

**NYISO Management Response
to
Final Report – Recommendations
of the NYISO Consumer Advisory Council
to the NYISO Board of Directors**

September 6, 2013

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Introduction

The NYISO is committed to operating New York’s bulk power system and wholesale electricity markets in a manner that inures to the benefit of the state’s end-use consumers. We are mindful that New York’s restructured electricity markets were conceived and implemented, among other reasons, to benefit electricity customers and to foster economic development in New York.

In 2011, as part of the NYISO’s efforts to develop and implement a more comprehensive and robust consumer program, the NYISO Board of Directors (the “Board”) created an independent Consumer Advisory Council (the “Council”). The Council was charged with studying the responsibilities and operations of the NYISO, becoming familiar with the NYISO’s five-year strategic plan, learning about anticipated developments in the electric industry, and providing the NYISO with its vision and recommendations as to how the NYISO could best serve the state’s end-use consumers.

The Council was composed of 15 members representing a broad spectrum of academic, environmental, industry, and consumer interest experts from across the nation. The Council held its first meeting in August 2011 and issued its final report titled “Recommendations of the NYISO Consumer Advisory Council to the NYISO Board of Directors” (“Final Report”) in August 2013.

The NYISO maintained ongoing dialogue with the Council throughout this two-year period and began implementing many of the Council’s recommendations prior to the issuance of the Final Report. Some of the key initiatives implemented or planned by the NYISO, consistent with the Council’s recommendations, include increasing the emphasis on end-use consumer issues in the NYISO’s Strategic Plan, facilitating additional consumer interaction with the NYISO through digital media and a dedicated Consumer Interest Liaison, and performing end-use consumer impact analyses on major proposed market design changes.

The Final Report reflects a thoughtful and thorough assessment of the issues that the Council was asked to examine. We appreciate the Council’s hard work and the seriousness with which they approached this task. We largely agree with the Council’s findings, and the NYISO will continue its efforts to address a number of the group’s recommendations included in the Final Report. NYISO Management’s detailed responses to the Council’s recommendations are provided below.

Council Recommendations and NYISO Management Responses

Council Recommendation #1 – Strategic Planning

1.1 Raise the emphasis on end-use consumer issues in future strategic plans

We agree with this recommendation and have increased the emphasis on end-use consumer issues in the NYISO's strategic planning for the 2014-2018 planning cycle. In developing the Strategic Plan, the NYISO has consciously evaluated the potential impact of each of its initiatives on consumers.

The NYISO will continue to focus on end-use consumer issues in future strategic plans. This focus is consistent with the NYISO's recent change to its mission statement to expressly recognize that providing benefits to consumers is one of its core functions. The Council encouraged the NYISO to consider using the Strategic Plan as a means to communicate the specifics of NYISO initiatives that benefit end-use consumers. While end-use consumers figure prominently in the NYISO's strategic planning, we believe that this type of information is more effectively communicated to end-use consumers through direct outreach initiatives, such as the reports of the newly created Consumer Interest Liaison.

1.2 Facilitate additional consumer interaction with the NYISO to hear about strategic changes consumers perceive now and those consumers anticipate in the future

We agree with this recommendation and are pursuing a number of related initiatives. The NYISO is developing a digital media initiative to facilitate additional consumer education and interaction. As part of this initiative, the NYISO will implement portals on its website directed at consumers to provide relevant information to consumers and gather information from them.

1.3 Analyze specific and detailed risks and opportunities (cyber/physical security, fuel diversity, research and development, price, etc.)

The NYISO agrees that it is important to analyze specific and detailed risks and opportunities in its strategic planning process and the NYISO performs such analyses. The Strategic Plan serves as a guide that highlights the NYISO's priorities for stakeholders and market participants at a high level. In connection with the development and execution of the Strategic Plan, the NYISO has performed a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of its various strategic initiatives. The outcomes of these analyses then inform the NYISO's continuing efforts. As the details of each strategic initiative take shape over time, the NYISO is in a better position to analyze and report on the impacts of those initiatives to end-use consumers through its Consumer Interest Liaison.

1.4 Identify changes to each aspect of the industry, including consumers

We agree with this recommendation and we provide stakeholders from each segment of the industry, including consumers, an opportunity to participate in the NYISO's strategic planning process. A majority of the inputs into the NYISO's strategic planning process come from stakeholders. This interaction takes place at two important events: the annual joint Board/Management Committee meeting and the annual stakeholder sector meetings. Stakeholders and sector representatives are encouraged to raise issues they regard to be important at those meetings.

The NYISO uses scenario analysis extensively in its comprehensive reliability planning process to identify changes to each aspect of the industry, including end-use consumer usage patterns. In the Reliability Needs Assessment (RNA) process, the NYISO looks at scenarios based on the full spectrum of stakeholders in its markets and the various drivers of change in the industry. The results of those findings inform the Strategic Plan.

To further the NYISO's awareness of retail consumer concerns, the NYISO plans to more closely monitor and coordinate with the state's retail regulators, the New York Department of Public Service and the Public Service Commission. Policies pursued by these entities have a direct bearing on consumers and can influence NYISO priorities and strategic initiatives, creating a nexus between retail and wholesale issues.

Council Recommendation #2 – Direct Contact with Consumers

2.1 Establish a successor to the Council that includes New York end-use consumers and industry experts

The Council has created a thorough and thoughtful report with a set of insightful recommendations for future consumer outreach. Since the Council’s formation, several other vehicles have already evolved that will keep the NYISO apprised of consumer issues on an on-going basis; notably the NYISO Consumer Interest Liaison. At this point, therefore, we do not believe it is necessary to establish a successor to the Council. The NYISO will instead focus on implementing the Council’s key recommendations and monitoring consumer issues through the Consumer Interest Liaison and other vehicles for consumer feedback.

2.2 Work to make the NYISO relevant and understood by end-use consumers by supporting activities such as:

- **Providing web-based methods to provide relevant and timely information for end-use consumers such as web-based discussions.**
- **Offering a portion of the NYISO website specifically written to help end-use consumers.**
- **Offering periodic well publicized and readily available webinars on topics end-use consumers identify as important.**
- **Reconstituting the Council with more small business and residential consumer representatives, especially those from New York.**

The NYISO agrees with this recommendation and is expanding its efforts to communicate with end-use consumer representatives, who have direct contact with retail consumers, to further the exchange of information with retail consumers. One step the NYISO took recently was to add additional information and a more consumer oriented format on our website (www.nyiso.com). As recommended by the Council, the NYISO plans to further develop that page to provide relevant and timely information tailored for retail end-use consumers. In addition, the NYISO will explore the suggestion to develop webinars on topics that end-use consumers may find useful. As noted above, the NYISO is also developing a digital media initiative to facilitate direct outreach to end-use consumers.

Council Recommendation #3 – Transparency

3.1 To increase credibility and transparency, the NYISO should initiate and widely disseminate:

- **Periodic independent reviews of the NYISO stakeholder governance structure to assess whether it favors any incumbent interests;**
- **Independent and comprehensive management audit of the NYISO;**
- **Independent review and audit of market monitoring, mitigation and fraud provisions to identify deficiencies, recommend corrective actions, and provide a public report.**

The NYISO agrees with the Council that transparency enhances credibility but, for the reasons described below, does not believe that the specific recommendations are the most effective means for promoting credibility and transparency.

The NYISO regularly monitors the balance of its stakeholder governance structure, and we do not believe that a more formal review is warranted at this time. The balance reflected in the current structure was carefully negotiated and was the subject of a formal, mediated proceeding at FERC. Since the NYISO's inception, this system has worked well, and stakeholders have not expressed significant concerns about a material imbalance of interests.

The NYISO is committed to maintaining a balanced governance structure that enables all stakeholders to have a meaningful voice. Voting rights are allocated by sector in a manner designed to avoid favoring incumbent interests or any one group. There are five sectors with voting shares allocated as follows: Generation Owners (21.5%), Other Suppliers (21.5%), Transmission Owners (20%), End-Use Consumers (20%), and Public Power and Environmental Parties (17%). Actions by a stakeholder committee require a 58% affirmative vote to pass, which, in turn, requires the "buy-in" of a broad cross section of market participants.

It is important to understand the role of the independent Board in the NYISO governance process. Even when a proposed tariff amendment receives the requisite 58% vote, the Board must independently consider the merits of that proposal and determine whether it should be adopted. The Board is always informed of the stakeholder vote, including which sectors supported or opposed the action, and briefed on minority positions. The Board must then weigh all parties' interests before reaching a decision and cannot merely "rubber stamp" proposals that garner a majority vote. "Minority" interests also have the right to appeal adverse Management Committee decisions to the Board. Thus, the Board serves as an important safeguard against actions that would harm consumers, or any other group that may have a minority viewpoint. In addition, stakeholder voting information is conveyed to FERC with each filing to amend the NYISO's tariffs.

The NYISO operates in a pervasively regulated environment and is frequently subject to external audits of various types. During the past few years, the NYISO has undergone annual financial statement audits, annual internal control audits, a NERC CIP audit, and an NPCC audit. The NYISO received clean audit reports for each of these audits. The NYISO also received a multi-year FERC compliance audit in 2008 and has implemented a number of best practices based on this audit.

While the NYISO is always open to opportunities for “lessons learned,” we believe there are better uses of the NYISO’s finite resources than to undertake a self-initiated management audit at this time. The NYISO recently hired a new Director of Internal Audit who will be increasing the company’s focus on continuous improvement in the conduct of internal audits. We believe that this will provide significant benefits to the NYISO without being unduly disruptive to ongoing operations.

Consistent with FERC directives, Potomac Economics serves as the NYISO’s independent market monitoring unit (MMU). The core functions of the MMU include reporting on market outcomes, evaluating the competitiveness of the wholesale electricity markets, identifying market flaws, and recommending improvements to the market design. The MMU issues and presents to stakeholders quarterly and annual reports summarizing its assessment of the state of the NYISO markets, which is also posted to the NYISO’s website. Finally, the MMU has an obligation, where appropriate, to make referrals to the FERC Enforcement Division.

3.2 The NYISO customer interface should be designed to accommodate a greater number of end-use consumer interactions

The NYISO agrees with this recommendation and is developing a digital media initiative that will provide for greater interaction with end-use consumers. As part of this initiative, the NYISO will implement portals on its website directed at consumers to provide relevant information to consumers and gather information from consumers. In addition, the Consumer Interest Liaison will continue his monthly calls with consumer interest group representatives.

3.3 Key NYISO studies should undergo an independent peer review process

The NYISO currently performs this task on an on-going basis. The NYISO’s key studies are effectively subject to ongoing peer review through the stakeholder governance process. Currently, stakeholders from all sectors, including the end-use consumer sector, have input into the subject and scope of nearly all NYISO studies, are involved in reviewing the results of those studies, and have a voice in determining the appropriate actions in response to study results. This approach has proven very effective to ensure the quality and effectiveness of these studies.

3.4 Provide a written response to the Analysis Group, January 2011 report on NYISO consumer responsiveness programs as well as any other reports whose recommendations have not been completely addressed

The NYISO has provided a response to its stakeholders through the various initiatives that have been implemented. To summarize, the NYISO has taken several steps to increase transparency and accountability in response to the Analysis Group's January 2011 report and the NYISO's ongoing dialogue with the Council. The NYISO engaged the Analysis Group to benchmark its responsiveness to consumers and consumer interests against other ISOs/RTOs and recommend ways to improve NYISO's responsiveness. The NYISO used this information to launch its consumer responsiveness program. The program accomplishments reflect the NYISO's response to the Analysis Group report. These accomplishments include:

- Hiring a Consumer Interest Liaison as a dedicated resource for developing consumer-focused initiatives and providing a primary point-of-contact for end-use consumer interaction. The Consumer Interest Liaison works closely with, and solicits input from, the stakeholder community to understand and prioritize relevant end-use consumer issues and activities. The Liaison has access to NYISO technical experts and coordinates answers to questions raised by end-use consumer group representatives. The Liaison also has monthly calls with consumer interest group representatives.
- Performing end-use consumer impact analyses on major proposed market design changes. The NYISO is the only ISO/RTO that provides consumers with such an analysis of the impact of changes in market rules.
- Redesigning the NYISO's website to enhance transparency. The NYISO now posts Board meeting minutes publicly and has posted its compensation policy to the website. The updated website expands consumer access to Board and stakeholder meeting minutes, presentations, and other relevant materials.
- Revising the NYISO's mission statement to expressly recognize that providing benefits to consumers is one of its core functions.
- Developing a digital media initiative to broaden end-use consumer outreach. As part of this initiative, the NYISO will implement portals on its website directed at consumers to transmit relevant information to consumers and gather information from consumers.

The NYISO believes these steps represent significant measures to benefit end-use consumers and that further response to the Analysis Group's report is unnecessary at this time. The NYISO will continue to evaluate the effectiveness of these initiatives as part of its ongoing mission to provide benefits to consumers.

Council Recommendation #4 – Privacy Protections

4.1 Recognize and address data security concerns over consumers’ ability to exercise control over whether third-parties may access personal data

We appreciate the importance of protecting the confidentiality of consumer personal data, and agree that utilities should maintain policies for securing, managing, accessing, and sharing retail consumer personal data, including energy usage data. It is worth noting, however, that the NYISO typically does not receive personal consumer data in the performance of its responsibilities.

The NYISO maintains robust cybersecurity practices to protect against data breaches. The NYISO, and all other users, owners, or operators of the bulk power system, must comply with the North American Electric Reliability Corporation’s (NERC) cybersecurity standards for protecting the data possessed by these entities from security breaches. Earlier this year, NERC undertook a stringent audit of the NYISO’s physical and cybersecurity controls and practices and found the NYISO to be fully compliant with its cybersecurity standards.

4.2 Consider supporting policies that will ensure that utilities and other entities refrain from sharing individual consumers’ energy usage data with third-parties without consumers’ authorization

As noted above, the NYISO does not typically receive data specific to individual consumers. However, New York State has been in the forefront of recognizing consumer privacy concerns stemming from the potential for smart grid technologies to result in the flow of consumer information to energy providers. In August 2011, the Public Service Commission adopted a policy statement that establishes regulatory policies and presents guidelines for utilities to follow pertaining to the development of smart grid systems. The guidelines state that utilities must develop and maintain cybersecurity standards and ensure that cost-effective measures are employed to deter, detect, and respond to cyber-attacks.

In addition, New York retail service providers are subject to the Public Service Commission’s Uniform Business Practices (UPB), which require information on customer usage, billing, and credit be treated as confidential. The UPB permits the release of this data, upon a consumer’s authorization, to facilitate a change in service providers.

4.3 Establish policies for securing, managing, accessing, sharing and disposing of data to ensure and protect end-use privacy

As noted above, the NYISO maintains robust cybersecurity measures that protect the confidentiality of the data it possesses. While the NYISO typically does not receive personal consumer data, these stringent protections would be extended to any such data that it receives in the future.

Council Recommendation #5 – Energy Efficiency and Demand Response

5.1 Encourage energy efficiency and other end use measures that are deemed superior to transmission solutions and ease the process for regulated cost recovery

The NYISO currently performs this task on an on-going basis. The NYISO recognizes the importance of energy efficiency and demand response. We encourage demand response providers to participate in our markets and value their contribution to our system reliability, especially during peak conditions. The NYISO has four demand response programs: the Emergency Demand Response Program (EDRP), Installed Capacity Special Case Resources (SCR) Program, Day-Ahead Demand Response Program (DADRP), and Demand-Side Ancillary Service Program (DSASP). The EDRP and SCR program are activated by the NYISO as necessary to meet reliability needs. Under DADRP and DSASP, the market participant decides when to make its resource available based on economic consideration. We are now working to incorporate a Real-Time Demand Response Program.

While the NYISO does not control the process for regulated cost recovery for energy efficiency programs because they are within the jurisdiction of the New York Public Service Commission, we incorporate the expected results of those measures in our Reliability Needs Assessment (RNA).

5.2 Facilitate the adoption of technologies such as distributed generation, community energy storage, smart grid technologies and microgrids

This is a new initiative for the NYISO, driven primarily by input from the Council. A technical workshop will be held this fall to gather industry input into this potential. The NYISO recognizes the value of these alternative technologies and strives to facilitate the integration of a diverse mix of resources to serve the electricity needs of end-use consumers. The NYISO plans to conduct a workshop this fall to obtain stakeholder feedback on issues related to behind-the-meter generation and other behind-the-meter resources. The NYISO is also in the process of hiring a consultant to conduct a study to survey the current and potential future state of distributed energy resources. Developments with respect to alternative technologies are occurring regularly. The NYISO will continue to monitor those developments attentively and work with stakeholders to explore opportunities for grid integration.

Council Recommendation # 6 – New Technologies

6.1 The Council recognizes and strongly endorses the NYISO program to install a PMU network in conjunction with the ARRA Investment Grants awarded in 2011

We agree with the Council’s recommendation that the NYISO should take advantage of emerging real-time digital grid management equipment and analytic tools. The NYISO, working with the New York Transmission Owners, recently completed the implementation phase of its \$74 million smart grid initiative, supported by a U. S. Department of Energy Smart Grid Investment Grant of more than \$37 million. Phasor measurement units (PMUs) were installed at 41 substations throughout the state and over 900 MVars of capacitors were installed pursuant to this initiative.

The new capacitors will improve the efficiency of the bulk transmission system by reducing the amount of electricity lost when carried over long distances, saving approximately \$9 million per year. The PMUs will improve the NYISO’s ability to assess the condition of the transmission system on a real-time basis by providing much faster intelligence relative to changing system conditions, thereby improving system reliability.

6.2 The Council strongly encourages the NYISO to begin defining an agenda to progressively extract multiple benefits from this PMU network in advanced applications for existing reliability practices and to actively explore emerging new concepts that offer potential net benefits to New York consumers. Specific topics to consider include:

- **Prepare to utilize emerging NYISO PMU data streams to enhance situational awareness tools and enhance state estimator operations.**
- **Monitor DOE R&D results in the Advanced Grid Modeling Program to identify how high performance computing (HPC) can transform operational tools (minutes to seconds) and planning tools (days to minutes).**
- **Assess the potential benefits of emerging new paradigms of real-time tools that leverage PMUs and HPC to develop predictive real-time tools.**
- **Examine new concepts for handling the high volume and high velocity data sets that far exceed current practices.**

This is currently a high priority strategic initiative for the NYISO, driven primarily by input from the Council. The NYISO is currently identifying new advanced applications that will make use of the PMU platform we have put in place.

New Applications -- As part of the smart grid initiative, the NYISO also implemented an integrated, synchronized phasor network that includes a visualization application, an enhanced state estimator, and a voltage stability monitoring application. The phasor network works in concert with the existing control and monitoring systems. The applications allow the NYISO to use the PMU data streams to enhance situational awareness. In the upcoming months, the NYISO plans to fully integrate the phasor network with the state-of-the-art video wall installed in the new control center. Over the next several years, the NYISO will continue to enhance the phasor network applications to improve the NYISO's ability to detect system vulnerabilities and disturbances in real-time and potentially mitigate their impact.

The NYISO is also leading an initiative with other reliability coordinators in the Eastern Interconnection to develop a network that will allow for the reliable, secure, and efficient sharing of operational data, including PMU data, with neighboring control areas. This initiative, as well as future enhancements to the NYISO's smart grid applications, should provide the NYISO with opportunities to examine new concepts for handling high volume and high velocity data sets and to consider high performance computing applications. The NYISO has deployed high performance computing software for transmission congestion contract planning purposes.

Council Recommendation # 7 – Flexible Grid

- 7.1 The NYISO should enact programs and policies to identify optimal means of leveraging emerging demand response and smart grid concepts at scale, across all customer types. NYISO should closely monitor the emerging “transactive energy” community of innovation and R&D to monitor “lessons learned” elsewhere that offer insight on how to expand the role of demand response at scale consistent with the New York regulatory environment**

This is currently a high priority strategic initiative for the NYISO. The NYISO agrees that it should continue to pursue initiatives to enhance grid flexibility. The NYISO does not directly interact with retail consumers but works with its market participants that are demand response aggregators to encourage retail participation. The NYISO has conducted many studies on the benefits and market potential for emerging demand response and smart grid concepts and believes that dynamic pricing is the best mechanism to incent retail consumers to participate.

To implement dynamic pricing and smart grid concepts at scale, the distribution companies would need to replace the one-way meter devices used at the homes of most New York retail consumers with interval meters that allow for two-way communications. The distribution companies have not yet taken this action. The Public Service Commission has the power to mandate this action but has opined that it will not, at this time, require the deployment of advanced metering infrastructure technology on a system-wide basis. The NYISO will work closely with the NYSPSC to further develop the implementation of real-time pricing in New York.

- 7.2 The NYISO should extend its evaluation of energy storage as part of their system planning to identify optimal levels of storage to provide the balancing and regulation services needed for multiple energy futures in New York State**

This is currently a high strategic priority of the NYISO. The staff agrees with the Council that new energy storage resources represent a promising addition to the resource mix available to serve the electricity needs of New York. The NYISO has made it a priority to facilitate the integration of new energy storage resources into its overall market design. For example, the NYISO was the first grid operator to develop market rules and software enhancements to provide Limited Energy Storage Resources (LESRs) with access to the market. In addition, one of the NYISO’s key initiatives is expanding gas-electric coordination, including the development of a market design for electric energy storage to address generator intermittency that result from gas pipeline contingencies. The NYISO will continue to support the integration of energy

storage technologies, including electric vehicles, grid scale storage, and distributed energy technologies.

7.3 The NYISO should work with industry, DOE and regulators to examine how to provide a common approach for signaling, measurement, and verification of ancillary services for New York, New England and the nation

The NYISO will consider the potential benefits from standardizing the approach to signaling, measurement, and verification of ancillary services across the nation and pursue this initiative as appropriate. The NYISO currently does not buy ancillary services from neighboring control areas because most of these services are localized and would lose value if traded across longer distances.

The NYISO understands the value of increasing the diversity of the types of suppliers of ancillary services. The challenge lies in providing the flexibility to accommodate participation by new types of resources while maintaining stringent performance standards to ensure the reliability of electric service. The NYISO is currently working with renewable resources to supply voltage support service. The NYISO is also writing specifications for aggregators and working towards metering standardization for aggregators to allow them to offer demand response in reserves and regulation markets. We plan to continue these and similar efforts to realize as much value from these new sources of ancillary services as possible.

Council Recommendation #8 – Broader Public Policy Context

8.1 The NYISO should acknowledge that its decisions may have consequences for New York residents beyond reliability and the competitiveness of wholesale electricity markets

The NYISO currently performs this task on an on-going basis through the activities of its Consumer Interest Liaison. The NYISO acknowledges that its decisions may have consequences for New York residents beyond reliability and the competitiveness of wholesale electricity markets. We firmly believe that competitive wholesale electricity markets drive efficiency, which translates into important retail benefits. In addition to the objectives of reliability and efficiency, the NYISO is implementing FERC’s Order 1000 and establishing a process for considering public policy requirements in its transmission planning processes.

8.2 The NYISO should work with public policy makers and the public to address these consequences

The NYISO is not a public policy making organization but it is uniquely equipped to provide objective data and analysis on key energy issues facing New York. The NYISO’s role in state energy planning – and specifically in developing ten-year NYISO system plans designed to ensure long-term resource adequacy and transmission system security – provides critical information for state energy policy development. Similarly, the NYISO carries out various analyses to help policy makers and the public at large understand the economic and reliability impacts of proposed environmental policies. The NYISO also has an active dialogue with the Department of Public Service that regularly addresses economic, engineering and other technical matters.

8.3 The increased utilization of natural gas is an example and should be considered in this context

This is currently one of the NYISO’s top strategic priorities. The NYISO monitors emerging market trends and analyzes the potential impact on our markets. One of the NYISO’s key initiatives is to expand gas-electric coordination by: (i) enhancing NYISO operations and planning in an environment of expanded dependency on natural gas-fired generation, renewable generation, and retirements of less efficient generation; (ii) increasing NYISO Control Room visibility into the operations and maintenance of the gas pipeline system serving New York generators; (iii) enhancing maintenance coordination between the gas and electric systems to minimize the chances for supply disruptions to impact electric system reliability and/or market efficiency; (iv) completing an interregional gas/electric study to examine the impacts of natural gas expansion on bulk power systems in the near and long-term and incorporating relevant findings into economic, reliability, and public policy planning processes;

and (v) developing a market design for electric energy storage to address generator intermittency and gas pipeline contingencies. The NYISO has created a Gas Electric Coordination Task Force to facilitate these initiatives.

Recommendation #9 – Crisis Management

9.1 Evaluate impacts to operations from potential changes in transmission and generation

The NYISO currently performs this task on an on-going basis. The evaluation of a number of impacts to operations from potential changes in transmission and generation can and has been accomplished as part of the NYISO's existing (RNA) planning process. The NYISO has historically evaluated potential changes in generation (e.g., coal retirements) as well as known changes (e.g., future transmission plans), and expects to continue these evaluations.

9.2 Make appropriate updates to emergency operations plans to address the experiences of recent severe events and possible future events

The NYISO agrees with this recommendation. The NYISO and the Transmission Owners conducted a lessons learned exercise immediately following Hurricane Sandy with a focus on the adequacy of our current operating procedures and protocols. Based on this review, the NYISO plans to update its operating procedures to incorporate procedures for enhanced severe weather impact awareness. In addition, the NYISO has an integrated facility redundancy and business continuity plan to allow the NYISO staff and systems to operate and conduct its mission through various severe weather and emergency scenarios.

The NYISO also coordinates with the New York Transmission Owners on emergency operations ahead of system events to reduce the likelihood of system outages and after such events to ensure electric service is restored to consumers, when necessary, as quickly as possible. The NYISO participates in regular operational and system restoration drills with the Transmission Owners to prepare for emergency situations. These systems and plans are tested on a regular basis.

9.3 Conduct a security risk assessment with respect to cyber/physical security assuring the proper implementation of tools, standards, procedures and restoration planning

The NYISO currently performs this task on an on-going basis. The NYISO regularly performs audits on different aspects of its cyber and physical security programs on an ongoing basis. These audits include both physical and cyber penetration tests conducted by third parties.

Earlier this year the NYISO underwent a NERC critical infrastructure protection audit and received a clean audit report. As part of the audit preparation process, the NYISO conducted a risk assessment and mock audit to focus on compliance with NERC standards. In addition, as part of the smart grid project, the NYISO undertook a comprehensive review of its cybersecurity

practices and enhanced its cybersecurity plan. Finally, the NYISO recently performed a physical security assessment in anticipation of migration into the new control center at Krey Blvd.

9.4 Explicitly examine earth system models in determining the magnitude of future events (floods, temperature extremes, wind, etc.)

The NYISO currently performs this task on an on-going basis. Predictions about weather conditions, both near- and long-term, are important to the NYISO. The examination of earth system models can be considered by the NYISO by consulting with, or reviewing work by, other agencies to improve our awareness of the potential frequency and/or magnitude of future severe weather events.

The NYISO currently contracts with a few vendors with expertise in this area. These vendors provide the NYISO with real-time weather information that is used by the operations group to manage the grid, in particular during severe weather events. One of these vendors currently provides the NYISO with expected climate conditions on a two-year-ahead basis. The NYISO's forecasting group also analyzes data on historic extreme weather conditions on a regular basis to help predict future events.

Conclusion

The NYISO is committed to operating New York’s bulk power system and wholesale electricity markets in a manner that inures to the benefit of the state’s end-use consumers. We are mindful that New York’s restructured electricity markets were conceived and implemented, among other reasons, to benefit electricity customers and to foster economic development in New York.

The Final Report reflects a thoughtful and thorough assessment of the issues that the Council was asked to examine. Both the NYISO and end-use consumers will benefit from this work. As discussed above, the NYISO maintained ongoing dialogue with the Council throughout its evaluation period and has already implemented a number of the Council’s recommendations. We will continue our efforts to address many of the Council’s recommendations, consistent with our management responses above, as we continue to advance consumer initiatives and enhance our comprehensive consumer program.