply-side resources and expand scarcity pricing outcomes to the external proxy generator bus locations. The planned Comprehensive Scarcity Pricing improvements will make the NYISO's scarcity pricing mechanism consistent with the Comprehensive Shortage Pricing improvements that are proposed for implementation in 2015.

4. Improved Fuel Indexing of Generator Reference Levels

A "reference level" is an approximation of a generator's short run marginal costs that is intended to reflect the offer(s) that a market participant would submit for a generator if it was participating in a competitive market and could not exercise market power. The NYISO develops reference levels for dollar and time-based offer parameters for each generator. Reference levels are compared to the offer submitted on behalf of a generator to determine if the submitted offer exceeded tariff-defined conduct and market impact thresholds. Offers that exceed defined conduct and market impact thresholds are "mitigated" (reduced to equal the appropriate reference level).

Dollar-based reference levels are fuel price indexed to more accurately reflect a generator's expected costs. In October 2010, the NYISO implemented a new capability for Market Participants submitting offers in the Real-Time Market to update the fuel type (gas, oil, coal) and fuel price that the NYISO uses to develop reference levels for each generator. This

capability allows a generator with fuel costs that exceed the relevant fuel index price to reflect the higher fuel cost in its real-time offers.

A generator may use the fuel cost adjustment functionality in real-time to reflect intraday gas purchases made at a premium compared to posted day-ahead index prices, or to include authorized local distribution company or pipeline gas balancing charges in reference levels. Generators can call the NYISO to request other adjustments to their reference levels, including reference level adjustments that incorporate opportunity costs at times when a generator's available fuel supply is limited.

The NYISO expects that authorized gas balancing charges will only be included in real-time reference levels when it is no longer possible to nominate additional gas (typically hours beginning 17 through 09 of the NYISO's electric day). However, there may be unique circumstances that justify incorporating gas balancing charges into reference levels at other times of the day.

To protect gas system reliability, the NYISO will not permit the inclusion in generator reference levels of charges associated with penalties for violations of gas pipeline or LDC Operational Flow Orders ("OFOs"), or for violations of instructions restricting the use of gas imbalance service. NYISO expects incremental generating capability that is unable to procure gas except by using gas that is unauthorized, will not be offered into the real-time market.

In June of 2014, the NYISO introduced additional functionality that permits generators to update the fuel type or fuel price that NYISO uses to develop the reference levels that are used to test generator's day-ahead offers for possible mitigation in the day-ahead market.[10] Generators typically use the fuel cost adjustment functionality to reflect gas price expectations in their day-

[10] Under the NYISO's Tariff rules inaccurate reporting of fuel prices, or of the type of fuel burned, can result in significant financial penalties.

ahead offers that differ from posted day-ahead gas index prices. Generators can also call the NYISO to request other adjustments to their day-ahead reference levels, including reference level adjustments that incorporate opportunity costs at times when a generator's available fuel supply is limited.

As part of the NYISO's continuing effort to improve the quality of generator reference levels it is targeting a potential improvement to day-ahead reference levels for development in late 2015. Day-ahead reference levels currently use a single fuel price for all 24 hours of the electric market day. However, the NYISO's electric market day is spread across two gas market days,[11] so using a single fuel price to develop reference levels over the entire electric market day may not always produce the most accurate estimate of the Generators' expected fuel costs. The proposed enhancement will allow different fuel price or fuel type information to be used in each hour of the day to produce more accurate day-ahead reference levels. This enhancement is important for gas-only generators, but it will also help the NYISO develop reference levels for dual-fuel generators that more closely represent their fuel cost expectations. Scenarios where dual fueled units may anticipate a need to switch their fuel type mid-day include known gas availability and deliverability limitations (including OFOs, expected OFOs, or gas system maintenance) that restrict the amount of gas a generator can receive each hour, or over the course of a gas day.

The NYISO believes allowing recovery of accurately determined fuel costs in generator reference levels lowers the cost to consumers for electric service. Absent the opportunity to recover incremental gas balancing costs, resources may not offer generation into the RTM, or may offer into the DAM at a higher price to reflect additional real time risk. This could cause

[11] In New York HB 0-9 are in one gas market day, while HB 10-23 are in a different gas market day.

NYISO to dispatch higher cost resources to meet load, which could increase energy prices and/or produce uplift charges in both the DAM and RTM.

B. Capacity Related Programs and Improvements

The NYISO's capacity market provides incentives for generators to accurately reflect their availability. The NYISO has proposed, and is currently working with its stakeholders to develop, improvements to the NYISO's capacity market that will provide more tightly focused performance incentives on "critical operating days," when the NYCA is experiencing extreme conditions.

1. NYISO's Currently Effective Capacity Market Rules Provide Appropriate Performance Incentives

Because the NYISO runs monthly and seasonal spot auctions for capacity, instead of relying solely on an annual procurement period, resources are able to offer supply in the winter and summer months based on the resource's actual availability during that time of year. The NYISO's existing capacity market construct allows resources to be counted on for reliability when they are available and only to the extent they are available. The NYISO's monthly certification process matches generators to capacity sold bilaterally or in prior auctions. It provides a strong price signal and revenue to needed generating units, and therefore contributes to fuel assurance and generator performance.

Under the NYISO's current capacity market construct generators are paid based on their actual performance measured over a period of 17 months. The NYISO uses actual, generator-specific performance to translate an "installed capacity" value into an "unforced capacity" value.[12] The level of revenue a generator receives in the NYISO's capacity market is based on its unforced capacity value. Although the unforced capacity construct is an effective and long

[12] The translation is based on each generator's equivalent demand forced outage rate ("EFORd").

standing mechanism for determining resource performance, the unforced capacity calculation provides nearly equal weights to all events that occur within the 17 month window. For this reason, the NYISO is in the process of developing proposed capacity market improvements that will increase the importance/financial impact of generator performance on "critical operating days" when the NYCA is experiencing extreme conditions.[13]

2. Proposed Improvements to NYISO's Capacity Market Rules to Better Incentivize Performance on Critical Operating Days

The NYISO believes real-time price signals are the most effective way to address real-time operating conditions. The NYISO is developing, or has developed, the energy and ancillary service market pricing improvements that are described elsewhere in this Report in that context. The NYISO also believes that there is value in additional short-run capacity market incentives to supplement real-time prices and is currently working through its stakeholder process to identify and develop capacity market changes to supplement real-time price signals.

The NYISO is working with its stakeholders to identify and develop capacity market changes that will help protect reliability and send appropriate price signals when operating conditions grow even tighter (due to increased reliance on natural gas, or for other reasons). The NYISO is proposing to provide focused financial incentives to generators that are scheduled in the DAM or via a supplemental reliability commitment to meet or exceed their day-ahead availability on "critical operating days," when the NYCA is experiencing extreme conditions. The proposed financial incentives will complement the NYISO's real time price signals and more tightly focus capacity market incentives to help maintain and improve the reliable operation of the NYISO energy markets during extreme conditions.

[13] The NYISO uses different methods to determine performance for non combustion generators like run-of-river hydroelectric plants, wind generators and special case resources. The NYISO is looking to improve the capacity market performance incentives that apply to those resources in the same way it is looking to improve the capacity market incentives presented to traditional fossil generators.

The NYISO's capacity market design changes are expected to be finalized in 2015. The NYISO will be looking to implement proposed changes in 2016.

C. NYISO Operations Department Fuel Reporting Programs

1. Currently Effective Reporting Measures

The NYISO presently engages in the following practices that help its Operations Department effectively manage fuel inventories under adverse conditions and improve the Operations Department's understanding of and ability to react appropriately to generator performance concerns when they arise:

Seasonal Fuel Survey—Each Fall for the past two years the NYISO has issued a comprehensive fuel inventory survey to its generator owners requesting the details of their fuel oil and natural gas supply arrangements. For oil fired units, the survey requests current oil inventories, on-site and off-site oil storage capabilities, known (definite) additional delivery schedules, and oil replacement (replenishment) capability (trains, trucks, barges, ships). For gas fired units, the survey requests natural gas transportation arrangements in the form of primary firm, capacity release, or interruptible and quantities in MMBtu by month.

Cooperation from the generation owners was excellent and the NYISO found the information supplied to be accurate. There have been no surprises during cold weather conditions with regards to fuel inventories or fuel replenishment capabilities.

Daily Fuel Survey—In early December 2013, the NYISO developed a daily fuel survey solicitation process as a means to receive daily updates of oil and natural gas procurement and inventory information when needed. The survey requests current fuel on-hand, the date of the next oil delivery, the quantity of the next oil delivery, and projected 7-day oil inventories reflective of projected oil deliveries and conservative full load burn assumptions. The daily fuel

survey process was executed several times in January 2014 and helped the NYISO identify the potential for some NYCA generators to fully deplete their onsite oil supplies in the third and fourth weeks of that month. In a few instances the NYISO and its external Market Monitoring Unit ("MMU") worked with generator owners that faced the possibility of fully depleting their available oil to develop reference levels that reflected the generators' limited remaining availability in an effort to conserve fuel oil to address reliability needs when natural gas was not available (for dual fuel units) and/or to appropriately reflect capacity de-rates.

Added Gas-Electric Support Position in Operations Department—In the spring of 2014 the NYISO created an additional gas-electric support position and successfully filled this position with an individual with significant experience in gas system operations. In Winter 2014-15 this individual has been providing support to real time Grid Operations by monitoring, on a daily basis, gas system conditions including Operational Flow Orders, Gas Alerts, gas storage, liquefied natural gas ("LNG") deliveries to the Northeast, daily gas nominations, and oil inventories.

NY State Communication Protocol—The NYISO participates in a New York State communications protocol that helps accelerate and streamline the communications of tight oil supplies and generator difficulty in receiving oil fuels across relevant state agencies including the New York Department of Public Service Staff, the New York Department of Environmental Conservation, the New York Department of Transportation, and the New York State Energy Research and Development Authority. The primary objective of the communication protocol is to streamline and accelerate the communication of information to state agencies if a generator needs state permit waivers or transportation waivers to operate in extreme conditions or under exigent circumstances to protect reliability.

Any time there is a projection of cold weather conditions, the NYISO issues a report in the form of a "dashboard" indicating any current-day or future (forecasted upcoming) electric reliability concerns related to projected electric capacity shortages or fuel unavailability. The dashboard report is as simple as "green" indicates no electric capacity shortages and no known fuel shortages, "yellow" indicates that the NYISO is either projecting an electric capacity shortage or there is a known inability for one or more generators to have fuel, and "red" indicates both a projected electric capacity shortage and generator fuel shortages.

Operator Visualization—In the spring of 2014 the Northeast interstate gas pipeline infrastructure was added to the video board that is used by the NYISO's system operators. In December 2014 the display was further enhanced to include interstate gas pipeline OFOs. Additional work is underway to display gas nominations and oil inventories on the video board so that the NYISO's system operators can review this information whenever it is pertinent to them.

Winter/Summer Readiness Assessment—The NYISO conducted its most recent Winter/Summer Readiness Assessment in April and May of 2014. The purpose of the assessment was to review cold weather issues experienced during the 2014 "polar vortex" and any lessons learned by generating facilities and corrective actions taken to address identified concerns. This assessment also reviewed the planned and completed maintenance of the generators to gauge their readiness for the upcoming summer season. NYISO visited approximately 50% of the NYCA generating capacity, including approximately 67% of the dispatchable units.

Cold weather fuel and operational difficulties were discussed with generator plant staffs. Because generators located in New York are ordinarily constructed to be able to operate under

extreme cold conditions, operational issues were minimal. Fuel availability and delivery was a challenge for some units. Several generating facilities indicated that, in response to market signals, additional liquid fuel is being procured as a hedge against similar potential weather conditions this winter.

In the Fall of 2014 the NYISO presented a Winter 2014-2015 Capacity Assessment evaluating expected installed capacity resources (including in-state generation, demand response, and imported installed capacity) against forecasted peak cold weather conditions using a deterministic set of predicted generator derates based on historical factors. The Capacity Assessment also evaluated some operational "stress" conditions including loss of gas and an extreme cold weather "90/10" peak forecast.[14] The Winter 2014-2015 Capacity Assessment was presented to Stakeholders at the November 2014 Operating Committee and Management Committee meetings.[15]

2. Planned Expansion or Improvement of NYISO Fuel Reporting Effort

As described above, the NYISO currently has two fuel reporting processes in place. The first is the Seasonal Fuel Survey that occurs each fall. The second is the Daily Fuel Survey. Today, responses to these information requests are provided on an Excel spreadsheet template.

The NYISO has a formal (defined) project for 2015 to develop a web-based application that will streamline the capability for gas and oil fired generator owners to submit fuel availability updates on a daily or weekly basis, as and when needed by the NYISO. The NYISO

[14] "90/10" indicates that the actual peak load NYISO will experience this Winter is 90% likely to be lower than the peak load used in the study.

[15] Link to the NYISO's Winter 2014-2015 Capacity Assessment presentation: http://www.nyiso.com/public/webdocs/markets_operations/committees/mc/meeting_materials/2014-11-20/Agenda%2004%20-%20Winter%202014-15%20Capacity%20Assessment.pdf

is currently working with its Stakeholders on this project and expects to have this web-based application in production by December 2015.

V. Contacts and Service

All communications and service in this proceeding should be directed to:

Wesley J. Yeomans, Vice President, Operations
*Raymond Stalter, Director, Regulatory Affairs
*Alex M. Schnell, Registered Corporate Counsel
10 Krey Boulevard
Rensselaer, NY 12144
Tel: (518) 356-8707
Fax: (518) 356-7678
rstalter@nyiso.com
aschnell@nyiso.com

*Persons designated for receipt of service.

VI. Conclusion

The NYISO respectfully submits this Report on its ongoing efforts to improve fuel assurance and generator performance in New York.

Respectfully submitted,

/s/ Alex M. Schnell
Wesley J. Yeomans, Vice President, Operations
Alex M. Schnell, Registered Corporate Counsel
New York Independent System Operator, Inc.

February 18, 2015

cc: Michael Bardee
Gregory Berson
Anna Cochrane
Morris Margolis
David Morenoff
Daniel Nowak
Kathleen Schnorf
Jamie Simler
Kevin Siqveland

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding in accordance with the requirements of Rule 2010 of the Rules of Practice and Procedure, 18 C.F.R. § 385.2010.

Dated at Rensselaer, NY this 18th day of February, 2015.

By: */s/ John C. Cutting*

John C. Cutting
Senior Regulatory Affairs Specialist
New York Independent System Operator, Inc.
10 Krey Blvd.
Rensselaer, NY 12144
(518) 356-7521