NEW YORK INDEPENDENT SYSTEM OPERATOR
10 Krey Boulevard ♦ Rensselaer, NY 12144

By Electronic Delivery

December 21, 2010

Hon. Jaclyn A. Brilling
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Subject: Petition of the New York Independent System Operator, Inc. Pursuant to Section 69 of the New York Public Service Law

Dear Ms. Brilling:

Pursuant to the electronic filing guidelines of the Public Service Commission of the State of New York, attached for filing is the Petition of the New York Independent System Operator, Inc. ("NYISO") for Authority to Incur Indebtedness for a Term in Excess of Twelve Months, together with supporting affidavits and documents.

Should you have any questions, please contact me by phone at (518) 356-6220 or by email at cpatka@nyiso.com.

Very truly yours,

/s/ Carl F. Patka
Carl F. Patka
Assistant General Counsel

BEFORE THE
NEW YORK STATE PUBLIC SERVICE COMMISSION

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In the Matter of the Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

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PETITION OF THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC. FOR AUTHORITY TO INCUR INDEBTEDNESS FOR A TERM IN EXCESS OF TWELVE MONTHS

DATED: DECEMBER 21, 2010

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Pursuant to Section 69 of the New York Public Service Law ("NYPSL") and applicable parts of Title 16 of the New York Code of Rules and Regulations ("NYCRR"), The New York Independent System Operator, Inc. (the "NYISO") submits this Petition to request authorization from the Public Service Commission of the State of New York ("NYPSC" or "Commission") to incur indebtedness for a term in excess of twelve months.

As described in detail below, the NYISO respectfully submits that the Commission should authorize this credit facility because it is necessary to finance a construction and renovation project at the NYISO's facilities. This project, described in detail below, includes:

- Construction of an addition to serve as a new primary control center at the NYISO's Krey Boulevard facility to provide necessary situational awareness technology and expanded space for additional control center operator positions.

- Construction of an addition at the NYISO's Carman Road facility to serve as the new data center.

- Upgrades and improvements to the control center at the NYISO's Carman Road facility to serve as the new alternate control center.

- Additional renovations at both the Krey Boulevard and Carman Road properties to rectify specific deficiencies and implement certain technology upgrades.

Each aspect of the proposed project is necessary to address scheduled or anticipated reliability and compliance changes in the industry that have been mandated or proposed by regulators, policymakers and stakeholders. These initiatives include implementation of Broader Regional Markets, introduction of Smart Grid Technologies, incorporation of intermittent renewable resources, and evolving mandatory NERC reliability standards that potentially will apply to all New York Control Area transmission facilities 100 kV and above. The proposed project has been carefully considered by the NYISO and its stakeholders. Completion of this project will allow the NYISO to better fulfill its core mission of maintaining the reliability of the bulk power system and operating economically-efficient wholesale markets that provide electric service to the ratepayers of New York State by increasing situational awareness in its control centers and accommodating additional operations staff including two new operator positions needed to implement (i) Broader Regional Markets, and (ii) operational responsibilities for transmission facilities 100 kV and above, if implemented by NERC. In addition, the proposed project provides the NYISO with the ability to add a third operator position for the integration of additional renewable energy resources and the implementation of Smart Grid technologies. The NYISO submits that the proposed project represents the most cost-efficient and logical option to

address the NYISO's core mission and its evolving responsibilities. The initiatives described herein will be implemented beginning in 2013, and construction will take approximately 36 months to complete. Accordingly, the NYISO respectfully requests that the Commission approve the proposed financing so the project can be completed as soon as possible in 2013.

The current primary control center at Carman Road, together with the alternate control center at Krey Boulevard, have served the NYISO well and have been incrementally upgraded and expanded over the past few decades to meet changing needs. For the reasons discussed below, the NYISO submits that a new primary control center and significant upgrades to other aspects of the NYISO's facilities are necessary. Without the proposed project, the NYISO submits that it will face unacceptable risks to reliability impacting its ability to perform its current operating responsibilities together with the new initiatives that the Federal Energy Regulatory Commission ("FERC"), the United States Department of Energy ("DOE") and the NYPSC expect the NYISO to implement.

I. Background

The NYISO is a not-for-profit corporation, tax exempt under section 501(c)(3) of the Internal Revenue Code, that: (i) operates and maintains the reliability of the bulk power system; (ii) administers the wholesale electricity markets; and (iii) conducts short-term and long-term planning for the bulk power system within the New York Control Area. The NYISO is an

"electric corporation" under the New York State Public Service Law[1] and, therefore, may not incur indebtedness payable at periods exceeding twelve months without prior authorization from the NYPSC.[2]

The NYPSC has previously authorized ten NYISO requests to incur indebtedness with a term exceeding twelve months:

- The first authorization was by Order issued September 9, 1999, in Case No. 99-E-1176, whereby the Commission authorized a $12,000,000 revolving line of credit ("Revolver") for working capital purposes. On September 7, 2000, the Commission authorized an increase in the Revolver to $50,000,000.

- The second authorization was by Order issued October 20, 1999, also in Case No. 99-E-1176, whereby the Commission authorized a $54,000,000 term loan agreement ("Term Loan") for start-up costs.

- The third authorization was by Order issued October 25, 2001, in Case No. 01-E-1068, whereby the Commission authorized a three-year term note ("3-Year Term Note") with a credit line up to a maximum of $20,000,000 to purchase computer hardware.

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[1] NYPSL § 2(12-13). Although many of the functions of the NYISO are regulated by the FERC, the NYPSC determined that the NYISO is an "electric corporation" in an Order issued in Case No. 00-E-1380 (August 14, 2000).

[2] NYPSL § 69.

- The fourth authorization was by Order issued February 10, 2003, in Case No. 02-E-1565, whereby the Commission authorized a five-year term note ("5-Year Term Note") with a credit line up to a maximum of $59,300,000 to purchase computer equipment and software upgrades.

- The fifth authorization was by Order issued March 8, 2004, in Case No. 03-E-1770, whereby the Commission authorized a $100,000,000 revolving line of credit with three separate four-year term loan conversion options ("2004-2006 Budget Facility") to provide funding for strategic initiatives related to the management of the New York power grid for the years 2004, 2005 and 2006.

- The sixth authorization was by Order issued May 10, 2005, in Case 05-E-0270, whereby the Commission authorized a total of $25,000,000 in secured financing ("Mortgage and Renovations Loan") to provide funding for the acquisition of certain real property, and for the renovation of the office building thereon.

- The seventh authorization was by Order issued July 21, 2005, in Case No. 05-E-0503, whereby the Commission authorized a $50,000,000 revolving line of credit ("Replacement Revolver") to replace the Revolver, which was to expire in October, 2005.

- The eighth authorization was by Order issued January 19, 2007, in Case No. 06-E-1254, whereby the Commission authorized a $80,000,000 revolving loan facility ("2007-2010 Budget Facility") to provide funding for strategic initiatives related to the management of the New York power grid for the years 2007, 2008, 2009 and 2010.

- The ninth authorization was by Order issued July 19, 2010, in Case No. 10-E-0160, whereby the Commission authorized a $50,000,000 revolving line of credit ("2010 Revolver") to replace the Replacement Revolver, which was to expire in July, 2010.

- The tenth authorization was by Order issued July 19, 2010, also in Case No. 10-E-0160, whereby the Commission authorized a $75,000,000 revolving loan facility ("2011-2013 Budget Facility") to provide funding for strategic initiatives related to the management of the New York power grid for the years 2011, 2012 and 2013.

By this Petition, the NYISO requests authorization from the Commission to borrow up to $45,000,000 (the "Proposed Construction Facility") to finance construction of (i) an addition to serve as the new primary power control center and related improvements on real property leased by the NYISO and constituting a portion of the property commonly known as 10 Krey Boulevard, Rensselaer, New York 12144 (the "Krey Property"), and (ii) construction of an addition to serve as the new data center, upgrades to the NYISO's power control center to serve as the new alternate control center and other upgrades on real property owned by the NYISO and constituting a portion of the property commonly known as 3890 Carman Road, Schenectady, New York 12303 (the "Carman Property") (collectively, the "Project").

Because it will take approximately 36 months to complete the Project, it is necessary to begin at this time to meet the future reliability needs of New York State so that the NYISO will be prepared to implement multiple new reliability and market initiatives in 2013. As described herein, the NYISO's current facilities will be inadequate to meet these future needs.

The Proposed Construction Facility will take the form of a construction loan to be advanced as needed until completion of the Project, with interest-only payments due for the first

36 months until conversion to a permanent loan with a term of 17 years. The Proposed Construction Facility will be secured by a first lien mortgage (and related Uniform Commercial Code filings, if any) on the Carman Property (the "Carman Mortgage") and carry an interest rate equal to a one, three or six month LIBOR[3] plus a margin of 325 basis points. The Proposed Construction Facility is currently scheduled to close on or before August 31, 2011. The terms of the Proposed Construction Facility are more fully described in Section IV of this Petition and in the commitment letter ("Commitment Letter") attached to and made part of this Petition as Attachment I. Incurring indebtedness for a period of more than 12 months is the best means to finance the bulk of the Project because it involves construction of capital facilities that will serve New York State for years to come, and, as described herein, represents a reasonable means to reduce the short-term impact of the cost of the Project on ratepayers.

For the reasons set forth in this Petition and the supporting Attachments, the Project and the Proposed Construction Facility required to finance the Project are consistent with the proper utility purposes of the NYISO and are in the public interest.

II. Description of the Project

The Project involves the construction of an addition at the Krey Property ("Krey Control Center"), construction of a new data center at the Carman Property, renovation of the existing control center located at the Carman Property ("Carman Control Center"), and certain improvements at both properties. Upon completion of this multi-phased undertaking, the Krey

[3] London Interbank Offering Rate for the corresponding deposits of U.S. Dollars quoted by major banks in London.

Property will become the primary control center and work place for most operations staff, and the renovated Carman Control Center will be the new alternate control center. The Project will involve a mix of new construction, facility upgrades, and technology implementation, with construction activities to be performed at each of the two NYISO facilities: (1) new construction and upgrades at the Carman Property are expected to be completed in approximately one year, followed by (2) new construction at the Krey Property expected to be completed in approximately two years thereafter.[4]

The site improvements at the Carman Property will include a small building expansion to house a new data center, control center renovations for additional grid operations functions, replacement of emergency generation facilities, and remediation of other facility deficiencies to continue operating the control center reliably. Project activities at the Krey Property will entail a building expansion to house a new control center designed to meet evolving grid reliability and market operation requirements outlined below, the creation of sufficient office space to locate the NYISO operations staff at the Krey Control Center, updated control center technology to enhance situational awareness[5], and the addition of a second power feed and enhanced emergency generation facilities at the Krey Property. The new Krey Property addition will be approximately 64,000 square feet, consisting of approximately 27,000 square feet for the control

[4] The Project schedule was changed to extend the construction period from two years to three years due to the need to proceed with certain urgent aspects of the Project in 2010. *See* Footnote 6.

[5] Situational awareness refers to the ability of system operators to continuously monitor the system so that system contingencies can be better managed so as to reduce the likelihood of a violation of reliability standards or that cascading outages will occur. Situational awareness is increasingly necessary as operators are required to process an anticipated increase in the volume of data resulting from the implementation of technology upgrades such as the Smart Grid system.

center, 30,000 square feet for office space to house operations staff needed to run the bulk power system and wholesale markets, and 7,000 square feet for a security lobby.

Construction activities at the Carman Property started in 2010,[6] and are scheduled to be complete in early 2012. Construction activities at the Krey Property are targeted to begin in the second half of 2011, with the new control center to be activated by late 2013 and the remaining construction to be completed no later than mid-2014.

The going-forward cost to complete the Project is $48,900,000, $7,000,000 of which is projected to be funded from sources outside of this Petition (some of which comes from spending underruns against amounts budgeted for 2010), for a cost currently expected to be financed by the Proposed Construction Facility of up to $41,900,000. Therefore, the NYISO is requesting authorization for financing in the aggregate amount of $45,000,000, which includes a financing contingency of $3,100,000.[7] The NYISO has high confidence that the Project can be completed within the financing limit.

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[6] Due to the urgency of certain needs, the NYISO has completed or commenced work on certain activities related to the Project including: (i) asbestos abatement at the Carman Property, (ii) procurement of emergency generators for both the Carman Property and the Krey Property, (iii) design and construction of the data center addition at the Carman Property, and (iv) design of the new control center at the Krey Property. The NYISO expects to have incurred approximately $2,000,000 for work undertaken in 2009 and $5,000,000 for work undertaken in 2010 (based, in part, on projected expenditures for the latter part of 2010, which remain subject to confirmation upon completion of the NYISO's 2010 annual financial statements).

[7] Given the uncertainties that can exist between initial plans and final design, and the relative expense of securing an additional loan commitment as opposed to funding a contingency out of current operating budgets, the NYISO determined that it was prudent to establish a reasonable financing contingency. A financing contingency will permit the NYISO to address necessary but unforeseen changes in the design or scope of the Project. The amount of the financing contingency is lower than requested in 2009 because the NYISO planning process has advanced such that it is better able to estimate the total actual cost of the Project.

The cost estimates developed for the Project were derived from a detailed requirements process, are based on a set of concept designs produced by a qualified architect, and are supported by material and labor estimates from reputable builders. The breakdown of the estimated going-forward costs to complete the Project is as follows:

	2011	**2012**	**2013**	**Totals**
Carman Property Data Center and other Upgrades	$10,900,000	2,500,000	--	$13,400,000
Krey Property Control Center Design	$1,200,000	--	--	$1,200,000
Krey Property Construction	--	$17,000,000	$17,300,000	$34,300,000
Totals	$12,100,000	$19,500,000	$17,300,000	**$48,900,000**

The total cost of the Project has increased from the estimated cost the NYISO calculated in 2009 due to the following factors:

- Project lifecycle: The current plan spans three years whereas prior plans occurred over two years.

- Economic synergies: Economic synergies resulting from the previous plan for simultaneous construction at both sites have been reduced due to the current plan to sequence construction at the two sites.

- Higher construction and material costs: As anticipated, material costs have increased since 2009.

- Inflation: Inflationary assumptions are included for a longer project timeline.

- Additional Architectural Analyses: Additional scenario analyses for planning options and justifications were not included in original estimates.

On November 17, 2010, the NYISO's Management Committee, which is composed of market participants from all industry sectors, recommended that the NYISO proceed with filing this Petition for approval of financing for the Project by an affirmative vote of over 80%.[8] On December 20, 2010, the NYISO Board of Directors unanimously approved the Project and the Proposed Construction Facility.

III. Rationale for the Project

Over the course of the next three years, the NYISO will be required by FERC, the DOE and the NYPSC to implement or be prepared to implement the following four initiatives: (1) Broader Regional Markets (FERC)[9], (2) the incorporation of Smart Grid Technologies (DOE)[10], (3) increasing incorporation of intermittent renewable generation resources (NYPSC Renewable Portfolio Standard)[11], and (4) evolving NERC requirements, potentially including reliability

[8] The NYISO governance process requires a 58% affirmative vote for the Management Committee to approve proposed actions. *See* Section 7.10 of the NYISO Independent System Operator Agreement. The actual vote was as follows: 81.6% in favor, 6.13% against, and 12.27% abstaining.

[9] *Order Conditionally Accepting NYISO's Status Report Addressing the Development of Long-Term, Comprehensive solutions to the Occurrence of Lake Erie Region Loop Flows*, Final Rule, Order on Compliance Filing Docket No. ER08-1281-004, 132 FR 61031 (July 15, 2010).

[10] DOE Grant No. DE-OE0000368.

[11] Case 03-E-0188, Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard, *Order Establishing New RPS Goal and Resolving Main Tier Issues* (issued and effective January 8, 2010), at 13 (approving increase of Renewable Portfolio Standard from 25 percent of New York energy generation by 2013 to 30 percent of energy generation by 2015).

oversight of all New York Control Area transmission facilities 100 kV and above (FERC)[12]. After considering several means by which the NYISO could achieve the necessary enhancements, it was determined that the Project would be the most cost-effective and efficient option given the existing constraints posed by the NYISO's aging facilities.

The NYISO engaged several independent consultants, Potomac Economics ("Potomac"), KEMA, Inc. ("KEMA") and Energy Initiatives Group, LLC ("EIG"), to assist in its analysis of the Project. Potomac was engaged to assess the potential benefits of the Broader Regional Market initiatives. The Affidavit of David B. Patton, Ph.D. of Potomac is attached as Attachment XII hereto and includes Potomac's full report. KEMA was engaged to (i) review the adequacy of the facilities at the Carman Property and the Krey Property for accommodating existing and new responsibilities to maintain reliable grid operations and efficient market administration, and (ii) to make recommendations regarding any necessary modifications or improvements to the facilities in keeping with industry best practices. The Affidavit of Ralph Masiello is attached as Attachment XIII hereto and includes KEMA's full report. EIG was engaged to conduct a cost-benefit analysis of the Project and several alternatives to the Project to determine which is the most cost-effective approach for upgrading the NYISO's facilities. The Affidavit of Francis J. Flynn of EIG is attached as Attachment XIV hereto and includes EIG's full report. The recommendations and analysis of each of the consultants were carefully considered by the NYISO and formed an important part of its decision to proceed with the Project.

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[12] *Revision to Electric Reliability Organization Definition of Bulk Electric System*, Final Rule, Order No. 743, FERC Stats. & Regs. 133 FR 61150 (Nov. 18, 2010).

A. Meeting Expanded Operational and Reliability Needs

Before deciding to proceed with the Project, the adequacy of the existing NYISO facilities was assessed not only against current operational responsibilities and reliability requirements, but also against future responsibilities and requirements. The assessment considered the lead time necessary to develop new control center facilities or to renovate existing facilities before the NYISO's responsibilities surpass its capabilities. The following is a discussion of the expanded market, operational and reliability needs that formed the basis of the NYISO's assessment. The Affidavit of Rick Gonzales, Senior Vice President and Chief Operating Officer of the NYISO, attached hereto as Attachment IX supports the following discussion.

1. Broader Regional Markets Initiatives.

The NYISO, in coordination with its neighboring Independent System Operators ("ISOs") and Regional Transmission Organizations ("RTOs"), intends to implement a set of related market enhancements, collectively called the Broader Regional Markets initiatives. These initiatives will improve the NYISO's ability to address complex seams issues, market inefficiencies, and reliability challenges that result from unscheduled power flows around Lake Erie. More generally, the initiatives will improve inter-regional ISO efficiencies through the availability of enhanced market operations and ISO-to-ISO coordination. These market enhancements are planned to be incorporated beginning in 2013 and, therefore, any required facility upgrades to take full advantage of these initiatives should be in place in that year. The following is a summary of some of the Broader Regional Market initiatives:

- Buy-Through of Congestion - Cost allocation and recovery of congestion costs from those external parties not currently participating in the NYISO markets but responsible,

in part, for creating transmission system congestion. Buy-Through of Congestion would require that the congestion cost resulting from a party's transaction schedule be charged based on the physical flow of power, unlike the current settlement determination that is based only on the party's transaction contract path. For example, a party's transaction scheduled from Ontario to MISO to PJM would be charged for any resulting congestion impact in New York.

- Market to Market Coordination - Redispatch of generators within a neighboring control area to address transmission constraints when that dispatch is more cost effective than the dispatch of generators within the control area experiencing the constraints.

- Interface Pricing Revisions - Improvement of the pricing of energy for NYISO transaction schedules between individual grid operators (ISOs and RTOs) to allow for more efficient inter-regional power transfers.

- Interregional Transaction Coordination - Flexible transaction scheduling provisions between individual grid operators (ISOs and RTOs) to improve market and operational efficiency by allowing transaction schedules to more frequently adjust to the ever-changing system conditions and to respond to system contingencies.

These market enhancements are designed to reduce uplift costs associated with congestion and real-time event management, to improve the capability to incorporate intermittent resources, and, thereby, to lower total system operating costs. The NYISO expects the Broader Regional Market

initiatives to enhance reliability through regional dispatch and result in cost savings of up to $193,000,000 annually[13] that will benefit consumers in the State of New York.

2. Smart Grid Technologies.

The NYISO is in the preliminary stages of a Department of Energy-funded project, along with the New York Transmission Owners, to deploy a network of phasor measurement units ("PMUs") on the New York power grid and to integrate the data collected from the PMUs to provide greater situational awareness for NYISO control center operators. This project is scheduled to be implemented by 2013. The NYISO intends to integrate PMU data with existing NYISO systems at its control centers. The applications that PMU technology will support include:

- Wide-area visualization and monitoring.
- Phase angle and frequency monitoring.
- Inter-area oscillation detection and analysis.
- Proximity to voltage collapse.
- Dynamic model validation.
- Fast frequency regulation.
- Potential optimization of capacitor operation for reliability and loss reduction.

In the long-term, the NYISO's PMU network will interoperate with PMU networks in New England, the Mid-Atlantic, the Midwest, and Ontario to create broader situational awareness in

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[13] *See* Potomac Report, Page 12.

the NYISO's control centers and in control centers throughout the Eastern Interconnection. This may help to avoid major system disturbances such as the 2003 Northeast regional blackout, which resulted in significant costs.[14]

Planned enhancements to the NYISO's control center layout, to be implemented as part of the Project, will provide necessary infrastructure and state-of-the-art visual displays to receive, process, and monitor changing system conditions effectively throughout the Eastern Interconnection received via the PMU network, providing the NYISO with the enhanced capability to take actions to assist in the maintenance of reliable system operations.

The Project's objectives are fully consistent with the NYPSC's views about the value of PMUs to prevent or mitigate system disturbances. The New York State Department of Public Service *Second Report on the August 14, 2003 Blackout* identifies needed steps to avoid future outages. The report states that:

> The next step is modeling changes that could be made to the transmission system to see if those changes could prevent or mitigate the consequences of similar events. Some of the more conventional steps that are being examined include reviews of protective relay settings for transmission lines and generators, evaluations of the adequacy of underfrequency and undervoltage load shedding, assessments of the adequacy of transmission connections within New York and with our neighbors, ***and use of sophisticated measurement devices (phasor measurement) to monitor the***

[14] For the United States alone, costs estimates resulting from the 2003 blackout ranged from $4 to $10 billion. *U.S. Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* (April 2004).

> ***status of the entire Eastern Interconnection (most of the United States and Canada east of the Rockies)***. [15]

The Commission further expressed support for a New York State PMU network in its July 27, 2009 Order preliminarily authorizing rate recovery of funds to match DOE stimulus funds for the thirty-nine PMUs to be installed by the Transmission Owners.[16] The NYPSC stated that:

> The statewide PMU network would provide a wide area and local region visualization of the transmission system. The system would be set up with alarms to notify operators of possible voltage violations and angular separation of generators in other control areas and to be able to take preventive measures. In addition, the system would provide a history for event re-creation following an event. Each utility is expected to retrieve the data and have one or more phasor data concentrators to pick up the data and forward the data to the NYISO. In concert with the NYISO project, RPI will develop software to collect the data, screen for bad data, alarm for conditions that could lead to a system collapse, and enable the users to work with information received from other ISO control areas. The full scale application of PMU[s] is expected to take several years to accomplish and develop the analytical tools to work with it. Because this project provides *system-wide benefits*, *expands* an existing program and provides *foundational information* for the development of more advanced operational systems, we will approve it.[17]

The Project was conceived, in part, to maximize and enhance the benefits from the integration of the PMU data and provide NYISO with improved visualization capabilities and situational awareness. Had such tools been in place throughout the Eastern Interconnection in 2003, it is possible that the August 14, 2003 blackout could have been prevented or at least its effects

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[15] The New York State Department of Public Service Second Report on the August 14, 2003 Blackout – October 2005, at 19 (emphasis added).

[16] Case 09-E-0310, Matter of the American Recovery and Reinvestment Act of 2009 – Utility Filings for New York Economic Stimulus, Order Authorizing Recovery of Costs Associated with Stimulus Projects (issued and effective July 27, 2009), at 20-21.

[17] Id., Order at 21 (emphasis in original).

limited.[18] The statewide PMU network is scheduled to be completed in 2013. Development of the Project and the statewide PMU network in parallel will provide the best platform for integrating the PMUs to improve its situational awareness and better allow for actions to be taken to guard against future disturbances.

3. Intermittent Renewable Energy Resources

The Project is expected to meet longer-term reliability challenges for at least the next twenty years. As greater amounts of renewable resources and related technologies are brought online in New York[19] and elsewhere, today's technology for managing such resources and related storage and grid management devices may not be adequate. Specifically, reliability concerns may arise from infrequent and largely unpredictable wind plant ramp events that must be managed. Such wind plant ramp events may occur during sudden drops in wind speeds or when wind speeds approach cut-out levels that can also cause sudden large drops in wind generation output levels. As greater amounts of renewable resources are integrated, NYISO may need improved tools to manage wind ramp events, including the ability to receive and process real-time data regarding wind speed and direction, requiring state-of-the-art monitoring capability using enhanced visualization displays and further enhancements to its current wind forecasting capabilities. In addition, new limited energy storage technologies are being developed, such as flywheel and large scale battery technologies, to compliment the variable output of renewable resources.

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[18] The Task Force estimated the total cost in the United States of the August 14, 2003 blackout was between $4 billion and $10 billion. *See* Id., Final Report at 1.

[19] There are currently approximately 7,000 MW of wind projects in the NYISO's interconnection queue.

Moreover, considerable research is being applied to the problems of coordinated management of intermittent resources and storage, which may lead to future automation in the control of these resources. As the level of intermittent energy resources, such as wind and solar, increases, the NYISO may need additional operations staff at its control centers to reliably and efficiently manage these technologies. The Project will provide the infrastructure resources the NYISO needs to enhance situational awareness and forecasting capabilities, as well as the physical space needed to accommodate additional control center staff and equipment to manage the increased amounts of wind and other intermittent resources.

Another related area of concern is the anticipated impact to New York State's daily load profile resulting from a high penetration of Plug in Hybrid Electric Vehicles ("PHEVs"). It is likely that technologies to manage PHEVs' charging demand and other demand response will be developed to maintain reliability. The Project will provide situational awareness to enhance monitoring capabilities in order to manage PHEVs, and the physical space to add additional control center staffing, if and when required.

4. <u>NERC Requirements</u>.

The mandatory North American Electric Reliability Corporation ("NERC") and other reliability standards that apply to the NYISO will continue to evolve and place additional requirements on the operation of the bulk electric system and wholesale markets. The FERC has directed NERC to update and revise its standards in multiple respects. The NYISO control centers must contain sufficient physical space and flexibility to incorporate new control center technologies and additional staffing to enable the NYISO to maintain compliance with evolving reliability requirements. Most significantly, on November 18, 2010, FERC directed NERC to

expand the definition of Bulk Electric System facilities to apply to all New York State transmission facilities 100 kV and above, excluding radial lines and distribution facilities.[20]

FERC has directed NERC to file the revised definition of Bulk Electric System facilities in one year, and allowed for a transition plan of up to 18 months. If NERC adopts the 100 kV standard for the Bulk Electric System definition, then the NYISO will require at least one additional control center position to comply with the expanded reliability oversight responsibilities for the transmission facilities 100 kV and above. Accordingly, the NYISO will need to be prepared to carry out additional operational, oversight and reliability coordination approximately 30 months from FERC's November, 2010 order (mid-2013). Completion of the Project will provide sufficient physical space to accommodate the required additional future operator positions to the NYISO control center if and when NERC elects to implement the new Bulk Electric System definition.

B. Specific Facilities Requirements to Meet Expanded Responsibilities

The Affidavit of Rick Gonzales, Senior Vice President and Chief Operating Officer of the NYISO, attached hereto as Attachment IX supports the following discussion. The NYISO will need to accommodate the following capabilities in its control centers to implement the enhanced operational and reliability responsibilities described above:

- Enhanced situational awareness by including additional visualization technologies in its control centers; and

[20] *Revision to Electric Reliability Organization Definition of Bulk Electric System*, Final Rule, Order No. 743 FERC Stats. & Regs. 133 FR 61150 (Nov. 18, 2010).

- Accommodate additional control room operations positions to manage related monitoring and coordination functions.

1. Enhancing Situational Awareness.

The NYISO's control centers will require improvements in visualization capabilities in the areas of:

- Broader Regional Markets initiatives.

- PMU data and the results of the related applications.

The NYISO will enhance operators' situational awareness via advanced video display technology and a significant dedicated area of video wall displays, which requires space and new technology in both of the NYISO's control centers. The report on the August 2003 blackout[21] pointed to a lack of situational awareness by utility operators as a key element in the events leading to the blackout. While the report does not recommend or require large format video displays as a remedy for this problem, most of the industry's efforts in developing advanced visualization tools have focused on video presentations, both small format (on the operators' desks) and large format (video walls).[22]

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[21] *U.S. Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* (April 2004).

[22] For examples of recent investigations, see: http://www.oe.energy.gov/our_organization/rnd.htm; http://www.pnl.gov/main/publications/external/technical_reports/PNNL-19103.pdf; http://www.wrldc.com/docs/VHPSO_FINAL.pdf.

2. Additions to the Control Room and Operations Staff.

The NYISO will also need to augment control room staff to manage its expanded operational and reliability responsibilities. The NYISO has identified, and planned for, the inclusion of the following additional control room staff responsibilities:

- The Broader Regional Markets initiatives will add new workload to:
    - Establish and validate transaction schedules with each of the NYISO's four neighboring control areas as often as every five or fifteen minutes, rather than on an hourly basis as is currently done.
    - Market-to-Market coordination requires coordinating and validating redispatch action for, and from, neighboring control areas to ensure efficient resource utilization and satisfaction of reliability criteria.
    - Buy-Through of Congestion requires active monitoring for, and identification of, parallel flow impacts on NYISO constrained facilities to minimize unrecovered constraint management costs.
    - The NYISO will have to add at least one additional control room staff position to implement the intra-hour transaction scheduling requirement of the Broader Regional Market initiatives.
- The development of Smart Grid Technologies is accelerating and the integration of these technologies into the grid is increasing. Control centers must be equipped to manage reliability concerns identified by PMUs and other Smart Grid Technologies. It is possible

that, within the expected lifetime of the Project, one or more new control center positions for the management of Smart Grid and renewable resources will be required.

- Depending on NERC's response to the FERC order to expand the definition of Bulk Electric System facilities, the NYISO may be required to add one additional transmission operator position in the control room to carry out additional operational and oversight responsibilities with respect to lower voltage transmission systems.

The NYISO control centers should also contain sufficient space to accommodate an adequate staffing level necessary during events where the primary facilities are compromised or unavailable. The additional staff positions (as described above) will further exacerbate existing space limitations. Lack of adequate space at the alternate control center during a contingency event presents an unacceptable risk to reliability and to business continuity. Facility accommodations must provide for sufficient space for personnel at both the primary and alternate control center. The Project will provide sufficient space at both locations in order to maintain continued and uninterrupted reliability and market operations during a contingency event.

In defining the scope and design for the Project, the NYISO carefully considered its current business requirements as well as reasonable expectations for future expansion and growth. While the NYISO currently expects that the scope of the Project will satisfy business requirements for the foreseeable future, certain design considerations were incorporated that could allow reasonable expansions should unforeseen changes to the NYISO business model or responsibilities occur in the future. Design considerations included allowances for future additional operator positions, site design that could accommodate future incremental building

additions, and interior design that could accommodate office reconfiguration for additional seating. It is not expected that these future expansions will be required, but the flexibility of the design will permit future expansion at a reasonable cost should requirements dictate.

C. Deficiencies at Existing Facilities

After identifying the expanded responsibilities facing the NYISO and determining what will be required to meet those responsibilities, the NYISO spent considerable time assessing its current facilities to determine their suitability to meet these changing requirements, any deficiencies that need to be addressed, and to what extent the facilities can be modified or expanded, without significant new construction. The following is a summary of that assessment divided between the three key facilities: (1) the current primary control center at the Carman Property, (2) the alternate control center and additional facilities at the Krey Property, and (3) the data center at the Carman Property. The Affidavit of Richard Dewey, Senior Vice President and Chief Information Officer of the NYISO, attached hereto as Attachment X supports the following discussion.

1. Current Primary Control Center.

The facility at the Carman Property was purpose-built as a control center in 1969 by the predecessor of the NYISO – the New York Power Pool – which used the building for offices and a control center from that date. It is the oldest of the North American ISO and RTO control centers.

The layout and construction of the Carman Property control center presents challenges to the continued reliable and efficient operation of the New York State electric grid. The

deficiencies that should be remedied in the near future to ensure continued reliable operations in light of the NYISO's expanded responsibilities can be grouped as follows:

- Control center layout.
- Infrastructure deficiencies.
- Future expansion requirements.

Layout

While the NYISO and the New York Power Pool have maintained and renovated the control center over its life, there are several problems with the current layout and infrastructure that cannot be resolved without major construction.

Installation of video display walls and related improvements will require a general reconfiguration of the control center to maximize visibility and improve situational awareness for control center operators. While the existing tile mapboard has certain advantages, most ISO control centers have implemented video display walls in place of or supplemental to mapboards. The set of data presented on a video wall and the form of presentation can be changed moment-to-moment and the technology allows for the rapid deployment of new presentations of data. These capabilities will help realize the full value of the Broader Regional Markets initiatives, and Smart Grid technologies, and will assist with the integration of renewable resources. Large format video displays also allow for improved situational awareness for all control center operator positions. This will provide a significant advantage if the control center's operator complement is increased, and, therefore, the distance from the furthest operator to the wall displays lengthens.

Infrastructure

The Carman Property control center currently supports reliable and efficient electric grid operations. However, as a result of the facility's age, there are problems that need to be addressed in the near future to ensure continued reliable operations including the following:

- The existing 600 kW emergency generators are over 30 years old and are nearing end of life. Two new 1500 kW generators have been purchased as replacements. Before the new generators can be installed, there will have to be a substantial reconfiguration of the building power distribution system. Reconfiguration of the building power system will replace much of the electric switchgear that connects the emergency generators to the building.

- The existing power distribution and UPS equipment are protected by manual fire extinguishers, and the area is not suitable for the installation of a gas-based fire suppression system. An automated fire suppression system is highly desirable as fires have proven to be one of the most probable risks to control centers. This could reasonably be accomplished during the installation of new generators and switchgear.

- The in-ground diesel fuel tanks for the emergency generators are nearing end of life and will need replacement to mitigate the risk of fuel leakage.

- The building roof is nearing end of life and must be replaced to prevent further deterioration and possible equipment damage due to water leaks.

- Many of the pumps, switchgear components, and mechanical systems are original to the building and nearing end of life. These systems will need to be replaced or rebuilt to maintain reliable operations.

Future Expansion

The existing Carman Property and Krey Property control centers meet current reliability needs. However, in the near future both control centers will need to be expanded to support the NYISO's expanded responsibilities. Given that it is reasonable to expect that additional operating positions may be needed beyond those now planned, any renovation of the control centers should include space for additional operator positions beyond what has been identified. The Carman Property control center is large enough to accommodate the minimum number of additional operator position consoles, but will require construction to incorporate further operator position consoles, particularly in conjunction with the redevelopment of the existing wallboard with video technology. If the NYISO were to renovate the Carman Property as the primary control center, construction could take 24 to 36 months.[23] The NYISO would need to operate from the Krey Property alternate control center for some of the construction time. As discussed below, the Krey Property control center is not presently suitable for long-term operation.

2. Krey Property Control Center.

In 2005, NYISO purchased the Krey Property to consolidate the majority of its staff into a single location. As part of the renovations to the building, a new data center and a new alternate control center were constructed within the building. The relocation of the alternate

[23] KEMA Report, page 4-4.

control center was primarily driven by the NYISO's need to resolve certain security risks regarding the location of the then-existing alternate control center that had been identified by several security studies by U.S. agencies and the NYISO's internal audit staff.[24]

The control center at the Krey Property currently provides a reliable alternate control center for the NYISO's existing responsibilities, as required by NERC. However, the layout and construction of the control center present potential challenges to continued reliable and efficient operation of the New York State electric grid. The deficiencies that must be remedied in the near future to maintain continued reliable operations in light of the NYISO's expanding responsibilities can be grouped as follows:

- Control center layout.
- Infrastructure deficiencies.
- Future expansion requirements.

Layout

While the Carman Property has adequate space within the control center security zone, the Krey Property control center space is very limited. If the NYISO is to operate from the Krey Property control center for more than a few days, arrangements must be made to move personnel normally occupying the offices surrounding the alternate control center to make room for the required operations support personnel from the primary control center. If the Carman Property is unusable for more than a few weeks, approximately 75 employees would need to move to the

[24] KEMA Report, page 5-1.

Krey Property. Business continuity plans provide for temporary relocation, but, over time, efficiency of operations will suffer if the relocation of staff is required for a longer period of time. These 75 employees do not include approximately 10 management and administrative staff who would also be relocated if operations were to move to the Krey Property for more than a few days.

The Krey Property control center video display wall is a two-high by twelve-wide matrix of projection cubes, installed into the front wall of the control room. This display area of 512 square feet is less than 25% of the Carman Property control center wallboard size (2090 square feet). The two-high column of projectors on the left side of the wall is used to display chart recorder data, and the remaining screens show the transmission one-line diagrams. The Phase 1 telemetry data is presented in the chart recorder space, but the data feed at the Krey Property control center is not considered as reliable as it is dependent on equipment at the Carman Property control center. If the Carman Property control center is out of service, this data will not be available at the Krey Property control center.

The size of the video wall is limited by the length of the room and the low ceiling height. While this video display wall is adequate for the current level of operations, it will not be adequate for the expansion required to meet the NYISO's expanded responsibilities. This is particularly true when considering video display capabilities for enhanced situational awareness.

Infrastructure

If the Krey Property control center is to continue as a reliable alternate control center for even the near future, shortcomings of the power supply system need to be addressed. The Krey Property is fed from a single substation, and uses a single generator for non-critical load and

another single generator for critical loads. The supply to critical loads is configured for an additional generator that has not yet been installed. There are no provisions for sharing or transferring loads between the two generators or for selective load shedding.

The reliability of the Krey Property power supply is on the order of 97.5%, compared to 99.9% for the Carman Property.[25] This is acceptable for its current use as an alternate control center, but not acceptable if it is to be considered a viable primary control center.

Future Expansion

The Krey Property control center meets current reliability requirements. However, in the near future both control centers will need to be expanded, replaced, or renovated to support the expanded responsibilities identified above.

One additional control room console position could possibly be added in the Krey Property control center by eliminating some office space. However, the view of the video display from that console would be severely compromised with the acute angle to the screens, exacerbating an already marginal situation. Expansion of the room itself is limited by its placement within the building; it is bordered on three sides by fixed walls. The critical problem will be expanding the video display as needed to improve situational awareness. The ceiling height is limited by the ceiling structure, which cannot reasonably be altered. This severely limits the amount of data that can be shown on the video displays.

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[25] This comparison assumes the complete loss of utility power and reflect the industry norms for the difference between a single emergency generator and an 'N+1' configuration.

3. Carman Property Data Center.

The NYISO, and its predecessor, the New York Power Pool, have realized good value from the Carman Property Data Center. Over its forty-year life the Carman Property Data Center has been expanded, augmented, and renovated as needs and technology have changed. The Carman Property Data Center is not without problems. None of these problems in isolation is sufficient to necessitate replacing the center. However, considering the age of the building, and the risks to reliability and business continuity that are presented if the NYISO had to carry out its core functions and new responsibilities at its existing facilities for an extended period of time, the NYISO believes that a new data center is warranted and that construction should be completed as soon as possible.

The Carman Property Data Center is an inefficient design. The cost of this inefficiency is estimated to be $100,000 to $200,000 per year in excess energy costs that will be saved in a new data center.[26] While not enough to by itself justify a new facility, the savings over the lifetime of a new data center can offset some of the construction cost. The sooner these benefits could be realized, the greater the payback.

Also, the near-term plans for the NYISO's information technology infrastructure reinforce the need for a new data center. The NYISO refreshes its IT infrastructure over multi-year cycles, targeted at three years. Several significant projects now underway would benefit from installation directly into a new data center (as opposed to installation into the existing center and subsequent movement to a new center). Benefits would include reduced costs (labor

[26] See KEMA Report, page 6-1.

and shorter project cycles) by avoiding the work to relocate the new hardware from the existing center to the new center and reduced risk of outages for the same reason.

D. Alternatives and Why Proposed Project is Best Option

As described above, both the Carman Property control center and the Krey Property control center have shortcomings in their layout, infrastructure, and their capacity to accommodate the expected new functionality and additional operating staff required to implement the NYISO's expanded responsibilities. The most pressing issues are the space constraints at the Krey Property control center, the out-of-date wall displays at the Carman Property control center, the aging infrastructure at the Carman Property, and the need for a new Carman Property Data Center. The Affidavit of Richard Dewey, Senior Vice President and Chief Information Officer of the NYISO, attached hereto as Attachment X supports the following discussion.

The constraints imposed by the conditions of the facilities at the Carman Property and the Krey Property and the requirements for reliable operations limit the effective alternatives to the following:

- In accordance with industry best practices, the NYISO expects to conduct operations from a single control center (while the other center is planned out of service) for a limited time only (one day or less).

- The needed renovations at the Carman Property are extensive and, depending on the approach, the construction schedule could extend 24 to 36 months. During this construction time, the control center may not be available for operation as a primary or alternate control center for significant periods.

- The adequacy of the Krey Property control center to support operations over a long term will lessen over time as control room staffing increases. Current staff planning would at least reach, if not exceed, the design capacity of the Krey Property control center within the next calendar year.

- The Krey Property control center cannot be meaningfully expanded due to the building's design and construction.

These constraints would require development of an interim alternate control center during the necessary renovation of the Carman Property control center. Given the costs to establish an adequate facility and the fact that such a facility would be of limited long term value to the NYISO, this alternative is inadvisable. If a third control center must be developed during renovation of the Carman Property, it would be better to devote such efforts to a new primary control center.

With the above conclusions in mind, the NYISO analyzed, from a cost-benefit standpoint, the following two possible projects as viable means by which to meet the expanded responsibilities described above.

Alternative 1

This option includes the following:

- Renovate the Carman Road facility to house an expanded primary control center and new data center.

- Expand the Krey Property to house a renovated alternate control center.

- Update the Krey Property building infrastructure to support greater redundancy for commercial and emergency power.

- Provide low-tech temporary building options located at Krey Property for operations support staff when operating as control center for extended periods.

The Carman Property control center would be expanded to accommodate the additional operating positions necessary for the Broader Regional Markets initiative and other expanded responsibilities. However, expanding beyond those additional positions would involve significant brick and mortar modifications since the control room is built out to existing exterior walls.

The existing alternate control center at the Krey Property would be relocated to a new 15,000 square foot addition to the existing building. This addition would only house the control center and a new video wallboard similar to the primary control center. Future expansion of the alternate control center may not be viable since it would be built out to exterior walls.

This plan includes provision for housing the additional operations staff at the Krey Property at the Krey Property in temporary trailers for extended operation.

The plan would accommodate the need for increased situational awareness and smart grid functions on the video wallboards.

The 2011-2013 cost estimate for this alternative is $56,200,000.[27] This alternative would achieve approximately $150,000 in energy savings per year once the Carman Property data center commences operation and the old data center is retired.[28]

Alternative 2

This option includes the following:

- New addition at the Krey Property site to house an expanded primary control center and office space for operations support staff.
- Update the Krey Property infrastructure to support greater redundancy for commercial and emergency power
- Renovate the Carman Property facilities to house a new data center, upgrade the emergency generators, and remediate aging infrastructure.

The new Krey Property control center would be built initially for the additional operating positions that would address short term needs and accommodate potential long term needs, as envisioned by NYISO. Expansion beyond those additional positions would be possible since renovations would involve interior sheetrock walls rather than exterior building walls.

Under this alternative, the existing Carman Property control center would become the new alternate control center. The static mapboard would remain and additional large video

[27] This estimate excludes costs incurred in 2009 and 2010.

[28] EIG Report, page 14. Savings would begin in year 3 of the Project.

screens would be added around the side perimeters of the room for increased situational awareness. This site also has the ability to be renovated at a future time to replace the static mapboard with a video wallboard and to reposition the operator consoles to accommodate additional operators.

If the new alternate control center is required to be operational for extended periods (greater than two weeks), the operations support staff would be housed in existing office space, conference rooms and potentially the old data center area.

The 2011-2013 cost estimate for this alternative is $48,900,000.[29] This alternative would achieve approximately $150,000 in energy savings per year once the Carman Property data center begins operation and the old data center is retired.[30]

Under this alternative, the NYISO has also identified gains in internal operational efficiencies by consolidating NYISO functions on a single campus. These efficiencies are estimated to be approximately $700,000 per year beginning in year four of the Project. These savings result from full time equivalent employee reductions of a physical security shift ($200,000) and other staff ($500,000).

Cost Benefit Analysis Conclusions

Alternative 2 provides NYISO with the foundation, feasibility and infrastructure to support its current and expanded responsibilities. This option gives the NYISO flexibility in

[29] This estimate excludes costs incurred in 2009 and 2010.

[30] EIG Report, page 14. Savings would begin in year 3 of the Project.

present day operation and in the future in both the control centers. There is also no need for additional temporary facilities to be installed at the alternate control center, since existing offices, conference rooms and the old data center would be available to temporarily accommodate operations staff during a contingency event.

The analysis of Alternative 1 indicated that although this option would fulfill the NYISO's present day needs, it will not support future expansion due to limited space. Temporary office space to house the operation support staff would need to be installed at the Krey Property in the event that the primary control center becomes unavailable for use. Even though the trailers would only be installed on an as-needed basis, the NYISO would have to absorb the annual cost to keep them available on short notice. In addition, the Carman Property is limited in its utility because it is an aging facility that has been modified and adapted numerous times to meet the expanding needs of the NYISO.

The results from this analysis and findings shows that Alternative 2 is the most economic plan with net present cost of $40,500,000 as compared to $48,200,000 for Alternative 1 through 2021. Alternative 2 positions the NYISO to meet its expanded responsibilities for the future and provides options for the NYISO to accommodate future growth.

IV. The Proposed Construction Facility

The terms and conditions of the Proposed Construction Facility are outlined in the Commitment Letter and Term Sheet attached to and made part of this Petition as Attachment I. These terms and conditions will allow the NYISO to finance expenditures in connection with the Project over a 20-year term. The NYISO will recover the funds needed to pay the principal and interest of the Proposed Construction Facility through Rate Schedule 1 of its Open Access

Transmission Tariff and Rate Schedule 1 of its Market Administration and Control Area Services Tariff. The Affidavit of Mary McGarvey, Vice President and Chief Financial Officer of the NYISO, attached as Attachment XI hereto supports the following discussion.

The NYISO is mindful of the present economic climate and of the NYPSC's directives to jurisdictional companies to prioritize and, where possible, defer expenditures to mitigate financial impacts upon ratepayers. Nevertheless, it is unavoidable that the NYISO will immediately incur expenditures connected with its control centers in 2011 and beyond. Because of its 20-year term, the expenditures to be financed through the Proposed Construction Facility will more gradually be passed on to ratepayers than under other possible financing options. Given the immediate need to expend funds to ameliorate deficiencies at its facilities, the NYISO believes that the short-term rate impacts of the Proposed Construction Facility are consistent with the NYPSC's recent rulings.

Given the current economic climate, the NYISO has further arranged for the payments to consist of interest only for the first three years of the loan. Estimated amounts to be charged under Rate Schedule 1 over the next three years under the Proposed Construction Facility would be $100,000 for 2011, $1,000,000 for 2012, and $2,300,000 for 2013, representing less than 0.1%, 1%, and 1.5%, of the NYISO's Rate Schedule 1 budget for each respective year. These amounts would, in turn, be allocated among the NYISO's Market Participants according to Rate Schedule 1. Approximately 75% of these amounts are borne by load serving entities including the several public utilities subject to the Commission's retail rate jurisdiction, with the remainder to be paid by other stakeholders. The table attached hereto as Attachment XVI further describes the cost of the Proposed Construction Facility to ratepayers in the State of New York.

The Proposed Construction Facility, therefore, represents a way to gradually phase-in to rates expenditures the NYISO will be required to make to address the needs described herein at both the Carman Property and at the Krey Property.

The commercial terms and conditions set forth in the attached Commitment Letter (Attachment I) represent the terms that the NYISO and Berkshire Bank, National Association ("Berkshire") have agreed to and are representative of those available in the market for comparable loans. Berkshire is administrative agent for a syndicate of lending banks including, as of the date hereof, The Washington Trust Company and Pioneer Savings Bank, National Association (together with Berkshire, the "Lenders"). While the NYISO has not yet executed a definitive loan agreement with the Lenders, it has executed a Commitment Letter and anticipates closing on the Proposed Construction Facility on or before August 31, 2011. The NYISO expects that the material terms and conditions of the definitive loan agreement will be the same as or consistent with those set forth in the Commitment Letter.

From 2008 through 2010, the NYISO sought, evaluated and negotiated various financing options for the Project with numerous multi-national, regional, community and other financial institutions, most of which are headquartered or contain a significant banking presence within New York State.[31] When considering financing options to support the Project, the overwhelming majority of these potential lenders were either unwilling to provide any loan commitment or

[31] Throughout 2008 and 2009 the NYISO pursued financing options with numerous potential lenders. During 2010, the NYISO met with 14 potential lenders, many of whom had also expressed interest in 2008 or 2009.

limited their offers to a term no longer than five years. Given the estimated useful life of the Project renovations, financing the cost over five years is generally not appropriate.

Based on the NYISO's discussions with potential lending sources, it is apparent that, in addition to an increased level of risk aversion amongst lenders, the recent economic crisis has resulted in lenders demanding deposits as part of any loan commitments, maintaining the ability to reset loan pricing and/or deny loan extensions, and avoiding lengthy loan terms. Based on the results of the extensive negotiations mentioned above, the NYISO believes that the Proposed Construction Facility contains terms and conditions that, in their totality, are reasonable and competitive.

One of the most advantageous aspects of the Proposed Construction Facility is the length of the loan commitment period. When Berkshire extended the offer for the Proposed Construction Facility to the NYISO in November, 2010, they agreed to hold the loan commitment for a period of nearly ten months (until the August 31, 2011 proposed loan closing). This commitment timeframe allows the NYISO the necessary time to pursue required permits and approvals. Since market conditions and other factors can change significantly over time, it is unusual for financial institutions to extend a financing offer with a commitment period of this duration.

Another very favorable condition of the Proposed Construction Facility is the length of the loan term. During the NYISO's negotiations, the predominant loan term suggested by financial institutions was less than 20 years, which would have resulted in debt service repayment costs to Market Participants considerably higher than what is included in the Proposed Construction Facility. However, the 20-year period of the Proposed Construction

Facility (3-years' interest-only payments during construction, followed by 17 years of principal and interest payments) defers principal repayment until mid-2014 and permits the NYISO's current and future Market Participants to repay this financing over a period of time commensurate with the long-term investment in the Project.

As mentioned above, financial institutions have placed an increased focus on receiving deposits as part of extending loan offers, particularly in connection with large or multi-year transactions. The Proposed Construction Facility contains a requirement to place an amount equal to 10% of the total loan commitment (up to $4,500,000) in deposits with the Lenders. This level of depository requirement is considerably less than depository requirements in the majority of other financing options that the NYISO has recently considered.

As is common in most real estate financings, the Proposed Construction Facility requires that the Lenders receive a security interest as part of this long-term financing. The Lenders were willing to accept a security interest in the Carman Property, which avoids further encumbering the Krey Property. Additionally, most commercial mortgages require a security interest in assets equal to the amount of the financing. However, in this case, the security interest in the Carman Property is a fraction of the maximum principal amount of the Proposed Construction Facility.

The covenants required as part of the Proposed Construction Facility are expected to mirror those in the NYISO's existing financings, thereby not introducing any significant financial or operating restrictions and enabling the NYISO to maintain the same level of reporting and monitoring as is required by the NYISO's existing debt.

The Proposed Construction Facility also permits the NYISO to prepay the outstanding balance of the loan without penalty, as long as standard notice is provided to the Lenders. This

provides the NYISO the flexibility to consider potential alternatives to refinance this loan during its 20-year term, if economic conditions and the lending climate were to significantly change.

From a cost perspective, the fees associated with the Proposed Construction Facility are generally consistent with other lending offers considered by the NYISO in connection with the Project and with several of the NYISO's current credit facilities, including the 2010 Revolver and the 2011-2013 Budget Facility. The interest spread on the Proposed Construction Facility is also generally consistent with current market trends. Based on the one-month LIBOR rate as of December 1, 2010, the annual interest rate for the Proposed Construction Facility would be 3.51%.

The existing credit facilities previously authorized by the Commission are not available to finance the remaining portion of the Project over 2011, 2012 and 2013. The Revolver authorized by the Commission in Case No. 99-E-1176 and the Replacement Revolver authorized in Case No. 05-E-0503 both have expired. The Term Loan authorized in Case No. 99-E-1176, the 3-Year Term Note authorized in Case No. 01-E-1068, the 5-Year Term Note authorized in Case No. 02-E-1565, and the 2004-2006 Budget Facility authorized in Case No. 03-E-1770 have all been paid off and terminated. The draw period for the Mortgage and Renovations Facility authorized in Case No. 05-E-0270 expired in 2006. The 2010 Revolver authorized by the Commission in Case No. 10-E-0160 is intended solely as a cash flow management tool, to provide working capital to balance monthly receipts and remittances, and to provide liquidity to the NYISO administered markets. The 2007-2010 Budget Facility authorized by the Commission in Case No. 06-E-1245 is expected to be fully drawn by January 2011. Finally, the 2011-2013 Budget Facility is an unavailable resource because it is intended to finance strategic

initiatives budgeted for the years 2011, 2012, and 2013, including computer equipment and software upgrades.

V. Required Information

The information required to support a Petition for authorization to incur indebtedness pursuant to Section 69 of the NYPSL is specified in the Commission's regulations, including Parts 18 and 37 of Title 16 and Part 617 of Title 6 of the NYCRR. In compliance with those regulations, the NYISO states as follows:

Pursuant to 16 NYCRR, § 37.1

A. Financial Condition of the NYISO

As a not-for-profit corporation, the NYISO has not issued any capital stock or equity interests of any kind and, therefore, has not declared any dividends. The NYISO has not issued any bonds. Pursuant to Commission authorization granted in Case No. 05-E-0270, the NYISO executed a 20-year commercial mortgage on July 8, 2005, to fund the purchase of the Krey Property. HSBC Bank USA, National Association is the mortgagee.

As discussed above, the Commission has previously authorized ten credit facilities for the NYISO pursuant to Section 69 of the NYPSL: (i) the $50,000,000 Revolver authorized in Case No. 99-E-1176, (ii) the $54,000,000 Term Loan authorized in Case No. 99-E-1176, (iii) the $20,000,000 3-Year Term Note authorized in Case No. 01-E-1068, (iv) the $59,300,000 5-Year Term Note authorized in Case No. 02-E-1565, (v) the $100,000,000 2004-2006 Budget Facility authorized in Case No. 03-E-1770, (vi) the $25,000,000 Mortgage and Renovations Loan authorized in Case No. 05-E-0270, (vii) the $50,000,000 Replacement Revolver authorized in

Case No. 05-E-503, (viii) the $80,000,000 2007-2010 Budget Facility authorized in Case No. 06-E-1245, (ix) the $50,000,000 2010 Revolver authorized in Case No. 10-E-0160, and (x) the $75,000,000 2011-2013 Budget Facility authorized in Case No. 10-E-0160.

As of today, there are no amounts outstanding under the 2010 Revolver. The aggregate balance currently outstanding under the 2007-2010 Budget Facility (including borrowings which have been converted into term loans) is $40,766,667. There is currently $20,402,679 outstanding under the Mortgage and Renovations Loan. As of today, there are no amounts outstanding under the 2011-2013 Budget Facility.

The NYISO has no contingent assets or liabilities. Included with this Petition, as Attachment II hereto, is a table containing the amounts of interest accrued at each applicable rate of interest on the outstanding indebtedness of the NYISO for the most recent audited fiscal period ending December 31, 2009. The latest unaudited financial statements through September 30, 2010, are included in Attachment III hereto. Also included, as Attachment IV hereto, is a copy of the Annual Report of the NYISO for the year ended December 31, 2009, which includes detailed financial statements for the calendar years ending December 31, 2008, and December 31, 2009. *See* 16 NYCRR, §§ 37.1(a) and 18.1.

B. Book Cost of the NYISO's Utility Property

The value of the NYISO's property and equipment as of December 31, 2009, was $205,420,831. Such value represents the "original cost" of such property and equipment as defined in 16 NYCRR § 31.1(f). *See* 16 NYCRR, § 37.1(b).

C. No Amounts for a Franchise

The book value reported for the NYISO's property and equipment includes no amount for a franchise, consent, or any other right to operate as a public utility. *See* 16 NYCRR, § 37.1(c).

D. No Issuance of Stock

As a New York State not-for-profit corporation, Type B, the NYISO has not issued any stock or equity interests of any kind and does not propose in this Petition to do so now. *See* 16 NYCRR, § 37.1(d).

E. Amount of Proposed Indebtedness

As described above in Section III of this Petition, the NYISO proposes to execute the Proposed Construction Facility in the aggregate principal amount of up to $45,000,000. Once converted to a term loan, the Proposed Construction Facility will mature on or about August 31, 2031, assuming a closing date of August 31, 2011. Amounts outstanding under the Proposed Construction Facility will bear interest at a rate per annum equivalent to a one, three or six month LIBOR plus a margin of 325 basis points. The Proposed Construction Facility will be secured by a first lien mortgage (and related Uniform Commercial Code filings, if any) on the Carman Property. *See* 16 NYCRR, § 37.1(e).

F. Purpose of the Proposed Construction Facility

As described above in Section II of this Petition, the NYISO proposes to use the funds from the Proposed Construction Facility for: (i) construction of an addition at the Krey Property to house a new primary power control center, (ii) construction of an addition at the Carman Property to serve as a new data center, (iii) upgrades and improvements to the control center at

the Carman Property to serve as the new alternate control center, and (iv) additional upgrades at both the Krey Property and the Carman Property to rectify specific deficiencies and implement certain technology improvements. *See* 16 NYCRR, § 37.1(f).

G. Other Funds Available For Stated Purpose

As described above in Section IV of this Petition, the 2010 Revolver is intended solely as a cash flow management tool, to provide working capital to balance monthly receipts and remittances, and to provide liquidity to the NYISO administered markets and therefore is not an available source of funding for the Project. The Term Loan authorized in Case No. 99-E-1176, the 3-Year Term Note authorized in Case No. 01-E-1068, the 5-Year Term Note authorized in Case No. 02-E-1565, and the 2004-2006 Budget Facility authorized in Case No. 03-E-1770 have all been paid off and terminated. The Mortgage and Renovations Loan is an unavailable resource because the draw period expired in 2006. The 2007-2010 Budget Facility is an unavailable resource because it is expected to be fully drawn by January 2011. Finally, the 2011-2013 Budget Facility is an unavailable resource because it is intended to finance strategic initiatives budgeted for the years 2011, 2012, and 2013, including computer equipment and software upgrades. *See* 16 NYCRR, § 37.1(g).

H. Finalized Loan Agreement

The commercial terms and conditions set forth in the attached Commitment Letter represent the terms that the NYISO and Berkshire have agreed to and are representative of those currently available in the commercial loan market. While the NYISO has not yet executed a definitive loan agreement with the Lenders, it anticipates closing the Proposed Construction Facility on or before August 31, 2011. The NYISO expects that the material terms and conditions of the final loan agreement will be the same as or consistent with those set forth in the

Commitment Letter, and requests authorization for the Proposed Construction Facility on the basis of those described terms and conditions. *See* 16 NYCRR, § 37.1(h).

I. Estimated Costs and Expenses of the Proposed Construction Facility

Because the NYISO has not yet executed a definitive loan agreement with the Lenders, the NYISO does not know what the exact costs and expenses of the Proposed Construction Facility will be. However, the attached Commitment Letter contains a cap on the expenses incurred by the Lenders that the NYISO would be obliged to reimburse. The NYISO believes that the borrowing rates, margins and commitment fees outlined in the Commitment Letter are competitive, and the NYISO anticipates that such terms will be the same as or materially consistent with those set forth in the attached Commitment Letter. The NYISO anticipates that any other costs and expenses associated with the Proposed Construction Facility will be similar to those associated with comparable credit facilities offered by other lenders and, therefore, will be commercially reasonable. *See* 16 NYCRR, § 37.1(i).

J. Mortgage or Other Security Agreement

The NYISO and the Lenders have not executed the Carman Mortgage, but plan to do so at closing of the Proposed Construction Facility. Promptly upon execution, the NYISO will file a certified copy of the Carman Mortgage with the Commission. *See* 16 NYCRR, § 37.1(j).

K. No Planned Merger or Consolidation

The NYISO has no plans to merge or consolidate with another organization. *See* 16 NYCRR, § 37.1(k).

L. Stockholders Consent to Proposed Construction Facility

The NYISO has no stockholders, but has obtained consent of its Management Committee and Board of Directors. *See* 16 NYCRR, § 37.1(l).

M. No Other Required Approvals

Based on the terms and conditions of the Proposed Construction Facility, no authorization or approval is required from any other public authority. *See* 16 NYCRR § 37.1(m). The NYISO is regulated by the Federal Energy Regulatory Commission, but that federal agency need not approve a financing authorized under Section 69 of the NYPSL. *See* 16 NYCRR, § 37.1; *and see* 16 U.S.C. § 824(f).

N. No Capitalization of Any Franchise

The NYISO is not proposing to capitalize any franchise in connection with the Proposed Construction Facility. *See* 16 NYCRR, § 37.1(n).

O. Affidavit of Principal Accounting Officer

The affidavit of Mary McGarvey, Vice President and Chief Financial Officer of the NYISO and its principal accounting officer, is attached as Attachment V hereto, attesting that, among other things, the NYISO is in compliance with all applicable accounting standards. *See* 16 NYCRR, § 37.1(o).

Pursuant to 16 NYCRR, § 37.3

P. General Work Description and Estimated Cost

The Project involves construction activities at two NYISO sites: the Carman Property and the Krey Property, as follows:

(i) Construction at the Carman Property entailing modifications to the existing structure in order to make the facility suitable to serve as an alternate power control center. Specific activities include building an addition to serve as a data center, replacement of many aging components of the mechanical and electrical systems, replacement of the roof and other repairs that are required to assure that the building functions reliably. The estimated Project costs for work remaining at the Carman Property are approximately $13,400,000.

(ii) Site improvements at the Krey Property include modifications to the existing structure in order to make the facility suitable to act as a primary control center. Specific activities include building an addition to serve as a control center, as well as adjacent offices needed to support the NYISO operations staff, replacing emergency backup generators and adding a second power feed to the property. Construction will also include enhancements to the electric power service for both commercial power and emergency power. The estimated Project costs for work remaining at the Krey Property are approximately $35,500,000.

See 16 NYCRR, § 37.3(a).

Q. <u>Construction Work Agreement</u>

Attached hereto as Attachment XV is a copy of the Construction Management Agreement entered into between the NYISO and U.W. Marx, Inc. for management of the Project. *See* 16 NYCRR, § 37.3(b).

R. Retired Property

The NYISO is not retiring any property owned by it as part of this proposal. *See* 16 NYCRR, § 37.3(c).

S. Affidavit of Principal Accounting Officer

The affidavit of Mary McGarvey, Vice President and Chief Financial Officer of the NYISO and its principal accounting officer, is attached as Attachment VI, attesting that no part of the cost of the work proposed to be financed through the Proposed Construction Facility is in whole or in part reasonably chargeable to operating expenses or income. *See* 16 NYCRR, § 37.3(d).

Pursuant to 6 NYCRR, § 617

T. State Environmental Quality Review Act

Before authorizing the Proposed Construction Facility, the Commission must ensure that the provisions of the State Environmental Quality Review Act and its implementing regulations (collectively referred to as "SEQRA") have been complied with. As outlined in more detail below, compliance with SEQRA has been completed for both the Krey Property and the Carman Property in connection with the Project.

The Town of East Greenbush Town Board (the "Town Board") acted as the SEQRA Lead Agency for the Krey Property and conducted a coordinated environmental review with all involved and interested agencies. The Commission was an Involved Agency under SEQRA and reviewed the project plans and related documents as part of the SEQRA process. Following a review of comments received from other State and local agencies including the New York State Department of Environmental Conservation, the New York State Department of

Transportation, the Rensselaer County Planning Board, and the Town of North Greenbush, and consideration of the Project's potential environment impacts, on March 10, 2010, the Town Board unanimously adopted a detailed Negative Declaration under SEQRA finding that NYISO's proposed project at the Krey Property would not have a significant adverse impact on the environment and that a draft environmental impact statement would not be prepared. A copy of the Town Board's Negative Declaration is attached hereto as Attachment VII.

The Town of Guilderland Zoning Board of Appeals (the "ZBA") acted as the SEQRA lead agency for the Carman Property and conducted a coordinated environmental review with all involved and interested agencies. The Commission was an involved agency under SEQRA and reviewed the project plans and related documents as part of the SEQRA process. Following a review of comments received from other State and local agencies including the New York State Department of Transportation, and the Albany County Planning Board, and consideration of the Project's potential environment impacts, on March 17, 2010, the ZBA unanimously adopted a detailed Negative Declaration under SEQRA finding that NYISO's proposed project at the Carman Property would not have a significant adverse impact on the environment and that a draft environmental impact statement would not be prepared. A copy of the ZBA's Negative Declaration is attached hereto as Attachment VII.

Copies of the Negative Declarations were sent to the Commission on March 31, 2010. Pursuant the SEQRA regulations, receipt of the Negative Declarations ends the SEQRA process and is binding on the Commission and all other involved agencies. As a result, no future SEQRA compliance is necessary in connection with this Petition. *See* 6 NYCRR, § 617.3(a); *and see* 6 NYCRR, § 617.6(b).

VI. The Proposed Financing Is In the Public Interest

Completion of the Project will allow the NYISO to fulfill its core mission of maintaining reliable and efficient operation of the bulk power system that provides electric service to the ratepayers of New York State by replacing its 40-year old power control center with a new power control center at the Krey Property, construction of a new data center at the Carman Property, and renovation of the existing control center located at the Carman Property to serve as a new alternate control center. The new facilities will have the controls, displays, communications equipment, computing facilities, and other improvements to enhance situational awareness. The Project will also allow the NYISO facilities to properly accommodate additional operations staff.

Specifically, the Project is required to meet the combination of the NYISO's existing operations and markets functions together with several new responsibilities assigned or expected to be assigned to the NYISO by the FERC, the DOE and the NYPSC. These are: (i) the implementation of Broader Regional Markets, (ii) introduction of Smart Grid Technologies, (iii) incorporation of intermittent renewable resources, and (iv) new operational responsibilities for transmission facilities 100 kV and above in accordance with potential NERC reliability standards. Each of these new responsibilities is or will be required and will result in significant reliability and efficiency benefits to New York State ratepayers, including substantial cost savings. Undertaking these new responsibilities in addition to the NYISO's existing core reliability and market operations functions without completion of the Project would create risks to electric system reliability and market integrity that are unacceptable. Completion of the

Project will also result in annual cost savings to the NYISO from energy savings and other efficiencies estimated to be approximately $850,000.[32] Accordingly, by a greater than 80% majority vote the NYISO's stakeholders supported the Project and proceeding with the necessary financing, and the NYISO's Board of Directors voted unanimously in support as well.

As the pace of technological innovation accelerates, and the tools for reliable and efficient operation of wholesale electric markets and bulk power systems become more sophisticated, the importance of maintaining a modern power control center continues to grow. This reality has been recognized across the country. New power control centers have been built in the last five years by the California ISO, the Electric Reliability Council of Texas, PJM Interconnection, ISO New England, and Midwest ISO. Each of these projects was initiated to provide updated technology so power control centers can most effectively manage the power grid, as well as to position control centers to take advantage of emerging advanced technologies, such as Smart Grid. The NYISO has the oldest control center of all of the ISOs and RTOs in the country. Without a significant enhancement having been made to the NYISO primary control center in 40 years, these upgrades are necessary and may soon become overdue.

The NYISO respectfully submits that completion of the Project is in the public interest and the Proposed Construction Facility is the best method by which to finance the remainder of

[32] These savings consist of (i) approximately $150,000 in energy savings per year once the Carman Property data center begins operation and the old data center is retired, and (ii) internal operational efficiencies gained by consolidating NYISO functions on a single campus estimated to be approximately $700,000 per year beginning in year four of the Project.

the Project. The NYISO further submits that the terms of the Proposed Construction Facility are reasonable and competitive.

VII. Supporting Attachments

In support of this Petition, the NYISO submits the following Attachments:

Attachment	Description
I.	Commitment Letter and Term Sheet
II.	Accrued Interest on Outstanding Indebtedness
III.	Most Recent Unaudited Financial Statements
IV.	Most Recent Annual Report including Most Recent Audited Financial Statements
V.	Affidavit: 16 NYCRR Section 37.1(o)
VI.	Affidavit: 16 NYCRR Section 37.3(d)
VII.	Negative Declarations of East Greenbush and Guilderland
VIII.	Certificate of Incorporation
IX.	Affidavit of Rick Gonzales, Senior Vice President and Chief Operating Officer of the NYISO
X.	Affidavit of Richard Dewey, Senior Vice President and Chief Information Officer of the NYISO
XI.	Affidavit of Mary McGarvey, Vice President and Chief Financial Officer of the NYISO
XII.	Affidavit of David B. Patton (Potomac Report)
XIII.	Affidavit of Ralph Masiello (KEMA Report)
XIV.	Affidavit of Francis J. Flynn (EIG Report)
XV.	Construction Agreement
XVI.	Table of Costs to Ratepayers

WHEREFORE, for the reasons set forth herein, the NYISO respectfully requests that the Commission issue an Order by March 31, 2011 authorizing the NYISO to enter into the Proposed Construction Facility and take such other actions in connection therewith as described herein; and grant such other and further relief to which the NYISO may be entitled.

Respectfully submitted,

THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

By: Robert E. Fernandez

Robert E. Fernandez
General Counsel

Carl F. Patka
Assistant General Counsel

10 Krey Boulevard
Rensselaer, New York 12144
(518) 356-7504

Dated: December 21, 2010

Attachment I.

Commitment Letter and Term Sheet

BERKSHIRE BANK
America's Most Exciting Bank℠

December 10, 2010

The New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, New York 12144

Re: $45,000,000 Mortgage Loan Credit Facility

Ladies and Gentlemen:

Berkshire Bank ("Berkshire") is pleased to offer to be the sole and exclusive administrative agent (in such capacity, the "Administrative Agent") for an up to $45,000,000 mortgage loan facility (the "Mortgage Facility") to The New York Independent System Operator, Inc. ("you" or the "Borrower"), and Berkshire is also pleased to offer its commitment to lend $21,000,000 of the aggregate principal amount of the Mortgage Facility, upon and subject to the terms and conditions of this letter and the Summary of Terms and Conditions attached hereto (the "Summary of Terms", and collectively with this letter, the "Commitment Letter"). Berkshire is also willing to act as sole and exclusive arranger ("Arranger") for the Mortgage Facility, and to use its best efforts to form a syndicate of financial institutions including Berkshire (collectively, the "Lenders") reasonably acceptable to you for the Mortgage Facility.

The commitment of Berkshire hereunder and the undertaking of Berkshire to provide the services described herein are subject to the satisfaction of each of the following conditions precedent in a manner acceptable to Berkshire: (a) the completion of confirmatory business and legal due diligence; (b) the accuracy and completeness of all representations that you make to Berkshire; (c) your compliance in all material respects with the terms of this Commitment Letter and the Fee Letter (as hereinafter defined); (d) prior to and during the syndication of the Mortgage Facility there shall be no competing offering, placement or arrangement of any debt securities or bank financing by or on behalf of the Borrower to finance the Project (as defined in the Summary of Terms) or otherwise in connection with the Purpose (as defined in the Summary of Terms), (e) the negotiation, execution and delivery of definitive documentation for the Mortgage Facility consistent with the Summary of Terms and otherwise satisfactory to Berkshire in its reasonable discretion; (f) no material adverse change in or material disruption of conditions in the market for syndicated bank credit facilities or the financial, banking or capital markets generally shall have occurred that, in the judgment of Berkshire, would impair the syndication of the Mortgage Facility; (g) no change, occurrence or development that shall have occurred or become known to Berkshire since December 31, 2009 that could reasonably be expected to have a material adverse effect on the business, assets, liabilities (actual or contingent), operations, condition (financial or otherwise) or prospects of the Borrower and which is, in Berkshire's reasonable judgment, materially adverse to the interests of the Lenders in connection with the Mortgage Facility; and (h) commitments shall have been received from other Lenders for the remaining $24,000,000 of the Mortgage Facility on the terms and conditions referred to herein and in the Summary of Terms.

Berkshire intends to complete syndication efforts promptly upon your acceptance of this Commitment Letter and the Fee Letter (as hereinafter defined). You agree to actively assist Berkshire in completing a satisfactory syndication of the Mortgage Facility. Such assistance shall include (a) your providing Berkshire and the other Lenders upon request, consistent with the requirements and limitations of Borrower's governing tariffs, with all information reasonably deemed necessary by Berkshire to complete syndication; and (b) otherwise assisting Berkshire in its syndication efforts, including by making your senior management and advisors available from time to time.

It is understood and agreed that Berkshire will manage and control all aspects of the syndication in consultation with you, including decisions as to the selection of prospective Lenders and any titles offered to proposed Lenders, when commitments will be accepted and the final allocations of the commitments among the Lenders; provided that no Lender shall be selected without the prior written consent of the Borrower, which consent shall not be unreasonably withheld. It is understood that no other Lender participating in the Mortgage Facility will receive compensation from you in order to obtain its commitment, except on the terms contained herein and in the Summary of Terms.

You hereby represent, warrant and covenant that (a) all information, other than Projections (defined below), which has been or is hereafter made available to Berkshire or the Lenders by you or any of your authorized representatives (or on your or their behalf) in connection with the transactions contemplated hereby (the "Information") is and will be complete and correct in all material respects and does not and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements contained therein, taken as a whole, not materially misleading in light of the circumstances under which such statements are made, and (b) all financial projections concerning the Borrower and its subsidiaries that have been or are hereafter made available to Berkshire or the Lenders by you or any of your authorized representatives (the "Projections") have been or will be prepared in good faith based upon assumptions you believe to be reasonable at the time prepared (it being understood that Projections by their nature are subject to uncertainties outside of your control and that actual results may differ). You agree to furnish us with such Information and Projections as we may reasonably request, consistent with the requirements and limitations of your governing tariffs, and to supplement the Information and the Projections from time to time until the Closing Date (as defined in the Summary of Terms) so that the representation, warranty and covenant in the preceding sentence is correct on the Closing Date. In issuing this commitment and in arranging and syndicating the Mortgage Facility, Berkshire is, and will be, using and relying on the Information and the Projections (subject to the qualifications set forth above) without independent verification thereof, and you hereby authorize Berkshire to make such Information and Projections available to the proposed syndicate of Lenders.

By executing this Commitment Letter, you agree to reimburse Berkshire from time to time on demand for all reasonable and documented third-party out-of-pocket fees and expenses incurred in connection with this Commitment Letter, the preparation of the definitive documentation therefor and the other transactions contemplated hereby, including, but not limited to, (a) the reasonable fees and disbursements of Phillips Lytle LLP, as counsel to the Arranger and the Administrative Agent; (b) the reasonable fees and expenses of counsel to the other Lenders up to $4,000 in the aggregate (the "Other Lenders' Expenses"); and (c) reasonable and documented due diligence expenses incurred in connection with the Mortgage Facility and the syndication thereof; provided, however, that the aggregate amount of all such expenses (excluding any

expenses for environmental reports on the Project Property but including the Other Lenders' Expenses) shall not exceed $40,000 unless approved by the Borrower, such approval not to be unreasonably withheld.

You agree to indemnify and hold harmless Berkshire, each Lender and each of their affiliates and their respective officers, directors, employees, agents, advisors and other representatives (each, an "Indemnified Party") from and against (and will reimburse each Indemnified Party as the same are incurred for) any and all actual claims, damages, losses, liabilities and expenses (including, without limitation, the reasonable fees, disbursements and other charges of counsel) that may be incurred by or asserted or awarded against any Indemnified Party, in each case arising out of or in connection with or by reason of (including, without limitation, in connection with any investigation, litigation or proceeding or preparation of a defense in connection therewith) (a) any matters contemplated by this Commitment Letter or (b) the Mortgage Facility or any use made or proposed to be made with the proceeds thereof, except to the extent such claim, damage, loss, liability or expense is found in a final, nonappealable judgment by a court of competent jurisdiction to have resulted from such Indemnified Party's gross negligence or willful misconduct. In the case of an investigation, litigation or proceeding to which the indemnity in this paragraph applies, such indemnity shall be effective whether or not such investigation, litigation or proceeding is brought by you, your equity holders or creditors or an Indemnified Party, whether or not an Indemnified Party is otherwise a party thereto and whether or not the transactions contemplated hereby are consummated. The parties also agree that neither any Indemnified Party nor the Borrower (including its officers, directors, employees, agents, advisors and other representatives) shall have any liability (whether direct or indirect, in contract or tort or otherwise) arising out of, related to or in connection with any aspect of the transactions contemplated hereby, except to the extent of direct, as opposed to special, indirect, consequential or punitive, damages determined in a final, nonappealable judgment by a court of competent jurisdiction. It is further agreed that Berkshire shall only have liability to you (as opposed to any other person), and that Berkshire shall be liable solely in respect of its own commitment to the Mortgage Facility on a several, and not joint, basis with any other Lender, and that such liability shall only arise to the extent damages have been caused by a breach of Berkshire's obligations hereunder to negotiate in good faith definitive documentation for the Mortgage Facility on the terms set forth herein, as determined in a final, nonappealable judgment by a court of competent jurisdiction.

Berkshire agrees to treat all Information and Projections delivered or made available during the due diligence process as confidential. Disclosure will be limited to any affiliates, employees, officers, attorneys and other advisors of Berkshire or a Lender or potential Lender who are or are expected to become engaged in evaluating, approving, structuring or administrating the Mortgage Facility or rendering legal advice in connection therewith; provided that nothing herein shall prevent Berkshire from disclosing such Information and Projections: (a) upon the order or request of any court or administrative or regulatory agency or authority; (b) to the extent that such Information or Projections have been publicly disclosed other than as the result of a disclosure by a Lender or its affiliates or representatives; or (c) otherwise as required by law.

This Commitment Letter and the fee letter between you and Berkshire of even date herewith (the "Fee Letter") and the contents hereof and thereof are confidential and, except for disclosure hereof or thereof on a confidential basis to your accountants, attorneys and other professional advisors retained by you in connection with the Mortgage Facility or as otherwise required by law, may not be disclosed in whole or in part to any person or entity without Berkshire's prior

written consent; provided, however, it is understood and agreed that you may disclose this Commitment Letter (including the Summary of Terms) and the Fee Letter after your acceptance of this Commitment Letter and the Fee Letter, in filings with any applicable regulatory authorities. Berkshire hereby notifies you that pursuant to the requirements of the USA PATRIOT Act, Title III of Pub. L. 107-56 (the "Act"), Berkshire is required to obtain, verify and record information that identifies you, which information includes your name and address and other information that will allow Berkshire to identify you in accordance with the Act.

In connection with all aspects of each transaction contemplated by this letter, you acknowledge and agree that (a) the Mortgage Facility and any related arranging or other services described in this letter is an arm's-length commercial transaction between you, on the one hand, and Berkshire, on the other hand, and you are capable of evaluating and understanding, and understand and accept, the terms, risks and conditions of the transactions contemplated by this letter; (b) in connection with the process leading to such transaction, Berkshire is and has been acting solely as a principal and is not the financial advisor, agent or fiduciary, for you or any of your creditors or employees or any other party; (c) Berkshire has not assumed and will not assume an advisory, agency or fiduciary responsibility in your favor with respect to any of the transactions contemplated hereby or the process leading thereto and Berkshire has no obligation to you with respect to the transactions contemplated hereby except those obligations expressly set forth in this letter; and (d) Berkshire has not provided any legal, accounting, regulatory or tax advice with respect to any of the transactions contemplated hereby and you have consulted your own legal, accounting, regulatory and tax advisors to the extent you have deemed appropriate.

The provisions of the immediately preceding six paragraphs shall remain in full force and effect regardless of whether any definitive documentation for the Mortgage Facility shall be executed and delivered, and notwithstanding the termination of this Commitment Letter. Notwithstanding anything contained herein to the contrary, your obligations and liabilities under this Commitment Letter, other than your obligation of confidentiality, to the extent superseded by the applicable provisions of the loan documentation pertaining to the Mortgage Facility shall automatically terminate at the time of the closing of and initial borrowing under the Mortgage Facility. This Commitment Letter and the Fee Letter may be executed in counterparts which, taken together, shall constitute an original. Delivery of an executed counterpart of this Commitment Letter or the Fee Letter by telecopier or facsimile shall be effective as delivery of a manually executed counterpart thereof.

This Commitment Letter and the Fee Letter shall be governed by, and construed in accordance with, the internal laws of the State of New York without resort to principles of conflicts of law. Each of you and Berkshire hereby irrevocably waives any and all right to trial by jury in any action, proceeding or counterclaim (whether based on contract, tort or otherwise) arising out of or relating to this Commitment Letter, the Fee Letter, the transactions contemplated hereby and thereby or the actions of Berkshire in the negotiation, performance or enforcement hereof. Other than the six paragraphs referenced above, the commitments and undertakings of Berkshire may be terminated, if you fail to perform your obligations under this Commitment Letter or the Fee Letter on a timely basis. Also, other than the six paragraphs referenced above, the commitments and undertakings of Berkshire and the Borrower shall terminate upon a final determination by the State of New York Public Service Commission rejecting the Borrower's petition for authority to enter into the Mortgage Facility, which the Borrower, in its reasonable judgment, elects not to appeal.

This Commitment Letter, together with the Summary of Terms and the Fee Letter, embodies the entire agreement and understanding among Berkshire and you with respect to the Mortgage Facility and supersedes our previous letters of October 29, 2010 and November 9, 2010, and all prior agreements and understandings relating to the specific matters hereof. However, please note that the terms and conditions of the commitment of Berkshire as a Lender and the undertaking of Berkshire as Arranger hereunder are not limited to those set forth herein or in the Summary of Terms. Those matters that are not covered or made clear herein or in the Summary of Terms or the Fee Letter are subject to mutual agreement of the parties. It is agreed that no party has been authorized by Berkshire or the Borrower to make any oral or written statements that are inconsistent with this Commitment Letter. This Commitment Letter is not assignable by the Borrower without Berkshire's prior written consent and is intended to be solely for the benefit of the parties hereto and the Indemnified Parties.

This offer will expire at 5:00 p.m. New York time on December 24, 2010 ("Acceptance Date") unless you execute this Commitment Letter and the Fee Letter and return them to us prior to that time, whereupon this Commitment Letter and the Fee Letter (each of which may be signed in one or more counterparts) shall become binding agreements. This offer will automatically terminate unless, at all times while this Commitment Letter is outstanding, you maintain with Berkshire and with any other Lenders which commit or have committed to Berkshire and the Borrower to participate in the Mortgage Facility syndicate (the "Syndicate") deposit accounts in an amount commensurate with such Lender's Pro-Rata Share (as defined below) of an aggregate total deposit equal to not less than five percent (5%) of the maximum principal amount of the Mortgage Facility (the "Compensating Deposit"), as consideration to Berkshire and the Lenders for issuing this Commitment Letter and participating in the Syndicate, respectively, and as a means of assisting Berkshire in its efforts to syndicate the Mortgage Facility. Thereafter, subject to any additional termination provisions herein, this undertaking and commitment will expire on August 31, 2011 unless definitive documentation for the Mortgage Facility is executed and delivered prior to such date. As used herein, "Pro-Rata Share" means for each Lender, the amount determined by multiplying the Compensating Deposit by the percentage that the commitment of such Lender represents of the $45,000,000 maximum principal amount of the Mortgage Facility. On or before the Acceptance Date, Berkshire will notify the Borrower of any such Lenders which have committed to participate in the Syndicate and confirm to the Borrower in writing the Pro-Rata Share of each such Lender. Berkshire agrees to notify the Borrower promptly if any such Lender's commitment expires, is cancelled or its Pro-Rata Share changes. Upon such notification, the Borrower may withdraw or modify its deposit with any such Lender accordingly. Subject to the preceding sentence, Borrower agrees that the Compensating Deposit shall be maintained with the Lenders until the earlier of the date on which (i) this Commitment Letter terminates, expires or is cancelled, or (ii) through the Closing Date (as defined in the Summary of Terms).

As further consideration for the time and resources that Berkshire will devote to the Mortgage Facility, you agree that, until such expiration, you will not solicit, initiate, entertain or permit, or enter into any discussions in respect of, any offering, placement or arrangement of any competing credit facility for the Borrower to finance the Project or otherwise in connection with the Purpose.

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SIGNATURE PAGE FOLLOWS]

We are pleased to have the opportunity to work with you in connection with this important financing.

Very truly yours,

BERKSHIRE BANK, as a Lender and and as the Arranger

By: Richard C. Van Auken

Richard C. Van Auken
First Vice President

ACCEPTED AND AGREED TO
AS OF DECEMBER 20, 2010

THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

By: Mary K. McGarvey

Mary K. McGarvey
Chief Financial Officer

SIGNATURE PAGE TO NYISO COMMITMENT LETTER

SUMMARY OF TERMS AND CONDITIONS
THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.
$45,000,000 MORTGAGE FACILITY

BORROWER:	The New York Independent System Operator, Inc.
ADMINSTRATIVE AGENT AND ARRANGER:	Berkshire Bank ("Berkshire") will act as sole and exclusive administrative agent (the "Administrative Agent") and will act as sole and exclusive arranger (the "Arranger").
LENDERS:	A syndicate of financial institutions (including Berkshire) arranged by Berkshire, which institutions shall be acceptable to the Borrower and the Administrative Agent (collectively, the "Lenders").
MORTGAGE FACILITY:	An aggregate principal amount of up to $45,000,000, of which Berkshire will lend $21,000,000, will be available upon the terms and conditions hereinafter set forth: A construction loan (the "Construction Loan") to be advanced in accordance with the terms hereof during the period from the Closing Date until the earlier of (i) the date on which construction of the Project (as defined below) is complete and the Construction Loan has been fully advanced, or (ii) the date which is 36 months from the Closing Date (the "Construction Loan Period"), with the principal balance thereof being converted to a permanent loan ("Permanent Loan") with a term commencing on the Conversion Date (as defined below) and ending on the date which is seventeen (17) years from the Conversion Date (the "Permanent Loan Period").
PAYMENTS:	Monthly interest only payments during the Construction Loan Period. Nearly equal monthly principal payments during the Permanent Loan Period based upon an amortization of seventeen (17) years with interest also payable monthly.
MATURITY:	The Construction Loan shall mature on the last day of the Construction Loan Period unless the Construction Loan has been converted to the Permanent Loan. If the Construction Loan is converted to the Permanent Loan, the entire unpaid balance of the Permanent Loan will be due and payable on the seventeenth (17th) anniversary of the Conversion Date.

PURPOSE: The proceeds of the Mortgage Facility shall be used to complete the following project (the "Project"): (i) for upgrades to Borrower's existing control room and construction of a new main control room and related improvements on real property leased by the Borrower and constituting a portion of the property commonly known as 10 Krey Boulevard, Rensselaer, New York 12144 (the "Krey Property"), and (ii) for improvements to Borrower's secondary control room and other improvements on real property owned by the Borrower and constituting a portion of the property commonly known as 3890 Carman Road, Schenectady, New York 12144 (the "Carman Property" and together with the Krey Property, the "Project Property").

CLOSING DATE: The execution of definitive loan and collateral documentation, including satisfactory legal opinions and other customary closing documents, (collectively, the "Loan Documentation") to occur on or before August 31, 2011 (the "Closing Date").

INTEREST RATE: Interest shall be determined for an interest period (each an "Interest Period") of one, three or six months, as selected by the Borrower, and shall be at an annual rate equal to LIBOR plus an applicable margin of 325 basis points. LIBOR means the London Interbank Offered Rate (adjusted for statutory reserve requirements) for the corresponding deposits of U.S. Dollars quoted by major banks in London and appearing on the applicable Reuters Screen for the corresponding deposits of U.S. Dollars or, if such source is unavailable, such other alternate source selected by the Administrative Agent to determine such rate on the day that is two London banking days prior to the start of each Interest Period. Interest on the Mortgage Facility shall be computed on a 360-day year and shall be payable monthly for the actual number of days elapsed, which will result in a higher effective annual rate. Additionally, the loan documents will contain customary and reasonable provisions related to increased costs, capital adequacy and yield protection, withholding and other taxes, and legality.

DEPOSITS: In consideration for the favorable interest rate being made available by the Lenders for the Mortgage Facility, Borrower agrees to maintain deposit accounts with each of the Lenders at all times while the Mortgage Facility is outstanding in an aggregate amount for all such accounts equal to not less than ten percent (10%) of the maximum principal amount of the Mortgage Facility on the Closing Date. For clarity, such deposit amounts shall include and not be in addition to any amounts already deposited by the Borrower with the Lenders as part of the Compensating Deposit required by the Commitment Letter for the Mortgage Facility issued by Berkshire to the Borrower.

DEFAULT RATE/ LATE PAYMENT CHANGE:

Upon the occurrence and during any continuance of any Event of Default, the applicable interest rate shall increase by 200 basis points. A late charge of 5% of any installment payment not received within ten (10) days of when due will be required.

PREPAYMENT:

A. Construction Loan. The Construction Loan may be prepaid in full or in part without premium at any time during the Construction Loan Period upon thirty (30) days prior written notice to the Administrative Agent and the Lenders.

B. Permanent Loan. Borrower may make prepayment in full or in part without premium on any payment date during the Permanent Loan Period after sixty (60) days prior written notice to the Administrative Agent and the Lenders.

However, if any portion of the Permanent Loan or Construction Loan is prepaid, whether after acceleration or otherwise, Borrower shall pay to the Administrative Agent for the account of the Lenders, on demand, an amount equal to (i) the interest which would have otherwise been payable to the Administrative Agent for the account of the Lenders on the amount prepaid during the remaining term of the Interest Period, less (ii) interest on the amount prepaid for such term computed at an interest rate equal to the yield-to-maturity which could be obtained on United States Treasury obligations purchased in the market at the time of prepayment, having a remaining term and coupon rate comparable to the remaining term of the Interest Period, and comparable to the applicable interest rate, as determined by the Administrative Agent in good faith, and certified to the Borrower, such certificate to be conclusive, absent manifest error.

CONVERSION TO PERMANENT LOAN TERM:

Conversion from the Construction Loan to the Permanent Loan shall occur on the Conversion Date (as defined below) if, prior to the Conversion Date, Borrower executes such documentation as the Administrative Agent reasonably requests and Borrower has provided evidence satisfactory to the Administrative Agent that (i) an unconditional Certificate of Occupancy has been issued for all improvements comprising the Project, and (ii) Borrower has satisfactorily performed in all material respects all of its obligations under the Loan Documentation respecting construction of the Project. The Administrative Agent shall have no obligation

to convert the Construction Loan to the Permanent Loan if there is an actual or potential default or event of default under the Loan Documentation. The "Conversion Date" shall be the date on which the Construction Loan is converted to the Permanent Loan which date shall be three (3) years from the Closing Date or such earlier date on which the Construction Loan is fully advanced upon completion of the Project.

COLLATERAL: First lien mortgage on the Carman Property in an amount not in excess of the current assessed value of such property plus the amount of any improvements to the Carman Property to be funded by the Mortgage Facility (the "Current Value").

COMMITMENT FEE: 3/8% of the maximum principal amount of the Mortgage Facility on the Closing Date with such fee being payable to the Administrative Agent for the account of the Lenders on the Closing Date.

CONDITIONS PRECEDENT TO CLOSING: The closing (and the initial funding) of the Mortgage Facility will be subject to satisfaction of the conditions precedent deemed appropriate by the Administrative Agent and the Lenders. The definitive agreement with respect to the Mortgage Facility shall contain customary and reasonable conditions precedent, including, but not limited to, the following:

(i) Delivery of Loan Documentation satisfactory to the Borrower, the Administrative Agent and the Lenders, including, without limitation, a satisfactory opinion from counsel to the Borrower regarding usual and customary matters and specifically including PSC approval of the borrowing of the Mortgage Facility.

(ii) Receipt of satisfactory evidence that the Administrative Agent (on behalf of the Lenders) shall have a valid and perfected first priority (subject to certain exceptions to be set forth in the Loan Documentation) lien on the Carman Property, and satisfactory evidence that Rensselaer County Industrial Development Agency ("Rensselaer IDA") is the owner of the Krey Property and has leased such property to the Borrower free and clear of all liens, encumbrances and exceptions, except those which the Administrative Agent has approved and the existing mortgage lien in favor of HSBC Bank USA, N.A. The lease with the Rensselaer IDA provides that the Borrower can terminate such lease at

any time without penalty and that upon termination, title to the Krey Property will transfer to the Borrower.

(iii) There shall not have occurred a material adverse change (x) in the business, assets, properties, liabilities (actual or contingent), operations, condition (financial or otherwise) or prospects of the Borrower since December 31, 2009 or (y) in the facts and information regarding such entity as represented to date.

(iv) The absence of any action, suit, investigation or proceeding pending or, to the knowledge of the Borrower, threatened in any court or before any arbitrator or governmental authority that could reasonably be expected to (x) have a material adverse effect on the business, assets, properties, liabilities (actual and contingent), operations, condition (financial or otherwise) or prospects of the Borrower, (y) adversely affect the ability of the Borrower to perform its obligations under the Loan Documentation or (z) adversely affect the rights and remedies of the Administrative Agent or the Lenders under the Loan Documentation (collectively, a "Material Adverse Effect").

(v) Receipt by the Administrative Agent in form and substance reasonably satisfactory to it, of all environmental reports and such other reports, audits or certifications as it may reasonably request.

Borrower shall provide the following items to the Administrative Agent at least ten (10) days prior to the Closing Date:

TITLE INSURANCE AND TITLE REPORT:

A. Carman Property. A title insurance commitment issued by a title insurance company acceptable to the Administrative Agent containing an appropriate metes and bounds legal description matching the survey and committing the title insurance company to issue a policy in form and content satisfactory to the Administrative Agent insuring the Mortgage to be a valid first mortgage on the Carman Property in the amount of the Current Value thereof, free and clear of all liens, encumbrances and exceptions, other than those which the Administrative Agent has approved.

B. Krey Property. A title report issued by a title insurance company acceptable to the Administrative Agent covering the Krey Property and indicating that Borrower leases such property from the Rensselaer IDA free and clear of all liens, encumbrances

and exceptions, other than those which the Administrative Agent has approved and the existing mortgage lien in favor of HSBC Bank USA, N.A.

SURVEYS:

A. Carman Property. A recent survey of the Carman Property certified to the Administrative Agent and the title insurer showing all monuments, courses and distances as well as all structures, easements, rights-of-way, encroachments and other customary and relevant information, including a metes and bounds legal description. Proof must be furnished that the Carman Property contains no designated "wetlands" that will affect the Project.

B. Krey Property. Current instrument perimeter survey of the Krey Property approved by the Administrative Agent showing all monuments, courses and distances as well as all structures, easements, rights-of-way, encroachments and other customary and relevant information, including a metes and bounds legal description. Proof must be furnished that the Krey Property contains no designated "wetlands" that will affect the Project.

SITE PLAN: A site plan of the Project illustrating the proposed improvements and showing all required governmental approvals.

ENVIRONMENTAL QUESTIONNAIRES: A completed environmental questionnaire in form and content satisfactory to the Administrative Agent covering the Project Property.

PHASE I REPORT: A Phase I environmental audit covering both the Project Property certified to the Administrative Agent and subject to Lenders' review and approval.

PLANS AND SPECIFICATIONS: A set of plans and specifications for the Project ("Plans and Specifications") that are complete in all material respects. The Plans and Specifications shall have approvals noted thereon by Borrower and the construction manager. No material changes in or additions to the submitted Plans and Specifications may be made without the Administrative Agent's reasonable prior written consent.

SOIL TEST REPORT: Soil test reports of the Krey Property by engineers acceptable to the Administrative Agent indicating the suitability of the land for the construction of the Project without extraordinary land preparation.

PRE-COST ANALYSIS: An analysis of proposed construction costs and Project budget, including a review of the Plans and Specifications by any inspecting engineer engaged by the Administrative Agent at Borrower's expense ("Inspecting Engineer"). The Administrative Agent agrees to consult with the Borrower in selecting the Inspecting Engineer. Such report will include (i) an analysis satisfactory to the Lenders demonstrating the adequacy of the Project budget and trade cost breakdown to complete the Project, (ii) confirmation that the construction schedule is realistic, (iii) confirmation of the information contained in the architect's certification, and (iv) completeness and conformity of the Plans and Specifications with applicable building codes and all other laws, ordinances and regulations.

BUDGET AND TRADE COST BREAKDOWN: Detailed Project budget and trade cost breakdown and itemization of construction and nonconstruction expenses, including hard and soft cost contingency reserves, showing all costs required to complete the Project according to the approved Plans and Specifications, cash flow projections for the Project, and detailed construction schedule.

LIST OF CONTRACTORS AND SUBCONTRACTORS: A list of all major contractors and subcontractors who will work on the Project under contracts involving $100,000 or more in payments.

CONSTRUCTION MANAGEMENT CONTRACT: The construction management contract (together with all contract documents) which shall contain all applicable provisions of a standard fixed guaranteed maximum price contract and which shall be consistent with the Project budget, including a guaranty of payment of cost overruns by the major contractors and subcontractors when such overruns are not the result of agreed upon changes to the Plans and Specifications. The construction management contract and the construction manager ("Construction Manager") must be acceptable to the Administrative Agent, and shall be substantially in agreement with the projected construction costs Borrower has submitted to the Lenders.

PERFORMANCE AND PAYMENT BOND: To be furnished by the Construction Manager as required by the Administrative Agent in an amount no greater than the maximum

amount which the Administrative Agent reasonably believes will be at risk at any time during the Construction Period, and which bond must be acceptable to the Administrative Agent.

CONSTRUCTION MANAGER'S AGREEMENT: An agreement by the Construction Manager to continue to perform for the Administrative Agent the services the Construction Manager has contracted to perform for Borrower notwithstanding any default by Borrower, provided the Construction Manager continues to receive payments under the Construction Manager Contract.

ARCHITECT'S AGREEMENT AND CERTIFICATION: An agreement by the Project architect to perform for the Administrative Agent the services the architect has contracted to perform for Borrower notwithstanding any default by Borrower, provided the architect continues to receive payment under its contract; and the architect's certification that the Project, when completed according to the Plans and Specifications, will comply with all applicable laws, codes, regulations and ordinances.

ZONING: A copy of the zoning map, zoning ordinance and all variances and special permits applicable to the Project Property and the Project, and a current letter from the applicable municipality (or other evidence of compliance with zoning as may be reasonably acceptable to the Administrative Agent), which shall demonstrate that the construction and use of the Project and the Project Property are permitted, that SEQR has been complied with in connection with the Project, that no setback or subdivision ordinances are or will be violated, and that the Project complies with all municipal laws, codes and ordinances.

PERMITS AND APPROVALS: Building permits, and all other permits, licenses, authorizations and approvals, required for the use and for the construction of the Project, and the use of the Project Property.

UTILITY AVAILABILITY LETTERS: Letters from appropriate utility companies and municipalities assuring the availability of all utilities, including water, sewer, drainage, electric, gas, telephone and cable service adequate for the completed Project.

FLOOD HAZARD CERTIFICATIONS: Flood Hazard certifications indicating that neither the Krey Property nor the Carman Property is located in a designated flood hazard area. The Administrative Agent shall obtain such certifications at Borrower's expense.

INSURANCE: Insurance policies or certificates evidencing same, in amounts and with insurers acceptable to the Administrative Agent, cancelable only upon thirty (30) days prior written notice to the Administrative Agent, and providing:

(a) Extended coverage casualty insurance in the form of a "Builder's Risk" nonreporting policy covering the Project Property, as well as property insurance covering the Carman Property, in an amount to be determined by the Administrative Agent as the insurable value of the Project, with a New York mortgage endorsement, naming the Administrative Agent as mortgagee and loss payee without subjecting the mortgagee to defenses which may be available against Borrower and providing for a mandatory 30-day notice to the Administrative Agent of cancellation;

(b) Public liability and property damage insurance in amounts acceptable to the Administrative Agent naming the Administrative Agent as an additional insured party;

(c) Workers' Compensation insurance; and

(d) Flood insurance, naming the Administrative Agent as mortgagee, if required.

The Loan Documentation will include, without limitation, the following provisions:

CONDITIONS PRECEDENT TO ALL BORROWINGS: Usual and customary for transactions of this type, to include without limitation: (i) all representations and warranties are true and correct as of the date of each borrowing and (ii) no event of default under the definitive agreement governing the Mortgage Facility or incipient default has occurred and is continuing, or would result from such borrowing.

REPRESENTATIONS AND WARRANTIES: Usual and customary for transactions of this type, to include without limitation: (i) corporate existence and status; (ii) corporate power and authority, enforceability; (iii) no violation of law,

contracts or organizational documents; (iv) no material litigation; (v) accuracy and completeness of specified financial statements and no material adverse change; (vi) all required governmental or third party approvals or consents obtained; (vii) use of proceeds and not engaging in business of purchasing/carrying margin stock; (viii) status under Investment Company Act; (ix) ERISA matters; (x) environmental matters; (xi) tax matters; (xii) ownership of property and insurance matters; (xiii) accuracy of disclosure made to the Administrative Agent and the Lenders; (xiv) compliance with laws; (xv) subsidiaries; (xvi) no default; and (xvii) perfected liens.

COVENANTS: Usual and customary for transactions of this type, to include without limitation: (i) delivery of audited financial statements within 120 days of fiscal year-end, and company prepared quarterly financial statements within 45 days of the end of each fiscal quarter, compliance certificates and notices of default, material litigation, material governmental proceedings or material, ERISA and environmental proceedings and material changes in accounting or financial reporting practices; (ii) compliance with laws and material contractual obligations; (iii) payment of obligations; (iv) preservation of existence; (v) maintenance of books and records and inspection rights; (vi) maintenance of insurance; and (vii) limitation on liens, mergers, acquisitions and joint ventures, sales of assets and incurrence of debt.

EVENTS OF DEFAULT: Usual and customary in transactions of this type, with cure periods and carve-outs to be mutually agreed upon, to include without limitation: (i) nonpayment of principal, interest, fees or other amounts; (ii) any representation or warranty proving to have been incorrect when made or confirmed; (iii) failure to perform or observe covenants set forth in the Loan Documentation within a specified period of time, where customary and appropriate, after such failure; (iv) cross-default to other indebtedness; (v) bankruptcy and insolvency defaults (with grace period for involuntary proceedings); (vi) monetary judgment defaults in an amount to be agreed; (vii) actual or asserted invalidity of any Loan Documentation; (viii) change in governmental approvals or Borrower's tariffs which could have a material adverse effect on the business assets, liabilities (actual or contingent), operations, condition (financial or otherwise) or prospects of the Borrower and which is, in the Administrative Agent's reasonable judgment, materially adverse to the interests of the Lenders in connection with the Mortgage Facility; (ix) change in ownership of Borrower or of the Project Property; and (x) customary ERISA defaults.

ADVANCES FOR CONSTRUCTION:

During the Construction Period, the Construction Loan will be disbursed in interim advances not more frequently than once each month based upon the value of work (including the value of architectural and engineering work) completed. Requests for advances must be submitted on AIA Form G702, executed by Borrower and the Project architect and received by the Administrative Agent at least ten (10) days prior to the day the advance is sought. Until the Project is complete, the Inspecting Engineer shall perform monthly inspections at Borrower's expense and in scope satisfactory to the Administrative Agent. Each advance will be conditioned upon (i) the determination of the Inspecting Engineer (to be reached as efficiently and promptly as possible) that completed construction has been in accordance with the approved Plans and Specifications, that the necessary percentage and nature of work has been completed in accordance with the Project budget to justify the advance requested, and that the undisbursed portion of the Construction Loan (taking into account any amounts deposited by the Borrower in accordance with the last sentence of this paragraph) will be sufficient to complete the Project, (ii) a clear continuation of title to the date of such advance, (iii) evidence that the title insurance policy insures the priority of the lien of the Mortgage with respect to that advance, and (iv) current lien waivers from the Construction Manager and contractors and subcontractors to be identified by the Administrative Agent. Borrower shall deposit with the Administrative Agent within thirty (30) days of the Administrative Agent's demand therefor an amount equal to the amount by which the cost of full lien-free completion of the Project exceeds the amount of undisbursed Construction Loan funds.

FINAL ADVANCE:

The final advance of the Construction Loan shall be made only after receipt by the Administrative Agent of (i) a final unconditional certificate of occupancy for the Project, (ii) municipal approval of any subdivision, curb cuts, access roads or other components of the Project, (iii) an "as-built" survey acceptable to the Administrative Agent, (iv) certificate of substantial completion from the Project architect, verified by the Inspecting Engineer, (v) affidavit of payment and lien waiver from the Construction Manager, (vi) lien waivers from contractors and subcontractors as required by the Administrative Agent, (vii) final title insurance policy, if not previously issued, acceptable to the Administrative Agent and (viii) such other evidence of lien-free completion as the Administrative Agent may require.

ASSIGNMENTS: Each Lender will be permitted to make assignments in respect of the Mortgage Facility in a minimum amount equal to $5,000,000 and increments of $1,000,000 above such minimum amount or the entire amount of such Lender's portion of the Mortgage Facility to other financial institutions approved by the Administrative Agent and, so long as no Event of Default has occurred and is continuing, the Borrower, which approvals shall not be unreasonably withheld or delayed; provided, however, that the approval of the Borrower shall not be required in connection with assignments to other Lenders, or to any affiliate of a Lender.

An assignment fee of $3,500 payable to the Administrative Agent will be charged to each assignor with respect to each assignment. Each Lender will also have the right, without consent of the Borrower or the Administrative Agent, to assign as security all or part of its rights under the Loan Documentation to any Federal Reserve Bank.

PARTICIPATIONS: Lenders will be permitted to sell participations with voting rights limited to significant matters such as changes in amount, rate, maturity date and releases of all or substantially all of the collateral or the Guarantors.

WAIVERS AND AMENDMENTS: Amendments and waivers of the provisions of the loan agreement and other definitive credit documentation will require the approval of Lenders (the "Required Lenders") holding loans and commitments representing more than 66-2/3% of the aggregate amount of loans and commitments under the Mortgage Facility, except that the consent of all the Lenders affected thereby shall be required with respect to (i) increases in the commitment of such Lenders, (ii) reductions of principal, interest or fees, (iii) extensions of scheduled maturities or times for payment and (iv) releases of all or substantially all of the collateral.

GOVERNING LAW: State of New York.

EXPENSES: The Borrower will pay on demand all reasonable and documented third-party costs and expenses associated with the preparation, due diligence, administration, syndication and closing of all Loan Documentation, including, without limitation, (a) the reasonable legal fees and expenses of counsel to Berkshire, and (b) the reasonable legal fees and expenses of counsel to the other Lenders up to $4,000 in the aggregate for such other Lenders (the "Other Lenders' Expenses"), regardless of whether or not the Mortgage Facility is closed; provided however, the aggregate amount of all

such expenses (excluding any expenses for environmental reports on the Project Property but including the Other Lenders' Expenses) shall not exceed $40,000, unless approved by the Borrower, such approval not to be unreasonably withheld. The Borrower will also pay on demand the reasonable third-party expenses of the Administrative Agent and each Lender in connection with the enforcement of any Loan Documentation.

OTHER: Each of the parties shall (i) waive its right to a trial by jury and (ii) submit to New York jurisdiction.

BERKSHIRE BANK
America's Most Exciting Bank℠

December 10, 2010

Mary K. McGarvey, Chief Financial Officer
The New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, New York 12144

Re: $45,000,000 Mortgage Facility for The New York Independent System Operator, Inc.

Ladies and Gentlemen:

This letter sets forth the fees payable by The New York Independent System Operator, Inc. ("NYISO") in connection with the up to $45,000,000 mortgage loan facility contemplated to be provided to NYISO ("Mortgage Facility") pursuant to the Commitment Letter of even date herewith (together with the Summary of Terms and Conditions attached thereto, the "Commitment Letter") between NYISO and Berkshire Bank ("Berkshire") regarding the arrangement and syndication of the Mortgage Facility. Terms defined in the Summary of Terms and Conditions are used in this letter as therein defined.

The definitive credit agreement for the Mortgage Facility ("Credit Agreement") will provide for certain fees payable to the lenders that are parties to the Credit Agreement (the "Lenders") in proportion to their respective commitments. As one of the proposed Lenders, Berkshire will be entitled to its proportionate amount of such fees.

Additionally, there are certain other fees payable by NYISO that are only for the account of Berkshire. By executing this letter, NYISO agrees to pay to Berkshire, for its own account, the following fees that shall be nonrefundable when paid:

Arrangement and Construction Management Fee:	$50,000.00 payable at closing.
Annual Administrative Fee:	An amount per annum equal to $5,000, with such fee payable initially at closing and thereafter on the annual anniversary date of the closing of the Mortgage Facility (subject to proration for any partial period).

All of the fees described above in this letter shall be fully earned in accordance with the terms hereof, shall be nonrefundable for any reason whatsoever, and shall be in addition to the fees set forth in the definitive documentation for the Mortgage Facility.

41 State Street, Albany, NY 12207

NYISO agrees that this letter is for its confidential use only and will not be disclosed by NYISO to any person other than NYISO's accountants, attorneys and other advisors, and then only in connection with the transactions contemplated by the Summary of Terms and Conditions and on a confidential basis. Additionally, NYISO may make such disclosures of this letter, including required filings with the applicable regulatory authorities, as are required by law or judicial process or as may be required or appropriate in response to any summons or subpoena or in connection with any litigation.

This letter supersedes our fee letter of November 9, 2010 and all prior letters and understandings relating to the specific matters hereof.

This letter may be executed in counterparts which, taken together, shall constitute an original. This letter embodies the entire agreement and understanding between the Lenders and the Borrower with respect to the specific matters set forth herein and supersedes all prior agreements and understandings related to the subject matter hereof.

Please evidence your acceptance of this letter by signing and returning to the undersigned the enclosed duplicate original of this letter not later than December 24, 2010.

Very truly yours,

BERKSHIRE BANK

By: Richard C. Van Auken
Name: Richard C. Van Auken
Title: First Vice President

ACCEPTED AND AGREED
as of December 30, 2010

THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

By: Mary K. McGarvey
Name: Mary K. McGarvey
Title: Chief Financial Officer

Doc # 01-2312309.8

Attachment II.

Accrued Interest on Outstanding Indebtedness

NYISO
STATEMENT OF FINANCIAL CONDITION
ACCRUED INTEREST ON INDEBTEDNESS

	At December 31, 2008:		
Facility	Interest Rate	Outstanding Principal	Accrued Interest
Replacement Revolver	n/a	$ -	$ -
2004-2006 Budget Facility	2.23%	$ 12,252,000	$ 23,540
2007-2010 Budget Facility	1.83% - 5.73%	$ 26,700,000	$ 111,543
Mortgage and Renovations Loan	5.79% - 5.96%	$ 21,956,497	$ 110,858
Totals		**$ 60,908,497**	**$ 245,941**

Attachment III.

Most Recent Unaudited Financial Statements

STATEMENT OF FINANCIAL POSITION

As of September 30, 2010 and 2009

UNAUDITED

	09/30/10	09/30/09
ASSETS:		
Current Assets:		
Cash and Cash Equivalents	$ 61,127,681	$ 59,127,955
Restricted Cash	415,514,721	391,451,715
Accounts Receivable, net	15,685,923	11,412,230
Prepaid Expenses	7,317,644	7,206,081
Regulatory Asset - current portion	-	2,362,743
Other Assets - current portion	650,237	99,766
Total Current Assets:	500,296,206	471,660,490
Long-Term Assets:		
Regulatory Assets - noncurrent portion	11,080,399	12,129,891
Property and Equipment, net	54,879,103	52,462,625
Other Noncurrent Assets	18,302,667	18,017,060
TOTAL ASSETS:	$ 584,558,375	$ 554,270,066
LIABILITIES AND NET ASSETS:		
Current Liabilities:		
Accounts Payable and Accrued Expenses	$ 21,135,928	$ 18,217,804
Market Participant prepayments	35,831,609	7,847,464
Market Participant Security Deposits	374,226,396	378,129,928
Short-Term Debt	5,625,000	-
Long-Term Debt - current portion	19,721,957	20,930,853
Working Capital Reserve	46,479,536	46,538,920
Deferred Revenue - current portion	3,647,789	3,396,123
Regulatory Liabilities - current portion	14,945,865	11,374,299
Other Current Liabilities	1,609,617	3,377,984
Total Current Liabilities:	523,223,697	489,813,375
Long-Term Liabilities:		
Pension and Postretirement Benefit Liabilities	6,777,080	12,841,372
Regulatory Liabilities - noncurrent portion	3,905,604	2,857,999
Other Noncurrent Liabilities	6,863,685	5,247,054
Long-Term Debt	43,788,309	43,510,266
TOTAL LIABILITIES:	$ 584,558,375	$ 554,270,066
TOTAL NET ASSETS:	-	-
TOTAL LIABILITIES AND NET ASSETS:	$ 584,558,375	$ 554,270,066

YTD STATEMENT OF ACTIVITIES

FOR THE PERIODS ENDING September 30, 2010 AND 2009

*****UNAUDITED*****

	For the period ended 9/30/2010	For the period ended 9/30/2009
REVENUES:		
Rate Schedule 1 tariff charge	$ 110,934,469	$ 102,354,227
Interconnection studies revenue	2,397,321	2,224,388
SGIG grant revenue	1,689,770	-
EIPC grant revenue	81,880	-
Fees and services	611,586	653,261
Interest income	26,346	42,950
TOTAL REVENUES	$ 115,741,372	$ 105,274,826
OPERATING EXPENSES:		
Compensation and related benefits	$ 45,024,397	$ 42,370,862
Professional fees and consultants	21,627,418	21,823,087
Maintenance, software licenses and facility costs	14,083,783	13,052,510
Depreciation and Amortization	12,626,242	12,540,580
Federal Energy Regulatory Commission fees	9,270,191	7,485,315
Telecommunication expenses	2,700,966	2,670,304
Administrative and other expenses	2,773,568	2,334,091
Insurance expense	2,060,715	2,109,299
Training, travel, and meeting expenses	1,082,722	862,844
Interest expense	2,354,816	2,334,545
Northeast Power Coordinating Council fees	215,078	188,982
Change in fair value of interest rate swaps and caps	1,921,476	(2,497,593)
TOTAL OPERATING EXPENSES	115,741,372	105,274,826
Change in unrestricted net assets	$ -	$ -
Unrestricted net assets, beginning of year	-	-
Unrestricted net assets, end of year	$ -	$ -

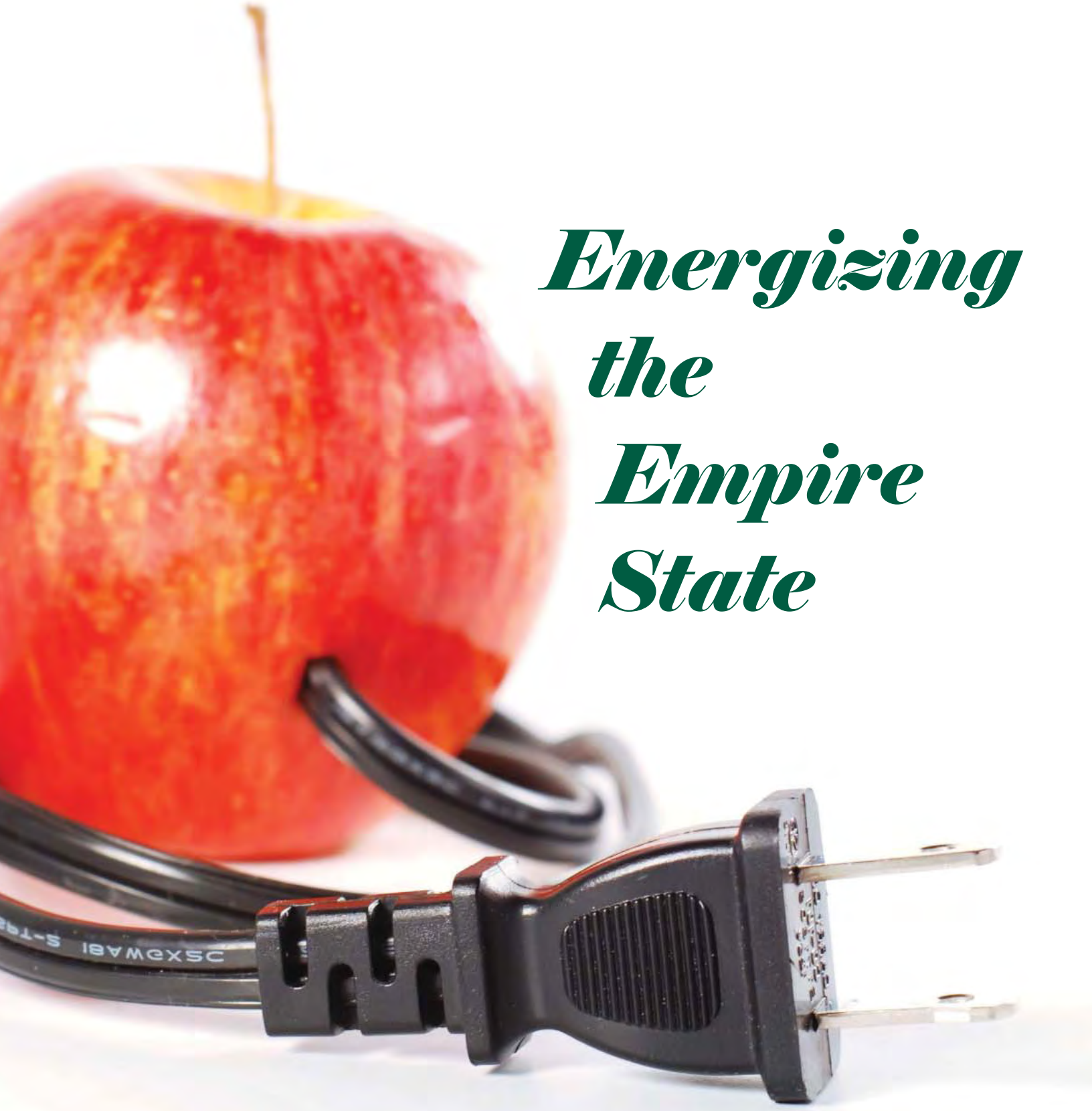
STATEMENT OF CASH FLOWS
FOR THE PERIOD ENDING September 30, 2010
UNAUDITED

CASH FLOWS FROM OPERATING ACTIVITIES:	
Change in net assets	$ -
Adjustments to reconcile change in net assets to net cash provided by operating activities:	
Depreciation and amortization	12,626,242
(Gain)/loss on disposition of assets	
Change in operating assets and liabilities:	
Accounts receivable and prepaid expenses	(6,023,332)
Decrease in restricted cash	(44,352,470)
Accounts payable and accrued expenses	(2,497,521)
Market participant prepayments and security deposits	43,496,820
Working capital reserve	(64,108)
Other assets	(6,557,344)
Other liabilities	11,624,800
Net cash provided by (used in) operating activities	$ 8,253,087
CASH FLOWS FROM INVESTING ACTIVITIES:	
Acquisition of property and equipment	(10,330,833)
Proceeds on disposition of assets	-
Net cash provided by (used in) investing activities	$ (10,330,833)
CASH FLOWS FROM FINANCING ACTIVITIES:	
Net proceeds from revolving credit facilities	5,625,000
Net proceeds from 2010 budget facility	20,000,000
Repayment of 2009 budget facility	(4,575,005)
Repayment of 2008 budget facility	(4,175,001)
Repayment of 2007 budget facility	(3,750,000)
Repayment of 2006 budget facility	(2,907,000)
Repayment of Mortgage & renovation loans	(594,657)
Net cash provided by (used in) financing activities	$ 9,623,337
NET INCREASE IN CASH AND CASH EQUIVALENTS	$ 7,545,592
Cash and Cash Equivalents, beginning of period	$ 53,582,089
Cash and Cash Equivalents, end of period	$ 61,127,681

Attachment IV.

Most Recent Annual Report including Most Recent Audited Financial Statements

2009 ANNUAL REPORT



Energizing the Empire State

NEW YORK INDEPENDENT SYSTEM OPERATOR

New York Independent System Operator

- *Sustaining and enhancing reliability*
- *Bolstering open and competitive markets*
- *Planning a smarter, greener, and more efficient grid*

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Letter from the Board Chair and President & CEO

2009 was a milestone in the history of the New York Independent System Operator, marking our first decade of successfully energizing the Empire State.

Since the NYISO began operations in 1999, New York's competitive marketplace has helped improve reliability and increase the responsiveness of the power system, providing benefits for all New Yorkers.

These benefits include a decrease in power plant emissions, an increase in renewable resources, and the development of demand-side management innovations. The markets have provided sustained economic value to consumers by fostering innovation and expanding customer choice.

While our industry-leading record of innovation and value continued in 2009, the NYISO also faced many challenges as the economic downturn continued. In response to reduced electricity use, the NYISO cut its planned spending by $12 million. Prices were similarly affected by decreased demand, as well as reductions in the cost of fuel. This led to an unprecedented 50% drop in power prices as compared to 2008 – with the average 2009 price at a level lower than any year in our history.

Whether we are addressing dynamic economic conditions or advancing the evolution of grid operations and market design, the NYISO's unique shared governance system provides advantages for managing change. Combining an independent Board of Directors and actively engaged stakeholder committees, shared governance has been instrumental in guiding the progress of the past decade.

The NYISO Board is a diverse body whose members feature backgrounds in the electric industry, public service, finance, academics, information technology, and communications. In 2009, we welcomed two new Board members: Ave M. Bie, former Chair of the Wisconsin Public Service Commission; and Michael B. Bemis, who has more than three decades of experience as an executive in the electric utility industry.

The NYISO continued its leadership in market design, grid operations, electricity system planning, and technological innovation in 2009. In our operation of the bulk electricity grid, we remained intently focused on the reliable supply of electricity, which sustains the lives and livelihoods of New York State's families, businesses, and institutions.

Through market design and advanced grid technology, we pioneered the integration of wind energy and new energy storage technologies. There are now over 1,275 megawatts of wind generation in operation with an additional 7,000 megawatts proposed for grid connection.

We expanded our quest for new solutions to New York's energy needs with an initiative to receive Smart Grid funding from the federal government. The U.S. Department of Energy awarded the NYISO $37.8 million in federal stimulus funds to support Smart Grid investments in New York. The funds will support grid technology to enhance the reliability of the bulk electricity system.

Working in collaboration with grid operators and system planners beyond our borders, we began significant initiatives for broader regional markets and expanded interregional planning.

In addition, we added an important economic component to our long-term system reliability planning process. It features a first-of-its-kind economic analysis of transmission congestion on New York State's bulk power system and the potential costs and benefits of relieving the congestion.

Seeking an independent view of our first decade of operations, in 2009 we commissioned a comprehensive external study by the Analysis Group. The report, released in April 2010, offered an unbiased, independent look at our history to date. It found that the NYISO has succeeded in operating the electric grid reliably and has developed the best market design in the nation. It noted that New York's competitive wholesale electricity markets have helped to create demand response programs and increase generation and transmission in the right locations – paid for by developers, not ratepayers. It highlighted the role of markets in fostering the growth of renewable resource and reducing emissions.

The Analysis Group report also noted that, like any organization, there are areas in which we can improve, including working to enhance transparency and sharpen our focus on consumer interests.

Building on our ten-year record of progress, we are committed to making the grid smarter, greener, and more efficient. We are proud that others recognize our record of excellence. In the past decade, more than 1,000 representatives from over 50 nations have visited us to learn about competitive power markets and reliable operation of the grid.

With a renewed commitment to excellence in the performance of our vital roles and the enthusiastic pursuit of new challenges and opportunities, we are confident about building on our record of success and lighting the way to New York's bright energy future.

Karen Antion
Chair, Board of Directors

Stephen G. Whitley
President & CEO

2009 In Brief

The economic recession and the disruption of the financial markets resulting from the credit crisis significantly impacted the electric system in 2009. Across the nation, demand for electricity dropped 4.2 percent, the biggest single-year decline in sixty years.

In New York State, we experienced a nearly identical drop in power demand – a 4.1 percent decline.

Anticipating reduced revenues as a result of lower electricity use, the NYISO initiated cost-cutting and budget revision to cut planned spending by $12 million in 2009.

In the midst of this historic economic downturn, the NYISO continued to achieve its objectives and enhance the ways in which it serves to energize the Empire State.

In 2009, the NYISO pioneered power market innovations, especially with regard to renewable resources. We implemented a state-of-the-art wind forecasting system and became the first grid operator to integrate wind-generated electricity into economic dispatch. A windpower milestone was achieved in February 2009, as the combined total output of all wind plants in New York reached 1,000 megawatts for the first time. The capacity of New York's windpower generation totaled 1,275 megawatts in 2009, with proposed projects offering the potential of another 7,000 megawatts.

The NYISO achieved another market first in the area of energy storage, creating the first regulation-only energy storage product in any ISO/RTO market environment. In November 2009, Beacon Power broke ground for its Stephentown, N.Y. flywheel energy storage plant. When completed in 2012, the 20 MW project is expected to become the nation's first full-scale flywheel system to provide grid regulation services.

In 2009, the NYISO conducted a first-of-its-kind economic analysis of transmission congestion on the New York State bulk power system and the potential costs and benefits of relieving congestion.

On December 1, 2009, the NYISO marked its 10-year anniversary. The Federal Energy Regulatory Commission (FERC) authorized the creation of the NYISO in 1998. By November 1999, New York State's competitive wholesale electricity markets were opened to suppliers and consumers of electricity as NYISO began managing the bulk electricity grid. The formal transfer of the New York Power Pool's responsibilities to the newly created NYISO took place on December 1, 1999. NYISO has launched an enhanced version of its Web site (www.nyiso.com) in recognition of its first decade of operation.

A windpower milestone was achieved in February 2009, as the combined total output of all wind plants in New York reached 1,000 megawatts for the first time.


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Mission and Key Roles

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest by:

- *Maintaining and enhancing regional reliability*
- *Promoting and operating fair and competitive wholesale electricity markets*
- *Planning the power system for the future*
- *Providing objective and independent technical information on energy issues*

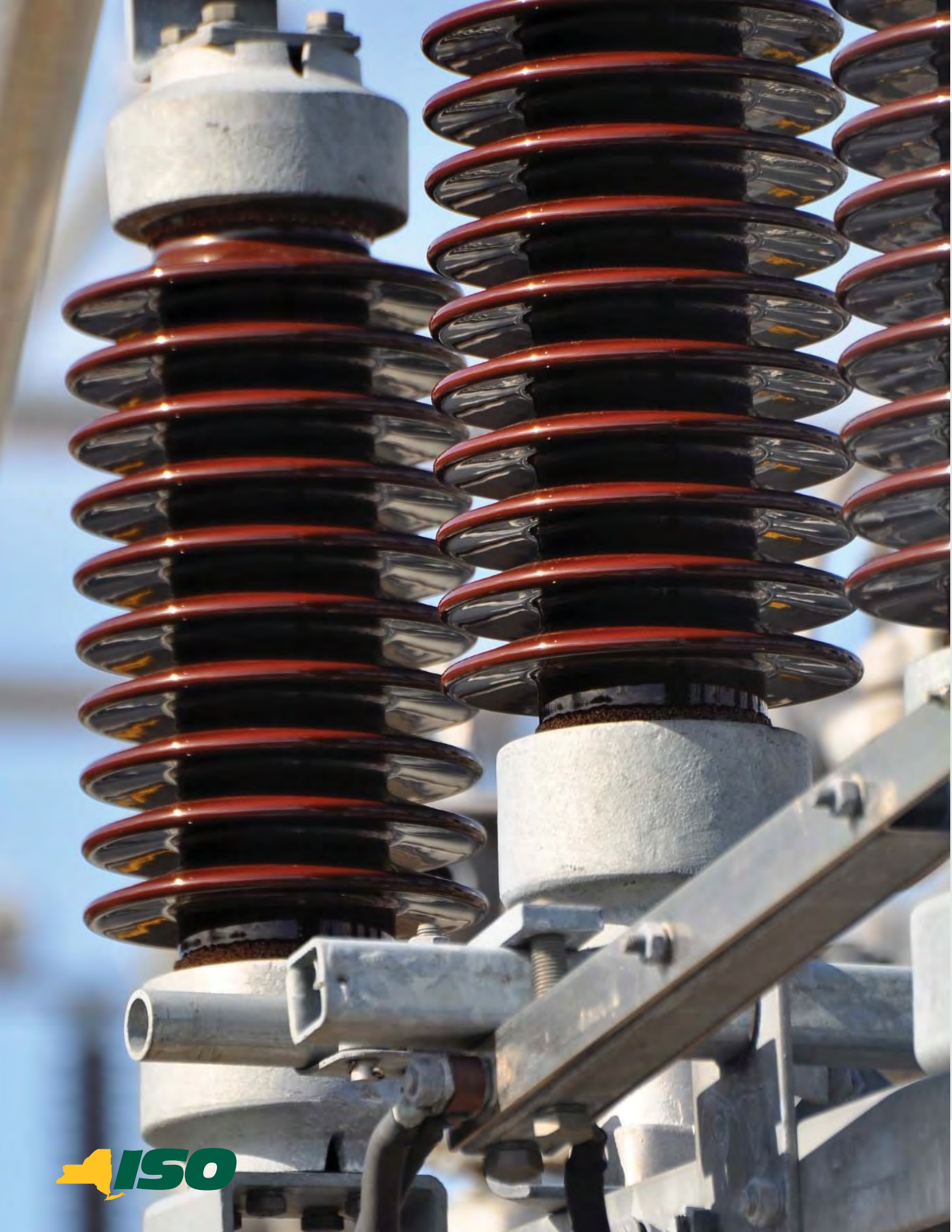
At the onset of operations in 1999, the NYISO's focus centered on the reliability of the bulk electricity grid and the development and administration of open, efficient wholesale electricity markets. Over the years, as the NYISO increased its ability to anticipate emerging energy needs, long-term system and resource planning emerged as a complementary role. Likewise, the NYISO's extensive information technology resources are an integral element in performing its mission and this technological expertise is increasingly being leveraged to address the energy needs of the Empire State.

Oversight & Governance

The NYISO is overseen by government regulators – the Federal Energy Regulatory Commission and the New York State Public Service Commission – as well as electric system reliability regulators. These include the North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC), and the New York State Reliability Council (NYSRC).

Shared governance, including an independent Board of Directors and stakeholder committees, has been key to the successful operation of the NYISO. Stakeholder committees are comprised of representatives of market sectors that include transmission owners, generation owners, other suppliers, end-use consumers, public power, and environmental parties. Since the inception of the NYISO, the overwhelming majority of the tariff revisions filed with the FERC have been developed through consensus among NYISO stakeholders about new market rules, system operations and planning procedures.

The shared governance process has been lauded for creating an environment that enables diverse points of view to be represented and complex issues to be fully vetted. The value of shared governance was noted by FERC in a 2008 order that stated, "The Commission commends NYISO and the stakeholders for working together to resolve many issues ..." Diverse input and extensive participation takes advantage of a wide array of expertise and experience to produce the best possible design changes.



Reliability

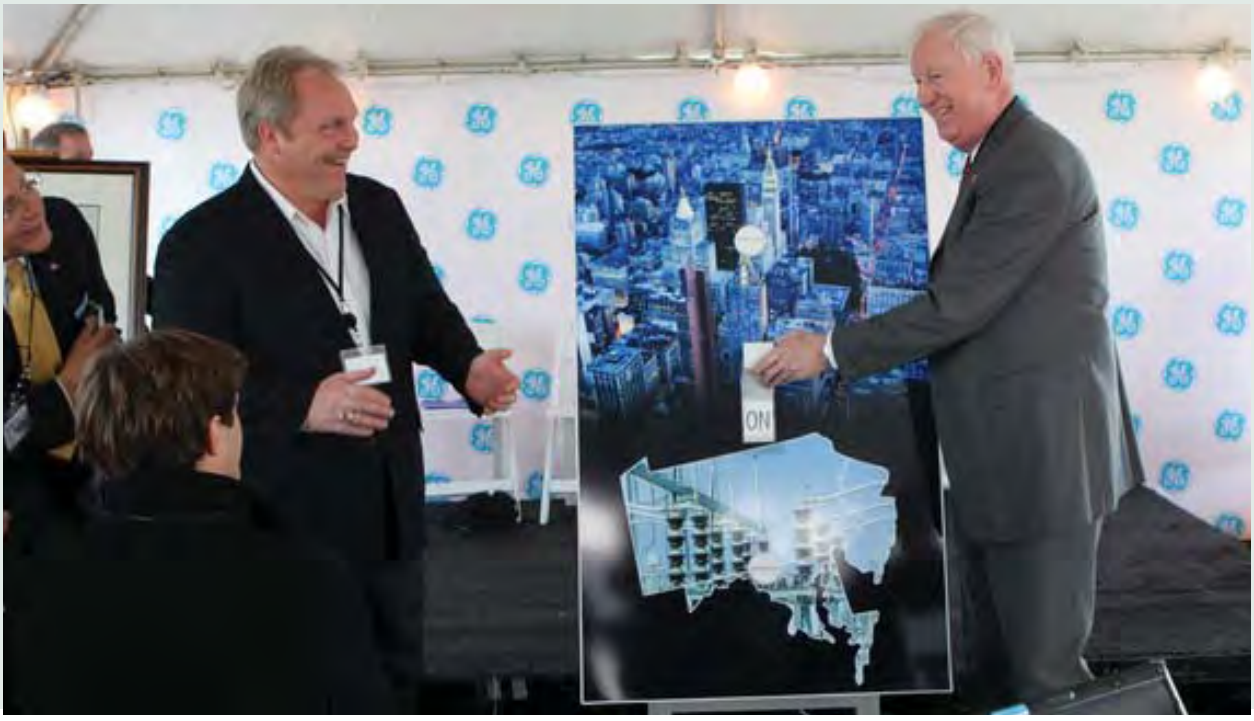
Reliable management of New York's bulk electricity grid, consisting of hundreds of generating units and thousands of miles of high-voltage transmission lines, requires constant balancing of the electricity supply to meet consumer needs, on a moment-by-moment basis, 24 hours a day, 365 days a year. The constant vigilance required for reliable power system operation is at the core of the NYISO's responsibilities.

In the NYISO's ten years of operation, we have met New York's power needs – sustaining the electric pulse of modern life – by reliably managing the bulk electricity grid.

In 2009, we continued to sustain and enhance reliability.

The resources available to meet summer peak demand increased to a surplus of over 900 megawatts in 2009. In the past decade, encouraged by the competitive marketplace, more than 7,600 megawatts of new generation was added, with 80 percent sited where demand for power is greatest (New York City, Long Island and the Hudson Valley).

Nearly 1,300 megawatts of transmission capability has been added to bring more power to the downstate region from out of state. 2009 saw the activation of the Linden VFT, a transmission facility that runs from Linden, NJ to Staten Island. The Linden project will transport 300 megawatts – enough electricity to power a quarter-million homes. It is the third major transmission project built to serve the metropolitan New York region since the creation of the NYISO a decade ago.



NYISO President & CEO Stephen G. Whitley helps to mark the inauguration of the Linden VFT project in December 2009.

Markets

When the federal and state governments opened access to the grid and restructured the electricity industry, the NYISO was assigned the task of designing, implementing and monitoring wholesale electricity markets. In collaboration with an extensive array of stakeholders, the NYISO has continued to evolve grid operations and market design to a level of sophistication few imagined possible a decade ago.

The State of the Markets Report issued in 2009 by the NYISO's Independent Market Advisor stated, "The NYISO markets are at the forefront of market design and have been a model for market development in other areas."

The number of participants in New York's wholesale electricity markets has tripled – from 120 in 2000 to approximately 400 in 2009. The value of transactions in the NYISO markets has grown to more than $75 billion. Demand response programs, providing incentives for energy conservation during peak periods, were created and have flourished. They now total over 2,300 megawatts, an amount equal to four medium-sized power plants.

Market prices reached historic lows in 2009 – 50 percent lower than in 2008 -- driven by lower electricity use and drops in the prices of natural gas (one of New York's chief generating fuels). Discounting fluctuations in the cost of fuel used to generate electricity, wholesale electricity costs dropped by 18 percent, representing a $2.2 billion savings on a current annual basis.

In the market environment, power producers have invested heavily in new generation and upgrades to existing facilities. Consumers have benefited through prices that are lower than they might have been otherwise. Environmental quality has been enhanced by the addition of more emission-free, renewable power resources and enhanced power plant efficiencies that have contributed to reduced emission rates.

For example, the system-wide heat rate of fossil-fueled power plants improved by 21 percent. Power plant emission rates, measured in tons per year for sulfur dioxide, nitrogen oxides, and carbon dioxide, have dropped by double digits since 2000.

NYISO markets continued to evolve in 2009 as innovations made New York the first to integrate wind in economic dispatch and adopt pioneering design to enable new energy storage technologies to provide regulation-only service.

Environmental quality has been enhanced by the addition of more emission-free, renewable power resources and enhanced power plant efficiencies that have contributed to reduced emission rates.

Planning

The supply of power and the demand for electricity are constantly changing. New power plants and transmission facilities are brought on line and older ones retired as energy technology advances. Consumer patterns of power use ebb and flow as the weather, the economy, and technology change. It is the NYISO's responsibility to anticipate and prepare for the impact of such changes on the reliable operation of the grid and the efficient operation of the markets. The unbiased, authoritative analyses, evaluations, and forecasts produced by the NYISO assist electricity consumers, power producers, energy service providers, regulators, and policy makers as they plan for the future.

In 2009, NYISO's multi-analyses Comprehensive Planning Process reported that the resources available to meet electricity needs are expected to exceed demand through the next decade.

NYISO planners coordinate with Market Participants, State and regional planning agencies and other key stakeholders on vital planning issues. With these partners, we complete studies and analyze reliability, operations, and market impacts of a broad range of energy-related federal and state level policy goals, including environmental, fuel diversity, energy efficiency, and renewables integration.

In January 2010, the NYISO issued a first-of-its-kind economic analysis of transmission congestion on the New York state bulk power system and the potential costs and benefits of relieving congestion. Called the Congestion Assessment and Resource Integration Study (CARIS), it is part of the NYISO's expanded comprehensive system planning process.

The study, developed with extensive stakeholder input, identified the three most congested parts of the New York bulk power system based upon historic data as well as estimates of future congestion. Transmission congestion results from physical limits on how much power high-voltage lines can reliably carry. Solutions may include building or upgrading transmission, building a less expensive power source in closer proximity to an area needing supplies, or reducing the demand for power in the downstream region.

In recent years, we have fostered expanded planning with other ISOs (Independent System Operators) and Regional Transmission Organizations (RTOs) to facilitate development of broader regional markets, interregional transmission analysis, and compatible Smart Grid design.

We hosted a symposium in 2009 featuring FERC Chairman Jon Wellinghoff as keynote speaker. Entitled *"Foundation to the Future: Infrastructure, Innovation and Investment,"* the event was well attended by a diverse array of energy industry leaders and policy makers.

In 2009, we issued an array of publications on energy issues, including planning reports, white papers, conference presentations, and other informative materials. Central to these is the NYISO's annual publication of *Power Trends*, which looks at the forces and factors affecting New York State's energy future.

In December 2009, the New York State Energy Planning Board approved and the Governor accepted the 2009 State Energy Plan. The first plan adopted since 2002, it establishes a framework of policy objectives and strategic recommendations to be implemented over a ten-year horizon in order to maintain reliable, affordable, and sustainable energy for New Yorkers. The NYISO contributed extensively to the research and analysis of data presented in the plan. The document states that the NYISO "has been generous in its support of the modeling efforts and has assisted the planning agency staff in data collection, modeling, and analysis." To govern future state energy planning, a new law was signed by the Governor in 2009. That new law added the NYISO as a non-voting member to the State Energy Planning Board.

The NYISO continued its exploration of the potential synergies between plug-in hybrid electric vehicles (PHEVs) and wind energy. PHEVs offer the promise of significant environmental and economic benefits, and could work in tandem with wind energy. Windpower projects tend to produce more electricity in the early morning hours, a period when current demand for electricity is relatively low. In 2009, a NYISO assessment found that, in general, the production profile of wind resources in New York correlates very well with off-peak charging of PHEVs, creating the potential for a synergy between wind generation and transportation energy needs. PHEV prospects have been enhanced by public policy initiatives encouraging electric-drive vehicles, including new programs proposed by President Barack Obama to support PHEV development and deployment.


ISO

Technology

Improving and advancing technologies has always been a cornerstone of NYISO activities. Our investments in information technology continue to provide a solid foundation for progress.

While references to "Smart Grid" have now grown commonplace, the NYISO has been working to make the grid smarter since we were created a decade ago. Staying ahead of the technology curve continues to pay dividends. NYISO information technology features architectures and platforms that rival the best in the nation, resulting in significant efficiencies for the competitive wholesale electricity markets and benefits to those consumers and suppliers participating in the marketplace.

In 2009, the NYISO was awarded $37.8 million by the U.S. Department of Energy to support investments in grid technology that will enhance the reliability of the bulk electricity grid in New York and provide the foundation for further development of Smart Grid infrastructure in New York State. The federal funds, provided under the Smart Grid Investment Grant (SGIG) program, will support a $75.7 million project creating a statewide Phasor Measurement Network and installing capacitor banks in various locations throughout the state.

In 2009, the NYISO successfully completed all planned software deployment projects, including Transmission Congestion Contract (TCC) Auction Automation, Credit Management System for Virtual Transactions and Credit Policy Enhancements, Wind Resource Management Software, Regulation-Only Energy Storage, Trading Hubs, and an enhancement of the NYISO website.

NYISO information technology initiatives not only serve the evolution of grid operation and market design; they also produce efficiencies in the operation of the NYISO. Our data center "virtualization" project, which reduced the number of servers by half, realized savings of $18.7 million through the end of 2009.

In 2009, NYISO IT systems also passed rigorous cyber-security tests. The NERC Critical Infrastructure Protection (CIP) audit was performed by a multi-authority external team. NYISO protection policies, procedures, and practices drew high marks from participating auditors from FERC, NERC, and the NPCC.

The NYISO - *A Ten-Year Review*

"In many respects, NYISO stands as a model of a well-functioning electric market that relies extensively on competitive markets to provide benefits to the state's electricity consumers."

Seeking an independent review of our first decade, the NYISO commissioned a study by Dr. Susan F. Tierney, managing principal of The Analysis Group. Dr. Tierney was formerly an assistant secretary of policy at the U.S. Department of Energy, a commissioner on the Massachusetts Department of Public Utilities, and co-chair of President Obama's Transition Team for the U. S. Department of Energy. In preparing the report, Dr. Tierney reviewed historic documents, researched market data, and interviewed numerous stakeholders.

The report finds that the NYISO has succeeded in operating the electric grid reliably and has excelled in the design of wholesale electricity markets. It notes that New York's competitive marketplace for electricity has helped to add system resources where they are needed the most. Likewise, the report cites the value of markets in cultivating the growth of renewable resources and encouraging efficiencies in generation that have contributed to reductions in power plant emissions.

The report also notes that, like any organization, there are areas in which the NYISO can improve. Among those areas are "seams" issues with neighboring grids that hamper regional efficiency. To address this concern, we are vigorously developing broader regional markets and enhancing interregional planning. In addition, the report recommends that the NYISO work to further enhance transparency and sharpen the focus on consumer interests.

The NYISO is committed to a mindset of excellence in execution and continuous improvement. The ten-year review conducted by The Analysis Group offers guidance to our efforts to build an increased focus on transparency and consumer interests. We are also dedicated to sustaining and enhancing reliability and reducing seams to improve market efficiency, to serve the best interests of the Empire State.

1999

NY's Electric Industry is Restructured – NYISO start-up authorized by FERC. NY Power Pool members transfer operation of New York Control Area to NYISO on December 1.

2000

Markets Grow – More than 100 Market Participants sign up in first year of NY marketplace for wholesale electricity. Transactions total $5.2 billion.

2001

***Power Alert* Warns of Generation Gap -** NYISO *Power Alert* report brings attention to potential power "generation gap" in downstate NY.

2005

A New Way to Plan – First NYISO Reliability Needs Assessment (RNA) completed in December, a milestone in the Comprehensive Reliability Planning Process for NY's electric system.

2006

Heat Waves Produce Record Peak - Power demands due to summer heat waves set record peaks three times over a three week period in July and August. Demand response helps to stabilize power use, saving the peak by 1,000 MW during record-breaking demand of August 2, 2006.

Studies Cite NYISO S
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ISO, which called New
"the most complete and
markets in the U.S."

Excerpts of The Analysis Group's: The New York Independent System Operator: A Ten-Year Review follow:

Reliability: *"Commenters consistently viewed the NYISO as doing an excellent job in its role as grid operator. There is a reservoir of confidence that NYISO is performing well in this regard, with a strong staff and ethic of excellence in operations ... Not only has the system operated well, but New York's system has produced reliability relatively economically."*

Markets: *"Thousands of megawatts of generating and demand-response capacity have been introduced in New York (over the past decade) without relying on consumers' rates to underwrite investment."*

Governance: *"As compared to the pre-NYISO years when eight transmission utilities exercised near-exclusive control over the New York Power Pool, over 350 Market Participants are now involved in shaping policies and protocols of the NYISO, and in providing services that support the provision of efficient, reliable and clean electric service."*

Electricity Prices: *"Many things not directly related to the NYISO's performance – such as increases in natural gas prices since 2000 and the high cost of doing business in New York State – have contributed substantially to electricity price increases in the state. These factors more than offset the power production efficiencies that occurred over course of the decade under electric industry restructuring and the NYISO's administration of wholesale markets."*

Environment and Energy: *"In the past decade, New York's electric industry has stimulated significant investment in new renewable power projects (such as wind turbines) and low-emitting natural gas plants, and caused strong interest in demand response. Together these have helped diversify the state's energy mix and lower the air emissions that contribute to acid rain, smog and global warming."*

Demand Response Arrives – NYISO successfully implements Emergency Demand Response Program (EDRP), which reduced demand by 400 MW during consecutive record consumption days.

2002

The 2003 Blackout – In August, a blackout originating in Ohio, affects 50 million people in the U.S. and Canada. NYISO and others acted to restore electric service expeditiously, with some parts of the state experiencing only momentary losses. Restoration completed statewide in less than 30 hours.

2003

SMD2 Approved - FERC approved NYISO's Standard Market Design 2 (SMD2) project. This milestone enables the integration of the Real-Time and Day-Ahead pricing more efficiently with new software.

2004

uccess –In July, dvisor issues *ort*: New York York's markets l efficient set of

2007

Innovations Yield Savings - First phase of multi-year IT "virtualization" reduced servers and cut costs. Use of "Lean Six Sigma" methodology streamlined the Thunderstorm Alert billing process, among other process improvements.

2008

Wind Power Milestones – On February 19, 2009, output of wind projects totaled 1,000 MW for first time. In May, FERC approved NYISO proposal to become the first grid operator to integrate wind resources with economic dispatch of electricity.

2009

Looking Ahead

Building on a decade of progress, we are working to enhance the wholesale electricity markets, bulk electricity grid, information technologies, and planning processes serving the electricity consumers of the Empire State.

NYISO initiatives include the interrelated objectives of a smarter grid, broader regional markets, wider interregional planning, and further progress in cultivating cleaner and greener resources.

Smart Grid

The Smart Grid encompasses comprehensive view of transmission, distribution and the "smart home" in which advanced metering and real-time price signals will help consumers be better informed about the amount and cost of the electricity they are using. Timely, accurate information can empower consumers to make informed decisions about their energy choices.

The bulk electricity grid already incorporates "smart" features. As grid operator, the NYISO has been consistently applying state-of-the-art technology to the management of the high-voltage transmission system and wholesale power markets. Both the grid and the marketplace will continue to become "smarter" by incorporating progressive generations of advancements. The use of digital information will greatly enhance the ability to monitor and control the transmission grid, and Smart Grid features will help minimize transmission and transformer losses, and enhance regional reliability.

Working with the owners of New York's transmission facilities, the NYISO is leveraging the investment of federal stimulus funds by the U.S. Department of Energy (DOE) to help provide the foundation for further development of Smart Grid infrastructure in New York State.

As Smart Grid is developed across North America, the ability of various technologies to work together is vital. Developing standards and protocols is an area where ISOs and RTOs play a leadership role. Cooperative efforts among grid operators and organized markets will provide uniform standards that provide fertile ground for deploying Smart Grid technology.

Broader Regional Markets

Making the grid smarter on a regional and interregional basis is linked to the NYISO's efforts to develop broader regional markets which will extend and expand the benefits of competition. The NYISO is leading the effort to expand regional markets with neighboring control areas to address limitations that currently exist in the areas where our markets and systems connect. The objective is seamless trading of electricity with neighboring regional transmission operators through interregional transaction coordination and market-based congestion management. The success of these efforts can expand opportunities for stakeholders, consumers and businesses in New York State and the region.

In 2009, the NYISO, in conjunction with grid operators serving the Mid-Atlantic, Midwest and New England regions of the U.S. and the Canadian province of Ontario, developed a series of "broader regional markets" initiatives for submission to the FERC. The proposals address ways to improve coordination of power transactions between regional grid operators. Enhancing the flow of power among the grid operators will expand the benefits of markets to consumers throughout the region. Preliminary analysis of the benefits of the proposals estimates regional annual savings of at least $368 million. Estimated savings associated with New York are $211 million a year.

Broader Interregional Planning

Expanded interregional planning means sharing information about emerging energy needs and working together to develop solutions. The NYISO is already involved in coordinated interregional planning within regional reliability organizations. It is actively developing broader coordination and collaboration to serve the common interest of consumers, grid operators, and electricity planning authorities.

In 2009, the NYISO helped lead the formation of a wide-ranging group of electric planning authorities. Called the Eastern Interconnection Planning Collaborative (EIPC), its 24 members are responsible for planning power systems from the Rocky Mountains to the Atlantic Ocean and from the Canadian Northeast to the Gulf of Mexico. The EIPC will benefit stakeholders by providing modeling and analysis concerning the entire Eastern Interconnection, identifying potential opportunities between members' systems, providing coordinated analysis of scenarios to policymakers and stakeholders, and developing potential transmission and expansion options and cost estimates to inform their decisions.

In October 2009, NYISO President and CEO Stephen G. Whitley was selected to chair the Executive Committee of the EIPC.

EIPC efforts have been recognized by federal energy authorities. In December 2009, the DOE announced that the EIPC and state groups from throughout the Eastern Interconnection would share in federal stimulus funds to support the transmission planning process. Key to the EIPC proposal is the development of an open and transparent stakeholder process. The EIPC was awarded $16 million in federal stimulus funding. The DOE also awarded $14 million to the Eastern Interconnection States' Planning Council to assist the states in developing a consensus process to identify renewable resources and other policy options as part of this pioneering interregional planning effort.

Greening the Grid

The NYISO markets will continue to develop in a way that values and encourages sustainable growth. We will continue planning for transmission enhancements and advancing the grid integration of renewable resources and energy storage technologies.

Advancements in market design have helped New York State assume a leadership role in green power and advanced energy technology. In 2009, the NYISO became the first grid operator to integrate wind into its economic dispatch function, which balances the reliability requirements of the power system with the use of the least costly power available.

We pioneered the integration of energy storage resources, such as flywheels and batteries, into our regulation market. Regulation helps balance electrical supply and demand on the grid. Energy storage devices offer complimentary technologies to the integration of renewable resources such as wind power. Flywheel and battery system devices store electricity as kinetic or chemical energy to provide power to the system when it is needed. In addition, we enhanced integration of other renewable resources, such as landfill gas/methane power projects.


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Conclusion

Working in close collaboration with stakeholders, policy makers and regulators over the past ten years, the NYISO has achieved great progress. We are committed to sustaining and enhancing our value to New York ratepayers, and we remain focused on continuous improvement in the conduct of our duties.

In 2010 and beyond, the NYISO will reinforce its commitment to reliable operation of the grid, competitive markets and making the grid smarter, greener, and more efficient.

The NYISO has contributed significantly to making the Empire State a leader in grid operations, market design, system planning, and energy technology. As we look to the future, we will strengthen the transparency of our operations, refine our focus on consumer interests, and further enhance the efficiency of the markets we are entrusted to administer.

We look forward to continuing to energize the Empire State.

2009 Board of Directors

Karen Antion, Board Chair
President of Karen Antion Consulting, LLC and former Senior IT Executive at Oracle Corporation and the Port Authority of New York and New Jersey.

Michael B. Bemis
Former President of Exelon Power and President of Energy Delivery for the Exelon Corporation.

Ave M. Bie
Partner in the law firm of Quarles & Brady and former Chair of the Wisconsin Public Service Commission.

Alfred F. Boschulte
President of AFB Consulting, specializing in strategic planning and operating margin improvements for telecommunications firms.

Robert A. Hiney
Former Executive Vice President for Power Generation of the New York Power Authority (NYPA).

Erland E. Kailbourne
Chairman of the Board of Financial Institutions, Inc. and its subsidiary Five Star Bank.

James V. Mahoney
President and CEO of Energy Market Solutions, Inc. and former President and CEO of DPL Inc., a regional energy and utility company.

Thomas F. Ryan, Jr.
Former President and COO of the American Stock Exchange.

Richard E. Schuler
Professor Emeritus of Economics and Civil /Environmental Engineering at Cornell University and former New York State Public Service Commissioner and Deputy Chairman.

Stephen G. Whitley
President and CEO of the New York Independent System Operator.

From left to right standing: *Michael Bemis, Alfred Boschulte, Robert Hiney, Karen Antion, Richard Schuler, Ave Bie*

From left to right seated: *James Mahoney, Thomas Ryan, Erland Kailbourne, Stephen Whitley*

2009 Corporate Officers

Stephen Whitley, *President and CEO*

Wayne Bailey,*Vice President, Enterprise Services and Chief Compliance Officer*

Henry Chao,*Vice President, System and Resource Planning*

Richard Dewey, *Vice President and Chief Information Officer*

Diane Egan, *Corporate Secretary and Board Secretary*

Robert Fernandez, *General Counsel*

Rick Gonzales, *Vice President, Operations*

Mary McGarvey, *Vice President and Chief Financial Officer*

Rana Mukerji, *Vice President, Market Structures*

Thomas Rumsey, *Vice President, External Affairs*

2009 Governance Committee Leadership

Management Committee

Bill Palazzo - *Chair*
(New York Power Authority)

Glen McCartney - *Vice Chair,*
(Constellation)

Business Issues Committee

Stuart Nachmias - *Chair*
(Con Edison)

Glen Haake - *Vice Chair*
(Dynegy)

Operating Committee

Ted Pappas - *Chair*
(Long Island Power Authority)

John Marczewski - *Vice Chair*
(EIG)

The NYISO's shared governance system involves representatives from market sectors that include Public Power & Environmental Parties, End-Use Consumers, Transmission Owners, Generation Owners, and Other Suppliers. The governance structure includes three standing committees — the Management Committee, the Business Issues Committee, and the Operating Committee. Each committee oversees its own set of working groups and/or subcommittees.

Market Participants

330 Fund I, L.P.
330 Investment Management, LLC
3M Tonawanda
AB Energy NY, Pty.Ltd.
Absolute Energy Inc.
Accent Energy Midwest II LLC
Accent Energy Midwest LLC
Ace Energy Company, Inc.
AES Eastern Energy LP
Affordable Power, L.P.
AG Energy, L.P.
Agway Energy Services, LLC
Aleph One, Inc.
Amber Power, LLC
Ambit New York, LLC
American Utility Consultants
Amerinco, LLC
Amherst Utility Cooperative (AUC)
Astoria Energy LLC
Astoria Generating Company L.P.
Athens Generating Company, L.P.
Atlantic Energy Services, Inc.
August Power, LLC
Automated Energy, Inc.
Axon Energy, LLC
Bank of America, N.A.
Barclays Bank PLC
BG Energy Merchants, LLC
BJ Energy LLC
Black Oak Energy LLC
Blue Rock Energy, Inc.
BluePoint Energy
BNP Paribas Energy Trading GP
Boralex Hydro Operations Inc
Boralex New York LP
BP Energy Company
Brookfield Energy Marketing Inc.
Brookfield Renewable Energy Marketing US LLC
Brown's Energy Services LLC
Bruce Power Inc.
Calpine Energy Services LP
Cambridge Valley Enterprises LLC
Canandaigua Power Partners, LLC
Canastota Windpower LLC
Cargill Power Markets, LLC
Carr Street Generating Station LP
Castleton Power, LLC
Catskill Mts.Energy Corp.
CBA Endeavors, LLC
CBK Group, LTD
CECONY-LSE
Centaurus Energy Master Fund, LP
Central Hudson Gas & Electric Corp.
Central Vermont Public Service Corp.
Citadel Energy Investments Ltd.
Citadel Energy Strategies LLC
Citigroup Energy Inc.
City of Niagara Falls
City Power Marketing, LLC
Clearview Electric, Inc.
Columbia Utilities Power, LLC
Commerce Energy, Inc.
Con Edison Solutions, Inc.
Conectiv Energy Supply, Inc.
ConocoPhillips Company
Conservation Services Group
Consolidated Edison Co. of New York, Inc.
Consolidated Edison Energy, Inc.
Consolidated Hydro New York, Inc.
Constellation Energy Commodities Group, Inc.
Constellation NewEnergy, Inc.
Core Equities, Inc.
County Energy Services, LLC
County of Erie NY
County of Niagara NY
Covanta Niagara, LP
CP Energy Marketing (US) Inc.
CPower, Inc.
Credit Suisse (USA) Inc.
Credit Suisse Energy LLC
Crucible Specialty Metals
Cummins Inc
Cutone & Company Consultants, LLC
DART Premiums
David Sholk, LLC
Day Automation Systems, Inc.
DB Energy Trading LLC
DC Energy LLC
DC Energy New England, LLC
DC Energy New York, LLC
Delaware County Electric Cooperative, Inc.
Demand Response Partners, Inc.
Direct Energy Marketing Inc

Market Participants

Direct Energy Services, LLC
Discount Energy LLC
Dominion Retail, Inc.
drop18 Energy
DTE Energy Trading Inc
Dynamis ETF, LLC
Dynegy Power Marketing, Inc.
East Coast Power, LLC
EDF Trading North America, LLC
Edison Mission Marketing & Trading, Inc.
E-Energy, Inc.
eKapital NY, LLC
Emera Energy Services Subsidiary No. 1, LLC
Emera Energy Services, Inc
Emera Energy U.S. Subsidiary No. 1, Inc.
Emera Energy U.S. Subsidiary No. 2, Inc.
Empire Generating Co, LLC
Empire Natural Gas Corp.
Empire Power Systems LLC
Endure Energy, L.L.C.
Energetix, Inc.
Energy Connect, Inc.
Energy Conservation and Supply, Inc.
Energy Cooperative of America, Inc d/b/a Energy Cooperative of New York
Energy Curtailment Specialists, Inc.
Energy Enterprises Inc.
Energy Investment Systems, Inc
Energy Plus Holdings LLC
Energy Services Providers, Inc d/b/a U.S.Gas & Electric
Energy Solutions Group LLC
Energy Spectrum Inc.
Energy Systems North East LLC
EnerNOC, Inc.
Enerwise Global Technologies, Inc.
Engage Networks, Inc.
Entergy Nuclear Power Marketing LLC
Entergy Solutions LLC
EPIC Merchant Energy NY, L.P.
Erie Boulevard Hydropower LP
Exelon Generation Company LLC
FC Energy Services Company, LLC
First Commodities Ltd.
FirstLight Power Resources Management, LLC
Flat Rock Windpower II LLC
Flat Rock Windpower LLC
Fortis Ontario Inc
Franklin Power LLC
Freeport Electric
Fulcrum Power Marketing, LLC
Galt Power Inc.
Gateway Energy Services Corporation
Gemsys LLC
General Electric Plastics
Glacial Energy New York, Inc.
Glens Falls Lehigh Cement Company
Good Energy, L.P.
Gotham Energy Marketing, LP
Grant Energy, Inc.
Green Mountain Energy Company
Grunwald Fund
Hampshire Paper Co., Inc.
Hess Corporation
Horizon Power, Inc.
HQ Energy Services (US)
HSBC Bank USA
Hudson Energy Services, LLC
Hudson Valley Trading Group, Inc.
IDT Energy, Inc
Indeck Energy Svs of Silver Springs
Indeck-Corinth LP
Indeck-Olean LP
Indeck-Oswego LP
Indeck-Yerkes LP
Innovative Energy Systems, Inc.
Innoventive Power LLC
Integrys Energy Services of New York, Inc.
Integrys Energy Services, Inc.
International Paper Company
International Renewables Group, LLC
ISO Trader, LLC
J Aron and Company
J. P. Morgan Ventures Energy Corporation
Jamestown Board of Public Utilities
Jump Power, LLC
Just Energy New York Corp
Kaleida Health
KeySpan - Ravenswood, Inc.
Keystone Energy Partners, LP
KeyTex Energy LLC
Koch Supply & Trading, LP

Market Participants

KW Control Systems Inc.
Laissez Faire Enterprises, LLC
Lavand and Lodge, LLC
Liberty Power Holdings LLC
Lighthouse Energy Trading Co., Inc.
Linde Energy Services, Inc.
Lockport Energy Assoc.
Long Island Power Authority
Louis Dreyfus Energy Services L.P.
Lynx Technologies Inc.
Lyonsdale Biomass, LLC
Macquaire Energy LLC
Madison Windpower, LLC
MAG Energy Solutions Inc.
Major Energy Electric Services, LLC
Merrill Lynch Commodities, Inc.
MG Industries
Mirabito Gas & Electric Inc.
Mirant Energy Trading, LLC
MM Albany Energy LLC
Model City Energy LLC
Modern Innovative Energy, LLC
Monroe County NY
Morgan Stanley Capital Group, Inc.
Morgan Stanley Management Services II, Inc
MxEnergy Electric Inc
Nationwide Energy, LLC
New York Industrial Energy Buyers, LLC
New York Municipal Power Agency
New York Power Authority
New York State Electric & Gas Corp.
NextEra Energy Power Marketing, LLC
Niagara Frontier Transportation Authority
Niagara Generation, LLC
Niagara Mohawk Power Corp.
Niagara University
Niagara Wind Power, LLC
Nine Mile Point Nuclear Station, LLC
Nissequogue Cogen Partners
Noble Altona Windpark, LLC
Noble Bliss Windpark, LLC
Noble Chateaugay Windpark, LLC
Noble Clinton Windpark I, LLC
Noble Ellenburg Windpark, LLC
Noble Wethersfield Windpark LLC
NOCO Electric LLC
North American Power Partners LLC
Northbrook New York LLC
Northeast Utilites Service Co.
Northern States Power Company
NorthPoint Energy Solutions Inc.
NRG Power Marketing LLC
NuEnerGen, LLC
NYSEG Solutions, Inc.
Oasis Power, LLC d/b/a Oasis Energy
Occidental Chemical Corp.
Occidental Power Services Inc
Ocean Power LLC
Olin Chlor - Alkali Products
Ontario Power Generation Energy Trading, Inc.
Ontario Power Generation, Inc.
Orange & Rockland Utilities, Inc.
ORU-LSE
Pacific Summit Energy LLC
Peoples Energy Services Corp.
Pepco Energy Services
Petra Technical Consultant Group, LLC
Pine Bush Energy Trading, LLC
Pirin Solutions, Inc
Plant-E Corp.
Power Biddiing Strategies, LLC
Power City Partners, L.P.
Power G Inc
Powerex Corporation
PP&L EnergyPlus Co. (EPLUS)
PPM Energy, Inc.
Praxair Inc
Pro-Energy Development LLC
Project Orange Associates, L.P.
PSEG Energy Resource & Trade, LLC
Public Energy Solutions, LLC
Public Power & Utility of NY, Inc.
Pure Energy Inc
R.E. Ginna Nuclear Power Plant, LLC
Rainbow Energy Marketing Corp
RBC Energy Services LP
RedGreen288, LLC
Reliable Power Management, Inc.
Rensselaer Cogeneration LLC
Riverbay Corporation
Robison Energy, LLC
Rochester Gas & Electric Corp.
Royal Bank of Canada
RTP Controls, Inc
Sanctorum Energy Inc.
Saracen Energy Power Trading LP

Market Participants

Saracen Power LP
Saranac Power Partners, L.P.
Schools & Municipal Energy Cooperative (SMEC)
Select Energy, Inc.
Selkirk Cogen Partners, L.P.
Sempra Energy Solutions
Sempra Energy Trading LLC
Seneca Energy II, LLC
Seneca Power Partners, L.P.
SESCO Enterprises LLC
Sheldon Energy LLC
Shell Energy North America (US), L.P.
SIG Energy, LLLP
Silverhill Ltd., GP for Power Fund LPs.
Site Controls LLC
Sithe Independence Power Partners L.P.
Sol Energy, LLC
Solios Power LLC
South Jersey Energy Company
Spark Energy, L.P.
Spartan Electricity Futures, Inc
Specialized Energy Services, Inc.
Standard Binghamton LLC
StatArb Investment LLC
State of New York
State University of New York
State University of New York at Buffalo
Sterling Power Partners, L.P.
Strategic Energy, LLC
Suez Energy Marketing NA, Inc
Suez Energy Resources NA, Inc
SUNY Potsdam
Swiftwater Energy Trading, LLC
Tallgrass Energy Partners, LLC
Tarachand Enterprises, Inc.
TC Ravenswood, LLC
Telemagine, Inc.
Texas Retail Energy, LLC
The Dayton Power and Light Company
Time Warner Inc.
Tops Markets, Inc.
TransAlta Energy Marketing (U.S.) Inc.
TransCanada Power Marketing, Ltd.
Trigen-Syracuse Energy Corp.
Triton Power Company
Twin Cities Energy, LLC
Twin Cities Power, LLC
U.S. Energy Partners LLC
UGI Energy Services, Inc
University of Rochester
Upstate Energy Trading Inc
VC Marketing Inc
Velocity American Energy Master I, L.P.
Verisae, Inc
Village of Hilton
Village of Rockville Centre
Virtual Energy LLC
Watchtower Bible and Tract Society of New York, Inc.
West Oaks Energy NY/NE, LP
Western New York Wind Corp.
Wheelabrator Westchester, L.P.
Windy Bay Power, LLC

I certify that:

1. I have reviewed this report of the NYISO for the year ended December 31, 2009;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the NYISO as of, and for, the periods presented in this report;
4. The NYISO's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for NYISO and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the NYISO is made known to us by others within the NYISO, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the NYISO's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the NYISO's internal control over financial reporting that occurred during the NYISO's most recent fiscal quarter (the NYISO's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the NYISO's internal control over financial reporting; and
5. The NYISO's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the NYISO's auditors and the audit committee of NYISO's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the NYISO's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the NYISO's internal control over financial reporting.

Disclosure Controls and Procedures

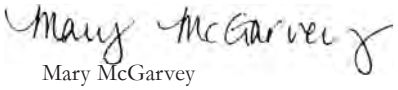
Under the supervision and with the participation of our management, including the Chief Executive Officer and the Chief Financial Officer, we have evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2009. The reporting process is designed to ensure that information required to be disclosed by the NYISO is recorded, processed, summarized and reported within the appropriate time periods. Based on that evaluation, we have concluded that the NYISO disclosure controls and procedures are functioning effectively to provide reasonable assurance that the NYISO can meet its disclosure obligations.

Management's Report of Internal Control over Financial Reporting

We have evaluated any change in our internal control over financial reporting that occurred during the fourth quarter of 2009, and have concluded that there was no change during the fourth quarter of 2009 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Date: March 17, 2010

Stephen G. Whitley
President & Chief Executive Officer



Mary McGarvey
Vice President & Chief Financial Officer

KPMG LLP
515 Broadway
Albany, NY 12207

INDEPENDENT AUDITORS' REPORT

The Board of Directors
New York Independent System Operator, Inc.:

We have audited the accompanying statements of financial position of New York Independent System Operator, Inc. (NYISO or the Company) as of December 31, 2009 and 2008, and the related statements of activities and statements of cash flows for the years then ended. These financial statements are the responsibility of NYISO's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the NYISO's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements present fairly, in all material respects, the financial position of NYISO as of December 31, 2009 and 2008, and the results of its operations and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

As discussed in note 1 to the financial statements, effective January 1, 2008, NYISO adopted the Financial Accounting Standards Board's (FASB) Accounting Standards Codification (ASC) 820, *Fair Value Measurements*, related to the fair value measurements of financial assets and financial liabilities.

KPMG LLP

March 17, 2010

STATEMENTS OF FINANCIAL POSITION
DECEMBER 31, 2009 AND 2008

		2009	2008
Assets			
Current assets:			
Cash and cash equivalents	$	53,582,089	56,529,694
Restricted cash		371,162,251	285,476,866
Accounts receivable – net (note 2)		12,799,522	16,206,343
Prepaid expenses		4,180,713	6,051,561
Regulatory assets – current portion (note 3)		5,469,179	—
Other current assets		580,800	3,166
Total current assets		447,774,554	364,267,630
Noncurrent assets:			
Regulatory assets (note 3)		10,555,399	11,604,891
Property and equipment – net (note 4)		57,174,512	55,991,406
Other noncurrent assets		6,870,581	13,760,670
Total noncurrent assets		74,600,492	81,356,967
Total	$	522,375,046	445,624,597
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	$	23,633,450	16,331,310
Market participant prepayments		24,982,564	15,238,741
Market participant security deposits		341,578,621	263,728,426
Long-term debt – current portion (note 6)		21,342,581	19,696,570
Working capital reserve (note 10)		46,543,644	48,941,193
Deferred revenue (note 11)		3,243,681	4,556,769
Regulatory liabilities – current portion (note 12)		1,074,704	10,281,089
Other current liabilities		3,996,295	1,589,811
Total current liabilities		466,395,540	380,363,909
Noncurrent liabilities:			
Accrued pension liability (note 8)		4,084,576	6,506,665
Accrued postretirement liability (note 8)		5,900,528	5,616,569
Regulatory liabilities (note 12)		3,905,605	2,857,999
Other noncurrent liabilities (notes 7 and 8)		3,919,451	9,067,528
Long-term debt (note 6)		38,169,346	41,211,927
Total noncurrent liabilities		55,979,506	65,260,688
Commitments and contingencies (note 13)			
Total liabilities		522,375,046	445,624,597
Unrestricted net assets		—	—
Total liabilities and net assets	$	522,375,046	445,624,597

See accompanying notes to financial statements.

STATEMENTS OF ACTIVITIES
YEARS ENDED DECEMBER 31, 2009 AND 2008

		2009	2008
Revenues:			
Rate Schedule 1 tariff charge	$	135,410,542	140,644,871
Interconnection studies revenue		2,928,825	1,807,610
Fees and services		883,788	749,849
Interest income		49,863	1,488,580
Total revenues		139,273,018	144,690,910
Operating expenses:			
Compensation and related benefits (note 8)		57,429,618	53,124,882
Professional fees and consultants		26,742,719	29,396,356
Maintenance, software licenses and facility costs		17,993,618	15,461,573
Depreciation and amortization		16,712,438	16,803,549
Federal Energy Regulatory Commission fees		9,980,421	8,854,182
Telecommunication expenses		3,531,688	3,981,689
Administrative and other expenses		3,148,969	2,753,913
Interest expense		3,131,547	3,568,235
Insurance expense		2,801,008	2,860,053
Training, travel, and meeting expenses		1,256,716	1,975,850
Northeast Power Coordinating Council fees		251,976	161,929
Change in fair value of interest rate swaps and caps		(3,707,700)	5,748,699
Total operating expenses		139,273,018	144,690,910
Change in unrestricted net assets		—	—
Unrestricted net assets, beginning of year		—	—
Unrestricted net assets, end of year	$	—	—

See accompanying notes to financial statements.

STATEMENTS OF CASH FLOWS
YEARS ENDED DECEMBER 31, 2009 AND 2008

		2009	2008
Cash flows from operating activities:			
Net results of activities	$	—	—
Adjustments to reconcile net results of activities to net cash provided by operating activities			
Depreciation and amortization		16,712,438	16,803,549
Loss on disposal of fixed asset		—	35,242
Change in operating assets and liabilities:			
Decrease (increase) in accounts receivable and prepaid expenses		5,277,669	(4,252,578)
Increase in restricted cash		(85,685,385)	(8,463,962)
Increase in regulatory assets		(4,419,687)	(2,769,915)
Decrease in other assets		6,312,455	2,100,716
Increase in accounts payable and accrued expenses		3,013,317	2,725,298
Increase (decrease) in market participant prepayments		9,743,823	(46,426,604)
Increase in market participant security deposits		77,850,195	53,716,400
Decrease in working capital reserve		(2,397,549)	(2,997,679)
(Decrease) increase in regulatory liabilities		(8,158,779)	4,926,098
(Decrease) increase in deferred revenue and other liabilities		(6,192,811)	10,320,450
Net cash provided by operating activities		12,055,686	25,717,015
Cash flows from investing activities:			
Acquisition of property and equipment (including capitalized interest)		(13,606,721)	(17,088,126)
Proceeds from sale of assets		—	9,000
Net cash used in investing activities		(13,606,721)	(17,079,126)
Cash flows from financing activities:			
Proceeds from 2007 – 2010 budget facility loan		18,300,000	16,700,000
Repayment of mortgage and renovations loan		(753,903)	(311,642)
Repayment of 2004 – 2006 budget facility loan		(8,376,000)	(18,876,000)
Repayment of 2007 – 2010 budget facility loan		(10,566,667)	(5,000,000)
Net cash used in financing activities		(1,396,570)	(7,487,642)
Net (decrease) increase in cash and cash equivalents		(2,947,605)	1,150,247
Cash and cash equivalents – beginning of year		56,529,694	55,379,447
Cash and cash equivalents – end of year	$	53,582,089	56,529,694
Supplemental disclosure of cash flow:			
Information – cash paid during the year for interest net of capitalized interest	$	2,948,240	3,354,557
Noncash investing activities:			
Property and equipment additions which were accrued but not paid	$	4,820,759	531,936
Property and equipment additions previously accrued which were paid		531,936	1,448,615

See accompanying notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

(1) **Summary of Significant Accounting Policies**

(a) Business Description

The New York Independent System Operator, Inc. (NYISO) was formed in April 1997 and commenced operations on December 1, 1999. NYISO is incorporated in the state of New York as a not-for-profit organization. NYISO assumed the responsibilities of its predecessor, the New York Power Pool (NYPP), which had coordinated the reliability of New York State's electric power grid for more than 30 years. Formed as a result of Federal Energy Regulatory Commission (FERC) policies, NYISO monitors a network of 10,892 miles of high-voltage transmission lines and serves approximately 400 market participants.

NYISO's mission, in collaboration with its stakeholders, is to serve the public interest by maintaining and enhancing the reliable, safe, and efficient operation of the New York State transmission system and promoting and operating a fair and competitive wholesale market for electricity in New York State while providing quality customer service. NYISO facilitates fair and open competition in the wholesale power market and creates an electricity commodity market in which power is purchased and sold on the basis of competitive bidding. NYISO utilizes a bid process for electricity and transmission usage, which enables New York State's utilities and other market participants to offer electricity at competitive prices, rather than regulated rates. Billing invoices are issued to each market participant by NYISO each month to settle transactions occurring in the previous month.

NYISO is governed by an independent board of directors, as well as a committee structure consisting of market participant representatives. In addition to FERC oversight, NYISO is also subject to regulation in certain aspects by the New York State Department of Public Service.

(b) Basis of Accounting

The accompanying financial statements have been prepared on an accrual basis of accounting in accordance with U.S. generally accepted accounting principles.

(c) Regulation

NYISO's financial statements are prepared in accordance with generally accepted accounting principles for rate-regulated entities, FASB ASC Topic 980, *Regulated Operations*. As such, regulators may permit specific incurred costs, typically treated as expenses by unregulated entities, to be deferred and expensed in future periods when it is probable that such costs will be recovered in customer rates. Incurred costs are deferred as regulatory assets when NYISO concludes that it is probable future revenues will be provided to permit recovery of the previously incurred cost. A regulatory liability is recorded when amounts that have been recorded by NYISO are likely to be refunded to customers through the rate-setting process.

(d) Revenue Recognition

Monthly settlements of market participants' energy transactions are not reflected in NYISO's Statements of Activities since they do not represent revenues or expenses of NYISO, as NYISO merely acts as an intermediary in the settlement process. In this role, NYISO receives and disburses funds to/from market participants in the month following the month transactions occurred.

NYISO's two FERC-approved tariffs, the Open Access Transmission Tariff (OATT) and the Market Administration and Control Area Services Tariff (Services Tariff), allow recovery of NYISO's capital requirements and operating expenses through a surcharge assessed to market participants. The revenue from this surcharge, Rate Schedule 1, is earned when energy is scheduled and dispatched. Market participants are then billed for such charges in the subsequent month.

NYISO's Rate Schedule 1 includes a timing mechanism that effectively meets the requirements of an alternative revenue program set forth in ASC Topic 980, *Regulated Operations*, Subtopic 602, *Revenue Recognition*. Accordingly, revenue is recognized for net financing obligations and capital costs incurred during the reporting period based on the revenue requirement formula in the tariffs. NYISO has recorded an Other Noncurrent Asset of $2,337,415 and $4,917,092, respectively, in the accompanying 2009 and 2008 Statements of Financial Position in connection with this rate-making recovery mechanism.

Revenues recorded as interconnection studies revenues arise from billing and collection services in the interconnection service agreement process performed by NYISO. These revenues are offset by the corresponding interconnection expenses, recorded in operating expenses, which were incurred in performing such studies.

(e) Cash and Cash Equivalents

NYISO considers short-term marketable securities with original maturities of three months or less to be cash equivalents. The cash equivalents at December 31, 2009 and 2008 were held in money market accounts invested primarily in shortterm U.S. government obligations. NYISO's cash and cash equivalents consist primarily of funds accumulated for the working capital reserve, amounts due to market participants for overcollections on the voltage market, amounts collected for Transmission Congestion Contract (TCC) auctions, amounts for funding employee benefit plans, and for general operating purposes.

(f) Restricted Cash

Restricted cash consists primarily of market participant security deposits held in escrow accounts, amounts prepaid by market participants in advance of settlements billing dates, and amounts deposited for interconnection studies. Security deposits are invested at the market participant's choice in money market funds or short- or intermediate-term bond funds. NYISO presents changes in restricted cash in the operating activities section of the statements of cash flows instead of in the investing activities section. NYISO has determined that this classification is more suitable to the nature of the Company's operations.

(g) Other Assets

Other assets consist primarily of timing differences on certain rate-making recoveries, the fair value of interest rate cap and swap agreements, noncurrent prepaid expenses, and miscellaneous receivables.

(h) Property and Equipment

Property and equipment are recorded at cost. NYISO capitalizes property and equipment additions in excess of $5,000 with a useful life greater than one year. Depreciation is computed on the straight-line method over the assets' estimated useful lives of three to five years, except for building and building improvements, which are depreciated on a straight-line basis over 20 years. When assets are retired or otherwise disposed of, the cost and related depreciation are removed, and any resulting gain or loss is reflected in expense for the period. Repairs and maintenance costs are charged to expense when incurred.

In accordance with ASC topic 350, *Intangibles – Goodwill and Other*, Subtopic 40, *Internal Use Software*, labor, overhead, interest, consulting, and related costs incurred to acquire and develop computer software for internal use are capitalized and amortized using the straight-line method over three years. Costs incurred prior to the determination of feasibility of developed software and following the in-service date of developed software are expensed.

Long-lived assets are recorded at cost, and are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be recoverable. Management is not aware of any events or changes in circumstances that would necessitate a review of any long-lived assets as of the years ended December 31, 2009 and 2008.

(i) Working Capital Reserve

In order to maintain the liquidity and stability of NYISO's markets, NYISO has accumulated a working capital fund through amounts charged to market participants under Rate Schedule 1. Any additional working capital needs would be billed to market participants in future Rate Schedule 1 charges. Market participants are entitled to interest on their principal contributions to the working capital reserve. Each market participant is allocated interest based on the respective ratio share of each market participant's principal contributions to the total working capital fund. Accumulated interest on the working capital fund is distributed annually to market participants.

(j) Market Participant Prepayments

Amounts received from certain market participants who do not provide an alternate form of financial assurance and must prepay their obligations to NYISO in advance of settlements billing dates are recorded as market participant prepayments.

(k) Deferred Revenue

Advance payments from developers for interconnection studies are reflected as deferred revenue. Fees for participation in NYISO's governance process are billed to market participants in advance of the year for which they apply and are amortized over the related governance period. All such unamortized amounts are also included in deferred revenue.

(l) Income Taxes

NYISO is not subject to income taxes because it is operating as a corporation described in Section 501(c)(3) of the Internal Revenue Code, exempt under Section 501(a) of the Internal Revenue Code. NYISO is also exempt from paying New York State income tax or sales tax.

(m) Fair Value of Financial Instruments

On January 1, 2008, NYISO adopted the provisions of FASB Statement No. 157, *Fair Value Measurements*, included in ASC Topic 820, *Fair Value Measurements and Disclosures*, for fair value measurements of financial assets and financial liabilities. Statement 157 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC Topic 820 (SFAS No. 157) also establishes a framework for measuring fair value and expands disclosures about fair value measurements.

On January 1, 2009, NYISO adopted the provisions of ASC Topic 820 (SFAS No. 157) to fair value measurements of nonfinancial assets and nonfinancial liabilities that are recognized or disclosed at fair value in the financial statements on a nonrecurring basis. The adoption of these provisions did not have any effect on NYISO's financial statements.

ASC Topic 820 (SFAS No. 157) establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The three levels of the fair value hierarchy are as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that NYISO has the ability to access at the measurement date.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs for the asset or liability.

The level in the fair value hierarchy within which a fair measurement in its entirety falls is based on the lowest level input that is significant to the fair value measurement in its entirety.

The fair value of NYISO's interest rate swaps and caps are determined using pricing models developed based on the LIBOR swap rate and other observable market data (Level 2 inputs).

The following table presents the carrying amounts and estimated fair values of NYISO's financial instruments at December 31, 2009 and 2008:

	2009		2008	
	Carrying Amount	**Fair Value**	**Carrying amount**	**Fair Value**
Financial assets:				
Interest rate caps	$ 291	291	2,075	2,075
Financial liabilities:				
Interest rate swaps	$ 3,919,451	3,919,451	7,428,686	7,428,696

Interest rate caps are included in other current assets and the interest rate swaps are included in noncurrent liabilities.

Effective January 1, 2008, NYISO adopted the Fair Value Option provisions of the Subsections of ASC Subtopic 825-10, *Financial Instruments – Overall*, included in FASB Statement No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities*. ASC Subtopic 825-10 (SFAS No. 159) permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reported earnings caused by measuring related assets and liabilities

differently without having to apply complex hedge accounting provisions. This Statement is expected to expand the use of fair value measurement, which is consistent with the FASB's long-term measurement objectives for accounting for financial instruments. The adoption of ASC Subtopic 825-10 (SFAS No. 159) in 2008 did not have any effect on NYISO's financial statements.

(n) Concentration of Credit Risk

Financial instruments that subject NYISO to credit risk consist primarily of market settlement billings and Rate Schedule 1 revenue due from market participants. As provided in the OATT and Services Tariff, NYISO reviews the creditworthiness of market participants, who are required to either maintain certain financial statement criteria and/or approved credit ratings, to post specified financial security in an amount sufficient to cover their outstanding liability to NYISO, or to prepay their obligations in advance of settlement billing dates.

NYISO's tariffs establish specific periods for the adjustment of settlement invoices as originally billed and for challenges to amounts billed for a particular service month. Subsequent invoices issued during the settlement adjustment period "true up" amounts previously billed. After all true-up invoices are issued during the settlement adjustment period, market participants may challenge the amounts billed for a particular service month. If NYISO agrees with the provisions of the challenge, a final invoice is issued for that service month. As a result, NYISO is exposed to credit risk until all settlement adjustment and final invoices for each service month are finalized and liquidated. However, Rate Schedule 1 of the OATT allows NYISO to recover bad debt losses from remaining market participants in future billings.

Beginning with the January 2007 settlement invoice, settlement invoices could be adjusted for up to six months after the date of original issuance, and these invoices could be challenged for an additional one month after the issuance of all settlement adjustment invoices. Beginning with the January 2009 settlement invoice, the adjustment period has been shortened to four months. As of December 31, 2009, the adjustments and true-ups of all settlement invoices through March 2009 were completed.

(o) Derivative Financial Instruments

NYISO records derivative financial instruments in accordance with ASC Topic 815, *Derivatives and Hedging*. ASC Topic 815 requires that all derivative financial instruments be recognized as either assets or liabilities, measured at fair value. The accounting for changes in fair value of derivatives (i.e., gains and losses) depends on the intended use of the derivative and the corresponding designation. The fair values of NYISO's derivative instruments are quoted by external sources. The changes in the fair value of these derivatives are recorded as change in fair value of interest rate swaps and caps. Due to NYISO's regulated rates, the offset to the changes in fair value of these derivatives is recorded as either other current assets or other noncurrent assets. See additional details in note 7.

(p) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant items subject to such estimates and assumptions include the useful lives of fixed assets, regulatory assets, the valuation of derivatives, compensation, and liabilities for employee benefit obligations.

(q) Reclassifications

Certain reclassifications of prior period data have been made to conform with the current-year presentation.

(r) New Accounting Pronouncements

In June 2009, the FASB issued Statement of Financial Accounting Standards (SFAS) No. 168, *FASB Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles* (SFAS 168), which replaces SFAS No. 162, *The Hierarchy of Generally Accepted Accounting Principles*. FASB Statement No. 168 modifies U.S. GAAP by establishing two levels of GAAP, authoritative and nonauthoritative, in contrast with the levels of GAAP that existed prior to SFAS 168. The FASB accomplished this change in the GAAP hierarchy by authorizing the FASB Accounting Standards Codification (ASC or Codification) to become the single source of authoritative, nongovernmental U.S. GAAP. The Codification brings together in one place the authoritative accounting standards that currently exist in a number of

formats including FASB Statements and Interpretations, Emerging Issues Task Force Abstracts, FASB Staff Positions, and American Institute of Certified Public Accountants (AICPA) Statements of Positions and Accounting and Auditing Guides. All other nongrandfathered accounting literature not included in the Codification will become nonauthoritative. The Codification is effective for financial statements issued for annual periods ending after September 15, 2009. As the Codification was not intended to change or alter existing GAAP, it did not have any impact on NYISO's financial statements.

In March 2008, the FASB issued SFAS No. 161, *Disclosures about Derivative Instruments and Hedging Activities* (SFAS No. 161), updating ASC Topic 812. SFAS No. 161 amends ASC Topic 815, requiring enhanced disclosures about an entity's derivative and hedging activities thereby improving the transparency of financial reporting. SFAS No. 161's disclosures provide additional information on how and why derivative instruments are being used. This statement is effective for financial statements issued for fiscal years beginning after November 15, 2008, with early application encouraged. NYISO adopted the provisions of SFAS No. 161 in 2009.

In 2009, the FASB issued Financial Accounting Standards Board (FASB) Statement of Position 481 a definition of FASB Interpretation No. 48, *Accounting for Uncertainty in Income Taxes – An Interpretation of FAS 109* (FIN 48), amending ASC Topic 740, *Income Taxes*. FIN 48 clarifies the accounting for uncertainty in income tax recognized in an entity's financial statements. FIN 48 requires entities to determine whether it is more likely than not that a tax position will be sustained upon examination by the appropriate taxing authorities before any part of the benefit can be recorded in the financial statements. It also provides guidance on the recognition, measurement, and classification of income tax uncertainties, along with any related interest or penalties. A tax position is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon settlement. The adoption of FIN 48 in 2009 did not have any effect on NYISO's financial statements.

(2) **Accounts Receivable**

NYISO's accounts receivable at December 31, 2009 and 2008, consisted of the following:

		2009	2008
Billed:			
Past due settlement invoices	$	1,081,672	5,068,261
Miscellaneous billed receivables		289,097	368,076
Reserve for doubtful accounts – past due settlement invoices		(1,072,539)	(1,134,187)
		298,230	4,302,150
Unbilled:			
Operating expenses for December		11,928,715	11,538,473
Miscellaneous unbilled receivables		546,368	339,511
Bad debt losses recoverable from market participants		25,903	25,903
Replenishments of working capital reserve		306	306
		12,501,292	11,904,193
Total	$	12,799,522	16,206,343

Rate Schedule 1 of the OATT allows NYISO to recover bad debt losses from market participants and provides guidance on the provisions of such recoveries. NYISO's reserve for doubtful accounts at December 31, 2009 and 2008, results primarily from past due settlement invoices related to a subsidiary of Enron Corporation. As of December 31, 2009 and 2008, NYISO recorded unbilled receivables of $25,903 to reflect amounts yet to be recovered from remaining market participants in connection with other bad debt losses.

NYISO recovers its operating expenses via Rate Schedule 1 in the month following the month of service. Therefore, the unbilled operating expenses for December are billed and recovered in January of the subsequent year.

Unbilled replenishments of working capital reserve relate to amounts recoverable from market participants via future Rate Schedule 1 charges to recover amounts temporarily utilized by NYISO out of the working capital reserve.

(3) **Regulatory Assets**

At December 31, 2009 and 2008, regulatory assets were comprised of the following:

		2009	2008
Deferred pension plan asset	$	8,127,363	9,527,335
Voltage support service (reactive power) market		5,469,179	—
Funding for deferred charges		2,428,036	1,710,636
Deferred postretirement plan asset		—	366,920
Total		16,024,578	11,604,891
Less current portion		(5,469,179)	—
Long-term portion	$	10,555,399	11,604,891

In order to maintain acceptable transmission voltages on the New York State transmission system, certain market participants within the New York Control Area produce or absorb voltage support service (reactive power). Payments to market participants supplying voltage support service and recoveries from other market participants are assessed via Rate Schedule 2 of the OATT and Services Tariff. Differences between the timing of recoveries and payments for voltage support service that result in under collections are reflected as regulatory assets. At December 31, 2009 and 2008, respectively, NYISO recognized a regulatory asset of $5,469,179 and a regulatory liability of $2,314,198 related to such timing differences.

ASC Topic 715 requires an employer to recognize the overfunded or underfunded status of a defined pension benefit or post-retirement plan (other than a multiemployer plan) as an asset or liability in its statement of financial position and to recognize changes in the funded status in the year in which the changes occur. For NYISO, this recognition creates a deferred noncurrent regulatory asset or liability for accumulated actuarial losses or gains to be recognized in future periods. As of December 31, 2009 and 2008 the amounts were $8,127,363 and $9,527,335, respectively for the defined pension plan and $(25,489) and $366,920, respectively for the defined postretirement plan.

(4) **Property and Equipment**

As of December 31, 2009 and 2008, property and equipment consisted of the following:

		2009	2008
Software developed for internal use	$	99,917,173	88,554,051
Computer hardware and software		59,343,272	55,917,646
Building, building improvements, and leasehold improvements		32,642,392	32,392,758
Work in progress		4,358,910	4,431,779
Machinery and equipment		4,221,036	3,692,980
Furniture and fixtures		2,846,672	2,763,214
Land and land improvements		2,091,376	2,065,571
		205,420,831	189,817,999
Accumulated depreciation and amortization		(148,246,319)	(133,826,593)
Property and equipment – net	$	57,174,512	55,991,406

Property and equipment includes interest of $80,730 and $25,574 capitalized during 2009 and 2008, respectively. Depreciation expense for the years ended December 31, 2009 and 2008 was $16,712,438 and $16,803,549, respectively.

(5) **ShortTerm Debt**

On July 21, 2005, NYISO entered into a $50.0 million Revolving Credit Facility that expires on July 21, 2010. The proceeds from this facility are to be used for working capital purposes. Interest on borrowings under this agreement is based on NYISO's option of varying rates of interest tied to either the prime rate or the London Interbank Offered Rate (LIBOR). At December 31, 2009 and 2008, respectively, there were no amounts outstanding on the Revolving Credit Facility.

(6) **LongTerm Debt**

On March 17, 2004, NYISO entered into an unsecured $100.0 million line of credit facility (2004 – 2006 Budget Facility), the proceeds of which could be drawn until December 2006 to fund the development of significant information technology projects during 2004 through 2006, with principal repayments made over four years. Interest on borrowings under this facility is due monthly and is based on NYISO's option of varying rates of interest tied to either LIBOR plus 60 basis points for borrowings during the draw period not yet converted to term loans, LIBOR plus 100 basis points for borrowings converted to term loans, or the prime rate. On April 8, 2005, this facility was refinanced to lower the LIBOR interest rate spread to 52.5 basis points for borrowings during the draw period and 80 basis points for borrowings converted to term loans. NYISO entered into interest rate cap agreements on $82.0 million of this debt, which caps the maximum interest rate at 4.60% for borrowings during the draw periods not yet converted to term loans (4.525% after April 8, 2005, refinancing) and 5.00% for borrowings converted to term loans (4.80% after April 8, 2005, refinancing). See additional information in note 7.

At December 31, 2004, $42.0 million was drawn on the 2004 – 2006 Budget Facility, which was converted to a term loan in February 2005 with monthly principal and interest payments payable beginning March 2005. As of December 31, 2008, these borrowings were fully repaid, with $3.1 million representing voluntary prepayments against this debt. At December 31, 2008 the interest rate on these borrowings was at the cap level of 4.8%. During 2005, an additional $18.0 million was drawn on the 2004 – 2006 Budget Facility, which was converted to a term loan in February 2006 with monthly principal and interest payments payable from March 2006 through December 2009. As of December 31, 2009, these borrowings were fully repaid. At December 31, 2008, the interest rate on these borrowings was 2.23%. During 2006, an additional $15.5 million was drawn on the 2004 – 2006 Budget Facility, which was converted to a term loan in March 2007 with monthly principal and interest payments payable through December 2010. At December 31, 2009 and 2008, the interest rate on these borrowings was 1.04% and 2.23%, respectively.

On January 22, 2007, NYISO entered into an unsecured $80 million line of credit facility (2007 – 2010 Budget Facility), the proceeds of which may be drawn until January 2011 to fund capital purchases and the development of significant information technology projects during 2007 – 2010. NYISO must convert each year's annual borrowings to term loans, with principal and interest payments payable over three years. Interest on borrowings under this facility is based on NYISO's option of varying rates of interest tied to either LIBOR plus 40 basis points for borrowings during the draw periods, LIBOR plus 65 basis points for borrowings converted to term loans, or the prime rate. Interest payments on borrowings are due monthly.

On January 23, 2007, NYISO entered into four interest rate swap agreements to fix interest payments on $60 million of the $80 million available on this line of credit facility. Under the swap agreements, NYISO will pay fixed interest rates ranging between 5.392% to 5.515% during the annual borrowing periods and 5.642% to 5.765% on the four annual term loan conversions. See additional information in note 7.

During 2007, $15.0 million was drawn on the 2007 – 2010 Budget Facility, which was converted to a term loan in January 2008 with monthly principal and interest payments payable from January 2008 through December 2010. At December 31, 2009 and 2008, the interest rate on these borrowings was fixed at 5.726%. During 2008, an additional $16.7 million was drawn on the 2007 – 2010 Budget Facility, which was converted to a term loan in January 2009 with monthly principal and interest payments payable from January 2009 through December 2011. At December 31, 2009, the interest rate on $10 million of these borrowings was fixed at 5.642% and the remaining $1.1 million was at 0.885%. At December 31, 2008, the interest rate on $15 million of these borrowings was fixed at 5.392% and the remaining $1.7 million was at 1.831%. During 2009, an additional $18.3 million was drawn on the 2007 – 2010 Budget Facility, which was converted to a term loan in February 2010 with monthly principal and interest payments payable from February 2010 through December 2012. At December 31, 2009, the interest rate on $15 million of these borrowings was fixed at 5.446% and the remaining $3.3 million was at 0.635%.

On July 8, 2005, NYISO entered into two financing agreements to purchase and renovate a 140,000-square foot office building. The first agreement is a $14.7 million mortgage to finance the building purchase (Mortgage), and the second agreement represents a $10.0 million line of credit for renovations during an 18month period, beginning in July 2005 (Renovations Loan).

The Mortgage has principal and interest payments payable over 20 years, beginning September 2005. Principal and interest payments on borrowings made during the Renovations Loan draw period are payable over 20 years, beginning in January 2007. During 2005, $14.7 million was borrowed on the Mortgage, and during 2006, $10.0 million was drawn on the Renovations Loan. Both agreements are secured by liens on the building and subsequent capitalized renovations. Interest on borrowings under both facilities is due monthly and is based on varying rates of interest tied to LIBOR plus 100 basis points. On February 15, 2005, NYISO entered into an interest rate swap agreement on the Mortgage, which fixed the interest rate on this loan at 5.79%. On February 15, 2005, NYISO also entered into an interest rate swap agreement on the Renovations Loan, which fixed the interest rate on these borrowings at 5.96%, beginning on January 1, 2007.

At December 31, 2009, the following amounts were outstanding on NYISO's long-term debt:

		2004 – 2006 Budget Facility loan	2007 – 2010 Budget Facility loan	Mortgage	Renovations	Total
Outstanding balance	$	3,876,000	34,433,334	12,026,321	9,176,272	59,511,927
Less current portion		(3,876,000)	(16,666,667)	(482,901)	(317,013)	(21,342,581)
Long-term portion	$	—	17,766,667	11,543,420	8,859,259	38,169,346

At December 31, 2008, the following amounts were outstanding on NYISO's long-term debt:

		2004 – 2006 Budget Facility loan	2007 – 2010 Budget Facility loan	Mortgage	Renovations	Total
Outstanding balance	$	12,252,000	26,700,000	12,481,756	9,474,741	60,908,497
Less current portion		(8,376,000)	(10,566,667)	(455,434)	(298,469)	(19,696,570)
Long-term portion	$	3,876,000	16,133,333	12,026,322	9,176,272	41,211,927

At December 31, 2009, scheduled maturities of NYISO's long-term debt were as follows:

		2004 – 2006 Budget Facility loan	2007 – 2010 Budget Facility loan	Mortgage	Renovations	Total
2010	$	3,876,000	16,666,667	482,901	317,013	21,342,581
2011		—	11,666,667	512,025	336,709	12,515,401
2012		—	6,100,000	541,065	356,162	6,997,227
2013		—	—	575,536	379,757	955,293
2014		—	—	610,246	403,352	1,013,598
Thereafter		—	—	9,304,548	7,383,279	16,687,827
Total	$	3,876,000	34,433,334	12,026,321	9,176,272	59,511,927

(7) **Derivatives and Hedging Activities**

The fair values of NYISO's derivative instruments, which are freestanding agreements, are quoted by external sources. The changes in the fair value of these derivatives are recorded in change in fair value of interest rate swaps and caps. In December 2003, NYISO entered into an interest rate cap agreement with a commercial bank to cap interest payments at 5.375% (4.65% after refinancing on April 8, 2005) on its 2003 Budget Facility. The notional amount of the debt on the date of the cap agreement was $47,000,000. Under the cap agreement, NYISO pays a variable interest rate tied to LIBOR on the outstanding principal amount of the 2003 Budget Facility from January 2004 through February 2008; however, this variable interest rate cannot exceed 5.375% (4.65% after refinancing). This agreement expired in February 2008. For the year ended December 31, 2008, NYISO recorded interest income of $4,795 related to this derivative instrument.

In March 2004, NYISO entered into interest rate cap agreements with a commercial bank to cap interest payments at 4.60% for draws and 5.00% for term loans (4.525% and 4.80% after refinancing on April 8, 2005) on its 2004 – 2006 Budget Facility. The notional amount of the debt on the date of the cap agreements was $82,000,000. Under the cap agreements, NYISO pays a variable interest rate tied to LIBOR on the draws and term loans of the 2004 – 2006 Budget Facility from March 2005 through December 2010; however, this variable interest rate cannot exceed 4.525% for draws or 4.80% for term loans. As of December 31, 2009 and 2008, the fair value of the interest rate cap was $291 and $2,075, and is recorded in Other Current Assets. For the years ended December 31, 2009 and 2008, NYISO recorded interest income of $198,466 and $187,274, respectively, related to this derivative instrument.

In February 2005, NYISO entered into two interest rate swap agreements with a commercial bank to fix interest rate payments on the financing of a new office building purchase. The notional amount of debt on the swap agreement for the Mortgage was $14,708,750, and NYISO pays a fixed interest rate of 5.79% on the outstanding principal amount of this financing on payments from August 2005 through August 2025. The notional amount of debt on the swap agreement for the Renovations Loan was $10,000,000, and NYISO pays a fixed interest rate of 5.96% on payments from January 2007 through January 2027. As of December 31, 2009 and 2008, the fair value of these interest rate swap agreements was ($924,922) and ($2,375,734) for the Mortgage and ($818,738) and ($2,068,308) for the Renovations Loan, recorded in Other Noncurrent Liabilities. For the years ended December 31, 2009 and 2008, NYISO recorded interest income of $2,700,382 and interest expense of $4,014,234, respectively, related to these two swap agreements.

In January 2007, NYISO entered into four interest rate swap agreements with a commercial bank to fix interest rate payments on the 2007 – 2010 Budget Facility. The notional amount of debt on the swap agreements was $60,000,000. NYISO pays fixed interest rates ranging between 5.392% to 5.515% during the annual borrowing periods and 5.642% to 5.765% on the four annual term loan conversions from March 2007 through December 2013. As of December 31, 2009 and 2008, the fair value of these interest rate swap agreements was ($2,175,791) and ($2,984,644), respectively, recorded in other noncurrent liabilities. For the years ended December 31, 2009 and 2008, NYISO recorded interest income of $808,853 and interest expense of $1,926,534, related to these four swap agreements. Gains and losses on market values are recorded in the statement of activities as change in fair value of interest rate swaps and caps.

	Notional amount at inception	Notional amount at December 31, 2009	Fair value at December 31, 2008	Fair value at December 31, 2009	2009 Loss on market value
Loan:					
2004 – 2006 Budget Facility	$ 82,000,000	3,876,000	2,075	291	(1,784)
2007 – 2010 Budget Facility	60,000,000	30,000,000	(2,984,644)	(2,175,791)	808,853
Mortgage	14,708,750	12,026,321	(2,375,734)	(924,922)	1,450,812
Renovations	10,000,000	9,176,272	(2,068,308)	(818,738)	1,249,570

NYISO is exposed to credit loss in the event of nonperformance by the commercial banks under the interest rate cap and swap agreements. However, NYISO does not anticipate nonperformance by the commercial banks.

(8) **Employee Benefit Plans**

(a) Pension and Postretirement Plans

NYISO has a defined benefit qualified pension plan covering substantially all employees. Plan benefits are based on employee compensation levels and years of service, including service for certain employees previously employed by NYPP member companies. Employees become vested in pension benefits after five years of credited service. Effective January 1, 2008, the vesting period was reduced from five years to three years of credited service to conform to requirements of the Pension Protection Act of 2006. NYISO expects to contribute $1.3 million to the qualified pension plan in 2010. In 2008, NYISO adopted changes to its pension plan to end the accrual of future benefits for most employees, effective December 1, 2009. Certain grandfathered employees will continue to accrue benefits until attaining age 55. NYISO plans to replace the defined benefit accruals with equivalent contributions to employee 401(k) plan accounts after December 1, 2009. As a result of the amendment to stop most accruals for future benefits, NYISO recorded a curtailment gain of $1,368,980 in 2008.

NYISO sponsors a defined benefit postretirement plan to provide medical and life insurance benefits for eligible retirees and their dependents. Substantially all employees who retire from NYISO become eligible for these benefits provided they have been credited with at least five years of NYISO service (10 years of NYISO service for those employees hired on or following January 1, 2005). The benefits are contributory based upon years of service, with NYISO paying up to 50% of costs for retired employees and up to 25% for their dependents (subject to specified dollar limits). Medical coverage becomes secondary upon Medicare eligibility and life insurance coverage is reduced upon reaching age 65.

The schedules that follow show the benefit obligations, the plan assets, and the funded status as of December 31, 2009 and 2008, and the change in benefit obligations for NYISO's qualified pension and postretirement plans for the years ended December 31, 2009 and 2008.

		Pension plan		Postretirement plan	
		2009	2008	2009	2008
Change in benefit obligation:					
Benefit obligation – beginning of year	$	23,144,321	20,985,149	5,809,707	4,688,623
Service cost		1,953,821	1,894,157	485,532	408,135
Interest cost		1,301,037	1,257,442	321,037	281,201
Actuarial (gain) loss		882,665	1,490,415	(412,275)	482,540
Participant contributions		—	—	110,966	96,333
Curtailment		—	(1,368,980)	—	—
Benefits paid		(1,203,116)	(1,113,862)	(180,269)	(147,125)
Benefit obligation – end of year		26,078,728	23,144,321	6,134,698	5,809,707
Change in plan assets:					
Fair value of plan assets – beginning of year		16,637,656	16,637,656	—	—
Actual return on plan assets		3,652,088	(3,621,163)	—	—
Employer contributions		3,035,294	4,500,000	69,303	50,792
Participant contributions		—	—	110,966	96,333
Benefits paid		(1,203,116)	(1,113,862)	(180,269)	(147,125)
Expenses paid		(127,770)	(109,790)	—	—
Fair value of plan assets – end of year		21,994,152	16,637,656	—	—
Funded status	$	(4,084,576)	(6,506,665)	(6,134,698)	(5,809,707)

Amounts recognized in the 2009 and 2008 statements of financial position consist of:

	Pension plan		Postretirement plan	
	2009	2008	2009	2008
Benefit obligation	$ (4,084,576)	(6,506,665)	(6,134,698)	(5,809,707)
Regulatory asset or (liability)	8,127,363	9,527,335	(25,489)	366,920
Projected benefit obligation	$ (26,078,728)	(23,144,321)	(6,134,698)	(5,809,707)
Fair value of assets	21,994,152	16,637,656	—	—
Unfunded projected benefit obligation	$ (4,084,576)	(6,506,665)	(6,134,698)	(5,809,707)

The unfunded projected benefit obligation for the postretirement plan at December 31, 2009 and 2008 is recorded as $234,170 and $193,138, respectively, in other current liabilities and $5,900,528 and $5,616,569, respectively, in accrued postretirement liability.

Amounts recognized in the statements of activities consist of:

	Pension plan		Postretirement plan	
	2009	2008	2009	2008
The components of net periodic pensions and postretirement cost are as follows:				
Service cost	$ 1,953,821	1,894,157	485,532	408,135
Interest cost	1,301,037	1,257,442	321,037	281,201
Recognized loss due to curtailments	—	1,125,270	—	—
Expected return on plan assets	(1,594,489)	(1,347,956)	—	—
Amortization of unrecognized prior service cost	51,424	157,007	—	—
Amortization of unrecognized loss	301,384	162,146	(19,866)	(34,488)
Total	$ 2,013,177	3,248,066	786,703	654,848

NYISO uses a December 31 measurement date for its pension and postretirement benefit plans. NYISO's accumulated benefit obligation for the defined benefit pension plan is $25,110,241 and $21,933,275 at December 31, 2009 and 2008, respectively.

The following table as of December 31, 2009 and 2008, shows the assumptions used to calculate the pension and postretirement benefit obligations and net periodic costs:

	Pension plan		Postretirement plan	
	2009	2008	2009	2008
Benefit obligations:				
Discount rate	5.70%	5.75%	5.95%	5.75%
Rate of compensation increases	4.00	4.00	4.00	4.00
Net cost or credit:				
Discount rate	5.75%	6.29%	5.75%	6.00%
Rate of compensation increases	4.00	4.00	4.00	4.00
Expected return on plan assets	7.75	7.75	N/A	N/A

NYISO's expected rate of return on plan assets reflects anticipated returns on the qualified pension plan's current and future assets. To determine this rate, NYISO considers historical returns for equity and debt securities, as well as current capital market conditions and projected future conditions. NYISO selected an assumed rate of 7.75%, which is lower than the rate otherwise determined solely on historical returns.

The targeted allocation and actual investment mix of the pension plan's assets are as follows:

	Target	December 31	
Category	allocation	2009	2008
Fixed income	40%	39%	46%
International and emerging equities	22	22	19
Large cap equities	22	23	19
Mid cap equities	10	10	8
Small cap equities	6	6	5
Cash equivalents	—	—	3
Total	100%	100%	100%

The actual rate of return for the pension plan's assets as of December 31, 2009 and 2008 were:

	Annual Returns December 31	
Category	2009	2008
Fixed income	9.4%	0.9%
International and emerging equities	19.7	(34.9)
Large cap equities	26.1	(37.3)
Mid cap equities	39.3	(33.4)
Small cap equities	40.7	(36.9)
Cash equivalents	0.1	1.8
Total portfolio	21.3%	(21.2)%

The table below shows the level of input used to determine the fair value of assets:

		Fair value measurements at December 31, 2009			
Category		**Fair value**	**Level 1**	**Level 2**	**Level 3**
Fixed income	$	8,612,178	—	8,612,178	—
International and emerging equities		4,825,000	—	4,825,000	—
Large cap equities		4,996,545	—	4,996,545	—
Mid cap equities		2,229,008	—	2,229,008	—
Small cap equities		1,354,450	—	1,354,450	—
Cash equivalents		(23,029)	—	(23,029)	—
Total	$	21,994,152	—	21,994,152	—

Pursuant to resolutions adopted by NYISO's Board of Directors, NYISO's Retirement Board has been granted the authority to control and manage the operation and administration of NYISO's qualified pension plan, including responsibility for the investment of plan assets and the ability to appoint investment managers. The Retirement Board currently consists of NYISO's Chief Financial Officer, Vice President of Enterprise Services, General Counsel, and Controller. The Retirement Board provides reports to the Commerce and Compensation Committee of the Board of Directors on at least an annual basis.

The long-term investment objective for NYISO's qualified pension plan is to maximize the total return on plan assets while limiting risk, reflected in volatility of returns, to prudent levels. To that end, NYISO's Retirement Board has appointed and regularly meets with an investment advisor to review asset performance, compliance with target asset allocation guidelines, and appropriate levels of asset diversification. NYISO's investment advisor operates under written guidelines provided by NYISO, which cover such areas as investment objectives, performance measurement, permissible investments, investment restrictions, and communication and reporting requirements.

The assumed health care cost trend rates for the postretirement plan are 9% for 2009 decreasing to 4.75% in 2019, and 9% for 2008 decreasing to 4.75% in 2018. A onepercentage point change in the assumed health care cost trend rate would change the 2009 postretirement benefit obligation as follows:

		1% increase	**1% decrease**
Effect on postretirement benefit obligation	$	376,800	(343,800)
Effect on total of service and interest cost components		68,800	(63,500)

The following benefit payments, which reflect expected future service, are expected to be paid:

		Pension plan	**Postretirement plan**
2010	$	1,675,388	241,036
2011		1,924,947	317,368
2012		1,938,109	345,249
2013		1,992,146	381,432
2014		2,127,457	435,483
2015 – 2019		10,834,104	2,909,137

(b) 401(k)Plan

NYISO has a 401(k) Retirement and Savings Plan open to all nontemporary employees. This plan provides for employee contributions up to specified limits. NYISO matches 100% of the first 3% of employee contributions, and 50% of the next 2% of employee contributions. Beginning December 1, 2009, NYISO also contributes funds to employee 401(k) plan accounts equivalent to defined benefit accruals formerly earned in the qualified pension plan.

Employees are immediately vested in NYISO's matching contributions and become vested in other employer contributions after three years of credited service. The total NYISO contributions to the 401(k) plan were $1,993,192 and $1,424,834 for 2009 and 2008, respectively.

(c) Long-Term Incentive Plan

NYISO's Long-Term Incentive Plan provides certain members of senior management with deferred compensation benefits. Benefits are based upon the achievement of three-year performance goals established by the Board of Directors, with participants becoming fully vested and distributions payable for these deferred amounts after the completion of the audited financial statements for the third year. Accrued LongTerm Incentive Plan benefits included in other noncurrent liabilities at December 31, 2009 and 2008, were $0 and $1,585,340, respectively. The shortterm portion of such liability, included in other current liabilities, at December 31, 2009 and 2008, was $2,484,980 and $0, respectively.

(9) **Lease and Other Commitments**

Operating Leases

During 2008, NYISO entered into obligations under two operating lease agreements for the use of computer hardware. Expenses related to these leases totaled $2,991,277 and $1,066,500 in 2009 and 2008, respectively. The remaining obligations of the NYISO with respect to these leases are as follows:

2010	$ 3,194,640
2011	2,928,420
Total	$ 6,123,060

Other Commitments

On July 8, 2005, NYISO purchased an office building to relocate NYISO's alternate control center and to consolidate employees located in leased facilities. In connection with the purchase, management entered into a Payment in Lieu of Taxes (PILOT) Agreement with the Rensselaer County Industrial Development Agency (RCIDA) to achieve certain benefits. Per the terms of this agreement, NYISO will be required to make annual payments of approximately $175,000 for the first 10 years. The agreement is cancelable at the discretion of NYISO.

(10) **Working Capital Reserve**

At December 31, 2009 and 2008, the working capital reserve consisted of:

		2009	2008
Market participant contributions through Rate Schedule 1	$	46,440,347	46,440,345
Interest on market participant contributions		103,297	2,500,848
Total	$	46,543,644	48,941,193

(11) **Deferred Revenue**

Deferred revenue at December 31, 2009 and 2008, consisted of the following:

		2009	2008
Advance payments received on interconnection studies	$	2,859,981	4,163,169
Governance participation fees		383,700	393,600
Total	$	3,243,681	4,556,769

(12) **Regulatory Liabilities**

At December 31, 2009 and 2008, NYISO recorded the following amounts as regulatory liabilities:

		2009	2008
Funding for deferred charges	$	3,880,116	2,857,999
Rate Schedule 1 underspending		1,074,704	1,505,215
Deferred postretirement plan liability		25,489	—
Rate Schedule 1 transactional volume overcollections		—	6,461,676
Voltage support service (reactive power) market		—	2,314,198
Total		4,980,309	13,139,088
Less current portion		(1,074,704)	(10,281,089)
Long-term portion	$	3,905,605	2,857,999

NYISO recovers its operating expenses through a surcharge assessed to market participants via Rate Schedule 1 of the OATT and Services Tariff. To the extent that transactional volumes billed under Rate Schedule 1 exceed the amount expected when the Rate Schedule 1 surcharge is established, NYISO reflects a regulatory liability for the overcollection amounts. Additionally, to the extent that NYISO's spending does not exceed the annual Rate Schedule 1 revenue requirement, a regulatory liability is also established for the underspending amounts.

ASC Topic 715 requires an employer to recognize the overfunded or underfunded status of a defined benefit or postretirement plan (other than a multiemployer plan) as an asset or liability in its statement of financial position and to recognize changes in the funded status in the year in which the changes occur. For NYISO, this recognition creates a deferred noncurrent regulatory asset or liability for accumulated actuarial losses or gains to be recognized in future periods. As of December 31, 2009 and 2008 the amounts were $(25,489) and $366,920, respectively.

(13) **Commitments and Contingencies**

NYISO is routinely involved in regulatory actions. In the opinion of management, none of these matters will have a material adverse effect on the financial position, results of operations, or liquidity of NYISO.

New York State Electric and Gas (NYSEG) filed a civil suit against the NYISO in September of 2000, seeking recovery of $6.6 million in compensatory damages and unspecified punitive damages, associated with allegedly excessive payments for reserves of electricity during the period January to March 2000. The case, filed in the U.S. District Court for the Northern District of New York, was stayed pending the outcome of related proceedings at the FERC and the D.C. Circuit Court of Appeals. In those proceedings, the D.C. Circuit Court of Appeals rendered a decision on December 18, 2007 affirming FERC's determination to deny refunds, and no further related appellate or regulatory proceedings are anticipated. On February 23, 2010, NYISO and NYSEG executed and filed a stipulation dismissing the civil suit in the U.S. District Court for the Northern District of New York.

NYISO is defending a civil suit that is pending in New York State Supreme Court, Albany County. The suit, which named the NYISO and two individuals as defendants, was filed by a former employee, seeking reinstatement, as well as compensatory and punitive damages totaling $5 million, as relief for certain events alleged to have occurred during this individual's NYISO employment. On September 24, 2007, the Supreme Court granted, in part, a motion to dismiss the complaint and dismissed all claims asserted directly against the NYISO, leaving in place a single claim against a NYISO employee, the plaintiff's former supervisor. On December 31, 2009, the Third Department of the New York State Appellate Division reversed the Supreme Court's dismissal of some of the causes of action against the NYISO and the other defendants. Discovery was completed as of December 18, 2009, with dispositive motions to be filed by March 2010. No trial date has been set.

On May 14, 2009, the same former employee filed a second suit against the NYISO, alleging that, after the employee left NYISO in 2005, the employee sought re-employment in 2006 and was being considered for a new position, but that NYISO refused to rehire the former employee after learning about the first lawsuit (described above). The former employee claims that the alleged refusal to rehire was in retaliation for asserting a claim of disability discrimination in the first lawsuit. The parties' cross-motions for summary judgment are currently pending before the court.

NYISO was also a defendant in a civil suit, pending in U.S. District Court for the Southern District of New York, commenced by 330 Fund I, L.P. In the suit, the plaintiff alleged that NYISO had failed to timely post certain information regarding transmission system changes and outages on NYISO's Open Access Same-Time Information System, in violation of NYISO's OATT, which allegedly resulted in plaintiff incurring unspecified losses in connection with several transmission congestion contracts. By mutual agreement of the parties, the suit was dismissed, with prejudice, on April 22, 2009.

(14) **Subsequent Events**

NYISO considers events and transactions that occur after the balance sheet date, but before the financial statements are issued, to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure. These financial statements were issued on March 17, 2010 and subsequent events have been evaluated through that date.

The New York Independent System Operator

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.

The NYISO is governed by an independent Board of Directors and a committee structure comprised of a diverse array of stakeholder representatives. It is subject to the oversight of the Federal Energy Regulatory Commission (FERC) and regulated in certain aspects by the New York State Public Service Commission (NYSPSC). NYISO operations are also overseen by electric system reliability regulators, including the North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC), and the New York State Reliability Council (NYSRC).

The members of the NYISO's 10-member Board of Directors have backgrounds in electricity systems, finance, academia, information technology, communications, and public service. The members of the Board, as well as all employees, have no business, financial, operating, or other direct relationship to any market participant or stakeholder. The NYISO does not own power plants or transmission lines.

The NYISO's independence means that its actions and decisions are not based on profit motives, but on how best to enhance the reliability and efficiency of the power system, and safeguard the transparency and fairness of the markets.

The mission of the NYISO, in collaboration with its stakeholders, is to serve the public interest by:

- *Maintaining and enhancing regional reliability*
- *Promoting and operating a fair and competitive electric wholesale market*
- *Planning for the power system of the future*
- *Providing objective and independent technical information on energy issues*

The NYISO manages the efficient flow of power on nearly 11,000 miles of electric transmission lines on a minute-to-minute basis, 24 hours-a-day, seven days-a-week. As the administrator of the competitive wholesale markets, the NYISO conducts auctions that match the retail electric service companies looking to purchase power and the suppliers offering to sell it.

In addition to these functions, the NYISO has an expanding and increasingly important planning function to assess New York's electricity needs and evaluate the ability of planned new power facilities and other options to meet those needs. This planning process involves stakeholders, regulators, public officials, consumer representatives, and energy experts who provide vital information and input from a variety of viewpoints.

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.

PHONE 518.356.6000 | WWW.NYISO.COM

NEW YORK INDEPENDENT SYSTEM OPERATOR
10 Krey Boulevard, Rensselaer, NY 12144

Attachment V.

Affidavit: 16 NYCRR Section 37.1(o)

NEW YORK STATE PUBLIC SERVICE COMMISSION

----------X

In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
)
COUNTY OF ALBANY)

ss.:

Mary McGarvey, being duly sworn, deposes and says:

1. I am the Vice President and Chief Financial Officer of the New York Independent System Operator, Inc. (the "NYISO").

2. The accounts of the NYISO have been kept strictly in accordance with the accounting orders of the New York State Public Service Commission applicable thereto, and that since the effective date of such orders there have been no charges to asset accounts not in accordance therewith and that all required credits to such asset accounts have been made for the amount and in the manner prescribed therefor in such accounting orders.

Mary McGarvey

Subscribed and sworn to
before me this 15th day
of December, 2010.

Notary Public, State of New York
Qualified in Albany County
Commission Expires: 02/01/2014

CARL F. PATKA
Notary Public - State of New York
No. 4962209
Qualified in Albany County
My Commission Expires Feb. 12, 2014

Attachment VI.

Affidavit: 16 NYCRR Section 37.3(d)

NEW YORK STATE PUBLIC SERVICE COMMISSION

----------X

In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

Mary McGarvey, being duly sworn, deposes and says:

1. I am the Vice President and Chief Financial Officer of the New York Independent System Operator, Inc. (the "NYISO").

2. No part of the cost of the work proposed to be financed by the Proposed Construction Facility is in whole or in part reasonably chargeable to operating expenses or income of the NYISO.

Mary McGarvey

Subscribed and sworn to
before me this 15th day
of December, 2010.

Notary Public, State of New York
Qualified in Albany County
Commission Expires: 02/01/14

CARL F. PATKA
Notary Public - State of New York
No. 4962209
Qualified in Albany County
My Commission Expires Feb. 1, 2014

Attachment VII.

Negative Declarations of East Greenbush and Guilderland

TOWN OF GUILDERLAND ZONING BOARD OF APPEALS
State Environmental Quality Review
NEGATIVE DECLARATION
Notice of Determination of Non-Significance

Pursuant to the State Environmental Quality Review Act ("SEQRA"), the Zoning Board of Appeals, as Lead Agency under SEQRA, determines that the Proposed Action will not have a significant adverse environmental impact and that a draft Environmental Impact Statement will not be prepared based upon the following findings:

Applicant: New York Independent Systems Operator
Property: 3890 Carman Road, Schenectady, NY 12303
Tax Map No. 39.07-1-26.1; Zoned Local Business.

Proposed Action (as stated in notice of public hearing dated January 26, 2010):

Request of New York Independent Systems Operator, Inc. ("NYISO") for a Variance of the regulations/Amendment to Special Use Permit #23-99 under the Zoning Law to permit the construction of a single story 13,000sf permanent addition to an existing 49,000sf office building. Proposed addition will replace a previously approved temporary office space. A variance is requested from providing a total required number of parking spaces of 243. It is also requested to allow the continuation of the temporary office space through calendar year 2010 (collectively, the "Application").

REASONS SUPPORTING NEGATIVE DETERMINATION

1. NYISO's Application involves an expansion of its office building at 3890 Carman Road which currently consists of a three (3) story, 48,950 sf office building and 4,700 sf temporary modular office building. The expansion involves a one-story, 13,000 sf addition to the office building and removal of the modular office building.

2. The expansion will house computer and data equipment. No new office space will be created. Two new emergency back-up generators will replace older generators. The rear access drive and loading area will be reconfigured. Some current employees will be relocated to NYISO's facility in North Greenbush and East Greenbush.

3. This Application is a Type I action under SEQRA because this Application and another application for the expansion of NYISO's facility in East Greenbush constitute one action under SEQRA because of a common funding source.

4. On January 13, 2010, the Board provided notice to involved agencies of its intention to act as Lead Agency for the application in Guilderland. No agency objected.

5. At its February 3, 2010 public hearing, the Board determined, pursuant to 6 NYCRR §617.3(g), to proceed with permissive segmented review. The East Greenbush Town Board is acting as Lead Agency for the Application to expand NYISO's East Greenbush facility. While both facilities are part of a single action under SEQRA, each NYISO facility is isolated from the other and any environmental impact will be local in nature and not common or cumulative in any way. The facilities are in separate towns and counties, and are approximately fifteen (15) miles apart. A segmented review of each application by this Board and the East Greenbush Town Board will be no less protective of the environment than a review of the whole action by this Board.

6. In its SEQRA review, the Board considered the criteria contained in 6 NYCRR §617.7(c), and relevant information to identify potential areas of environmental concern. The Board reviewed NYISO's Application, including site plans; the Full Environmental Assessment Form ("EAF") dated January 12, 2010; Creighton Manning Engineering, LLP's letter dated November 18, 2009, regarding traffic; the Stormwater Pollution Prevention Plan ("SWPPP") dated February 3, 2010; NYSIO's letter dated February 23, 2010, which amended its Application regarding the right of way adjacent to Town Hall; NYS Department of Public Service's letter dated February 10, 2010, regarding potential impacts upon archaeological areas and noise and emissions from the new generators; NYISO's letter dated February 23, 2010, which amended its Application; NYISO's amended site plan and revised EAF which was amended to reflect the amended site plan's change in forested and lawn areas; NYS Office of Parks, Recreation and Historic Places' ("SHPO") letter dated March 10, 2010, stating that the amended Application would have no effect upon cultural or historic resources; and NYISO's letter dated March 10, 2010, in response to Public Service Department's comments. The Board also reviewed prior Special Use Permits for the property.

7. The Board also considered comments from Albany County Planning Board, NYS Department of Transportation ("DOT"), Town Planning Board, and Town Planner. A public hearing was held on February 3, February 17, and March 17, 2010. No public comments were provided and the public hearing was closed.

8. Based upon this review, the Board identified the following potential environmental issues: potential impacts on archaeological and historic resources; noise, odor, and aesthetic impacts on neighboring properties; traffic impacts; pedestrian safety; stormwater management; and the use of the driveway or right of way adjacent to Town Hall. The Board confirmed that the proposed action would not adversely impact other areas of potential environmental concern listed in the EAF, as amended, including impacts upon agricultural resources, wetlands, wildlife, public safety resources, air quality, ground water, waterways, loss of natural material, solid waste production, public health, and demands on public service, and other potential concerns in the EAF.

9. After careful review, the Board finds that the granting of this Amended Application will not cause a significant environmental impact and that a negative declaration under SEQRA should issue.

10. The Board finds that the Proposed Action will not create any significant adverse impact upon archaeological or historic resources. The amended site plan omits relocating the fence and eliminates any disturbance to previously undisturbed land. In a letter dated March 10, 2010, SHPO stated that, based upon the project's scope, which is largely limited to the area around the existing building and its environment within the existing fence line, the proposed action would have no impact upon cultural resources in or eligible for inclusion in either the State or National Register of Historic Places.

11. The Board finds that the Proposed Action will not create any significant adverse aesthetic impact on neighboring properties. The expansion will be screened from nearby residential areas by existing vegetation and a large hill on the northern property line. The expansion is screened by surrounding commercial and institutional buildings.

12. The Board finds that the Proposed Action will not result in any significant adverse noise or odor impacts. The facility is separated from residences by a steep vegetated hill. The existing ambient noise level will not be increased by this expansion.

13. The Board finds that the replacement of two of the three existing diesel electric generators with two new back-up generators should have a positive environmental benefit. The old generators are rated at 80 decibels at 60 feet. The new generators are rated at 60 decibels at 50 feet according to the manufacturer's specifications. This rating is well below the Town's noise ordinance. The new generators are compliant with EPA emission standards and, based upon operational data for the existing generator, a DEC air permit for the new generators is not required. In addition, only one generator will be used during emergency power interruptions with the other generators serving as back-ups. The generators will be tested once a month, for approximately 30 minutes, during normal business hours. The new generators will be relocated on the southwest portion of the property and further away from the residences than existing generators. The site is screened from nearby residences by a large hill and vegetation. As an added assurance, the applicant will work with the Zoning Administrator on addressing any noise or odor issues that may become evident from the operation of the generators.

14. The Board finds that the proposed SWPPP was reviewed and accepted, as modified, by the Town's Stormwater Management Officer. The SWPPP includes erosion and sedimentation control measures during construction and other measures to avoid potentially adverse impacts from stormwater runoff. With the implementation of a properly designed SWPPP, no significant adverse storm water impacts are anticipated.

15. The Board finds that the Proposed Action will not create any significant adverse traffic impacts. The expansion does not involve new offices and no new employees or vehicle trips will be generated. Vehicle trips to the facility will decrease due to the relocation of staff and visitors from this facility to the East Greenbush facility.

16. The Board finds that the Proposed Action will provide a positive benefit to pedestrian safety. In 2004, the Board granted an amended Special Use Permit for the relocation of the driveway and a new entrance. The applicant agreed to extend the sidewalk along Carman Road to Morningside Drive. The applicant will work with DOT and the Town on the design and placement of this sidewalk in DOT's right of way.

17. The Board finds that the Proposed Action will provide a positive benefit with respect to the driveway adjacent to the Town Hall. The facility currently uses this right of way, intends to use it during construction, and will continue to use it as a secured rear entrance. The Application states that portions of the right of way are in disrepair and that a portion is exclusively used by the applicant. The Amended Application states that the applicant will resurface the right of way from Route 20 to the applicant's property upon completion of construction.

18. No significant adverse cumulative impacts are expected. The expansion will not induce growth nor change the office character of the property or neighborhood.

19. For these reasons, the Board concludes that the granting of the Proposed Action will not have any significant adverse impact on the environment and that a negative declaration under SEQRA should issue.

Adopted by a vote of 7-0.

Dated: March 17, 2010

Peter G. Barber, Chairman

For Further Information Contact:
Donald F. Cropsey, Jr., Zoning Administrator
Town of Guilderland Zoning Board of Appeals (SEQRA Lead Agency)
Guilderland Town Hall, PO Box 339
Guilderland, New York 12084 Phone: 518-356-1980; Fax: 518-356-1990
Email: cropseyd@townofguilderland.org

Filing and Publication:
A copy of this Determination of Non-Significance will be filed, distributed and published as required by 6 NYCRR §617.12.

TOWN OF EAST GREENBUSH
RESOLUTION 63-2010

SEQR Determination for the New York Independent System Operator (NYISO)
Site Plan
10 Krey Boulevard

WHEREAS, the Town of East Greenbush received an application for the site plan review known as the New York Independent System Operator, tax parcel number 144-4-61, prepared by Woodward Connor Gillies & Seleman Architects; and

WHEREAS, the application was accompanied by a proposed site plan, Part 1 of a Full Environmental Assessment Form ("EAF") and other supporting information; and

WHEREAS, the Town Board has determined that the action is a Type 1 Action under SEQR and conducted a coordinated review of the Project; and

WHEREAS, the Town Board prepared and circulated a lead agency coordination letter requesting the consent of all the involved agencies to designation of the Town Board as Lead Agency for review of the Project under the State Environmental Quality Review Action ("SEQRA"); and

WHEREAS, all involved agencies consented to such designation and, therefore, pursuant to 6 New York Code of Rules and Regulations ("NYCRR") Section 617.6, the Town of East Greenbush Town Board is the lead agency for SEQRA review of the Project; and

WHEREAS, the Town Board, as lead agency, has reviewed and fully considered the proposed Project and Part I of the EAF, and has completed Part II of the EAF; and

WHEREAS, The Town Planning Board, Project Review Team and the Planning Board's Designated Engineer have taken a "hard look" at the potential environmental impacts of this project by carefully considering and reviewing the Full Environmental Assessment Form, considering all the Applicant's proposed mitigation measures as they relate to all environmental issues and more particularly to traffic, fire and rescue and MS-4 stormwater detention and hereby recommends the Town Board issue a Negative Declaration under SEQRA; and

WHEREAS, the Town Board has taken a hard look at the potential environmental impacts of this Project by carefully considering them and thoroughly evaluating their potential significance; and

WHEREAS, the Town Board has determined that the action will not result in any large or important impacts and, any potential impacts can be mitigated;

WHEREAS, as the Town Comptroller has herefore, certified that none of the provisions of this proposed Board action shall pose an adverse impact to said Town's finances,

NOW, THEREFORE, BE IT RESOLVED, that based on the "Reasons Supporting this Determination" discussed in the attached SEQRA Negative Declaration – Notice of

Determination of Non-Significance ("Negative Declaration") the Town Board hereby finds that the Project will not have a significant impact on the environment and authorizes the filing of a Negative Declaration for the Project.

The foregoing Resolution was duly moved by Councilperson O'Brien and seconded by Supervisor McCabe and brought to a vote resulting as follows:

Councilperson O'Brien	VOTED	YES___
Supervisor McCabe	VOTED	YES___
Councilperson Matters	VOTED	YES___

Dated: March 10, 2010

State Environmental Quality Review
NEGATIVE DECLARATION
Notice of Determination of Non-Significance

Project Number_____ Date: March 10, 2010

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The East Greenbush Town Board as lead agency has determined that the proposed action described below will not have a significant environmental impact and a Draft Impact Statement will not be prepared.

Name of Action:

New York Independent System Operator Facility Expansion (the Project)

SEQR Status: Type I ☒
Unlisted ☐

Conditioned Negative Declaration: ☐ Yes
☒ No

Description of Action:

The "action" triggering this SEQRA review is the Town Board's consideration of the proposed expansion of the New York Independent System Operator's ("NYISO's") office building located at 10 Krey Boulevard in the Towns of North Greenbush and East Greenbush, Rensselaer County, New York (hereinafter, "the Greenbush facility"). NYISO's Greenbush facility currently contains a four-story, 134,000 square foot office building, 594 parking spaces and circulation roadways and walkways on a 25.85 acre parcel of land. The existing parking field includes twenty-five foot high pole lights. Other security and perimeter lighting also exists throughout the site. Approximately 18.5 acres of the site are characterized by forest, meadow and lawn area, including an existing stormwater detention pond located to the north east of the existing office building. The facility also contains security fencing, a security booth and entrance/exit gates. (See Exhibit "A," drawing X1.1)

NYISO is proposing to construct a two-story, 64,600 square foot addition at the southeast corner of its existing office building. The addition will house the new power control center for New York State from which NYISO will operate the bulk power grid and electricity markets for the State. The expansion will be built in an existing parking lot and result in the conversion of approximately 1.4 acres of lawn area into impervious surfaces. NYISO is also proposing to expand the existing parking field by only sixteen (16) spaces. The exit drive onto Krey Boulevard will also be re-oriented as part of the expansion. (See Exhibit "A," drawings x1.1A, 1.3, 1.4, 1.5, 1.6, 1.7, 3.1 and 3.2)

In addition to expansion of NYISO's Greenbush facility, NYISO is undertaking improvements to its facility located at 3890 Carman Road in the Town of Guilderland, Albany County, New York (the "Guilderland Facility"). While the improvements at the Guilderland facility are not subject to the Town Board's jurisdiction, the improvements at that facility are described below for purposes of describing the "whole action" subject to SEQRA review:

- NYISO's Guilderland facility contains approximately 11.28 acres of land area which is partially occupied by a three (3) story, 48,950 square foot office building, a 4,700 square foot modular office building, 178 parking spaces and access and circulation roadways;

- Approximately 7.58 acres of the site are characterized by forest, meadow and lawn area;

- The expansion of the Guilderland facility will entail the construction of a one-story, 13,000 square foot addition on the south and west sides of the existing office building to house electrical and mechanical equipment. The rear access drive and loading area will be reconfigured. Two older emergency back-up generators on the site will be replaced with two new generators.

- Approximately 120 employees and their related visitors would be relocated from NYISO's Guilderland facility to its Greenbush facility.

(See Exhibit "B'" Guilderland Site Plan)

As explained in more detail below, in accordance with 6 NYCRR Part 617.3(g), the SEQRA review of the Guilderland facility expansion has been permissively segmented from the Town Board's review of the Greenbush facility expansion. The Town of Guilderland Zoning Board of Appeals ("ZBA") is acting as the SEQRA lead agency and conducting the SEQRA review for the Guilderland expansion. The segmented review is discussed in more detail below.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)

The Greenbush facility is located at 10 Krey Boulevard, Rensselaer, New York, southeast of the intersection between U.S. Route 90 and NYS Route 43. The site is bisected by the Towns of North Greenbush and East Greenbush. The portion of the site in North Greenbush is located in the Town's IG-Industrial Zoning District. The portion of the site in East Greenbush is located in the Town's OC-Corporation Office/Regional Commercial Zoning District. The existing office building is located entirely in the Town of North Greenbush. The expansion will be located partially in the Town of North Greenbush and partially in the Town of East Greenbush. (See Exhibit "C," Google Earth Aerial Photograph)

The Guilderland project is located at 3890 Carman Road in the Town of Guilderland's Local Business (LB) Zoning District.

Procedural History:

- November 25, 2009: A site plan review application submitted to the Town of East Greenbush. (See Exhibit "D," Site Plan Application Form only).

- December 2, 2010: The Town of East Greenbush Planning Board approved a sketch plan for the proposed building expansion and recommended that the Town Board act as the SEQRA lead agency for the project.

- December 9, 2009: The Town Board determined that NYISO's Guilderland and Greenbush facility expansion projects constituted a Type 1 SEQRA action and undertook efforts to permissively segment the SEQRA review of each project.

- December 21, 2009: The Town Board circulated notice of its intent to act as SEQRA lead agency for review of the Greenbush facility expansion. The notice was sent to all involved and interested agencies. (See Exhibit "E," East Greenbush Lead Agency Circulation Notice).

- January 20, 2010: The Town Board became the SEQRA lead agency for purposes of reviewing the Greenbush facility expansion.

- March 3, 2010: the Town of East Greenbush Planning Board recommended that a SEQRA Negative Declaration be adopted by the Town Board for the Greenbush facility expansion.

- March __, 2010: the Town Board completed Parts 2 and 3 of the full Environmental Assessment Form for the project. (See Exhibit "F," full EAF).

Other Agency Actions:

A variety of state and local agencies, and the Town Designated Engineer have already provided recommendations relating to the potential environmental impacts from the project. In particular, the Town of East Greenbush Town Board considered the following as part of its SEQRA review of this action:

(1) NYS Department of Transportation comments on the project. (See Exhibit "G").
(2) NYS Department of Environmental Conservation comments on the project. (See Exhibit "H").
(3) Town of North Greenbush comments on the project.
(4) Public Service Commission comments on the project. (See Exhibit "I").
(5) CDTA comments on the project. (See Exhibit "J").
(6) Chazen Companies comments on the project, and responses from NYISO's consultant Woodward, Connor, Gillies & Seleman Architects. (See Exhibits "K" and "L").

Reasons Supporting This Determination:
(See 617.7(a)-(c) for requirements of this determination; see 617.7(d) for Conditioned Negative Declaration)

After considering the criteria for the determining significance as set forth in 6 NYCRRR 617.7(e), the Town Board has determined, for the reasons discussed below, that the proposed Project will not have a significant adverse impact on the environment and the issuance of a negative declaration under SEQRA is warranted.

<u>Segmentation</u>

Under the circumstances noted below, a segmented review of the Greenbush facility expansion and the Guilderland facility expansion is appropriate and will be no less protective of the environment than if the facility expansion projects were reviewed together. Although both facilities are owned by NYISO, will be expanded concurrently and are being expanded and renovated as part of a general restructuring plan by NYISO, the facilities are isolated from one another and, as a result, physical environmental impacts which may result from the projects will be local in nature and not common or cumulative in any way. In fact, the facilities are located in separate towns and counties, approximately fifteen (15) miles apart from one another. More specifically:

- Traffic: The facilities do not share a common roadway network. In fact, major highway networks and interchanges separate the facilities. The Greenbush Facility is located in immediate proximity of U.S. Route 90 and NYS Route 43. The Guilderland facility is located in immediate proximity of NYS Routes 20 and 146.

- Surface water, wetlands, stormwater and water quality: The facilities are not located in a common, local watershed – in fact, they are separated geographically by the Hudson River. The Guilderland facility is located in the Watervliet watershed. The Greenbush facility is not. No surface water or wetlands will be impacted and stormwater will be managed on each of the respective sites.

- Public services: The facilities do not share any public services. They are located in separate water, sewer, fire protection, ambulance service, police dispatch and school districts. There is also no commonality in the public service demands from the NYISO facilities.

- Miscellaneous physical environmental impacts: The expansion of the facilities will not result in any major off-site environmental impacts. No major air emissions or other offsite physical environmental impacts will result such that there would be any cumulative environmental impacts resulting from the projects.

For all of these reasons, a segmented review of the projects will be no less protective of the environment than a review of the whole action by the Town Board. Moreover, concurrent with the issuance of this SEQRA negative declaration, the Guilderland ZBA is acting as the SEQRA lead agency for purposes of reviewing the Guilderland facility expansion. The Guilderland ZBA is better suited to address local environmental impacts which may be attributable to the Guilderland facility than the Town Board because the Town Board has no jurisdiction over the Guilderland facility. The same is true regarding the lack of jurisdiction by the Guilderland ZBA over the Greenbush facility.

Construction Impacts

The construction of the Project is not expected to result in any significant adverse environmental impacts. Several short term and minor impacts are expected during construction. For example, the use of construction vehicles and equipment may increase air emissions and noise temporarily on site. These temporary emissions are not expected to adversely affect air quality in the area and the efficient use and proper maintenance of both vehicles and equipment will mitigate these impacts. Additionally, common construction practices (i.e. water suppressants, blanket screening, limiting activities to non-windy days, etc.) will be used as necessary to minimize additional impacts, if any.

Waste generated during construction will not result in any significant adverse environmental impacts. All construction waste will be collected and removed on a regular basis. Construction waste will be delivered off-site to a proper disposal facility. The efficient management of construction materials will be employed on-site to discourage waste and reduce construction costs.

A site specific stormwater pollution prevention plan will be developed and implemented to control construction phase water run off and control sediment and erosion from disturbed areas.

Agricultural Resources

The Greenbush Facility expansion will not have any significant adverse impact on agricultural resources. The project site is located in Industrial and Commercial zoning districts in the Towns of North Greenbush and East Greenbush. The site is not located in close proximity to an agricultural district or farming operation. No agricultural land exists adjacent or substantially contiguous to the site.

Aesthetics

The Greenbush facility expansion is screened mostly from the north and east by existing vegetation and topography. (See Exhibit “A,” drawing 1.1). However, the expansion will be visible from the south and the west, but is generally consistent with the existing office building and other surrounding office, medical, distribution and commercial land uses. (See Exhibits “A,” drawing X1.1A, and “C,” Google Earth Aerial Photograph). The expansion will occur on a corner of the building and will expand the square footage of the existing facility by about forty-seven percent (47%). Architecturally, the expansion will be designed to match or be similar to the existing office building. The new addition will be built in an existing parking lot A small number of trees will be removed to realign an existing access road on the north side of the building. The new addition will not exceed the height limitation imposed under the Town’s Zoning Law or any other provision of the Town’s Zoning Law which pertains to aesthetics. The project will reuse the existing light poles on the site which the building inspector has confirmed are legal non-conforming structures under the Town’s Zoning Code. (See Exhibit “M,” Determination Letter from Building Inspector). The applicant has submitted a photometric plan demonstrating that these existing light poles will not create any adverse lighting impacts on neighboring commercial properties. (See Exhibit “A,” drawing X1.3). To further avoid any potentially adverse aesthetic impacts, a substantial portion of the forest and lawn area on the site will remain as green space and will not be disturbed. (See Exhibit “A,” drawing X1.4). The facility will not impact any scenic view sheds or vistas. Based on the forgoing, the Greenbush facility expansion will not have any significant adverse visual or aesthetic impacts.

Noise

The construction and operation of the Greenbush facility expansion will not result in any significant adverse noise impacts. Ambient noise levels in the area of the facility are predominantly characterized by vehicles traveling along NYS Route 43 and U.S Interstate 90 and its Exit 8 On/Off Ramp (which are both located adjacent to the site) as well as noise generated by other surrounding industrial and commercial land uses. The proposed office expansion will not change these noise levels in any material way. While construction of the expansion may result in noise levels exceeding background conditions, any such impacts will be temporary in duration and generally limited to day-time hours Monday through Saturday. Once the expansion is fully constructed, noise will generally be limited to cars (and occasional trucks) entering and exiting the facility during normal business hours. These impacts will be consistent with the ordinary operations of the commercial park and are not expected to be significant or adverse in any way.

Additionally, while an emergency back-up generator will be added to the site, the generator will be located alongside two previously existing generators. The generator will be used only in emergency situations when main power to the facility is interrupted. In addition, the generator will be "exercised" only once month for about a half-hour. The use of the generator will be for short periods and any noise impacts will be temporary in nature. Moreover, the generators are oriented in proximity of the I-90 off-ramp and a bus garage. No residential or other sensitive receptors are located in proximity of the site. Based on the foregoing, no significant noise impacts are anticipated for the addition of a new generator to the site.

For the reasons set forth above, the Greenbush facility expansion will not result in any significant adverse noise impacts.

Stormwater

A detailed Stormwater Pollution Prevention Plan ("SWPPP") and storm water control practices have been engineered for the site as required by the NYSDEC's storm water regulations. (See Exhibit "N," Preliminary Stormwater Pollution Prevention Plan ("SWPPP") and drawings X2.1, 2.2 and 2.3). Erosion and sedimentation control measures will be employed during construction of the expansion to avoid potentially adverse impacts from storm water runoff. They include, among other things, vegetative stabilization of disturbed areas, limits of clearing and grading, use of sedimentation fencing and hay-bales, and protection of stockpiled materials. Existing storm water management facilities will be improved and stormwater will be directed to these facilities. Also, as required by the Town's Zoning Law, NYISO will enter into a storm water maintenance agreement and easement with the Town to ensure that the storm water control measures are maintained properly.

The Town's Engineer reviewed the SWPPP and provided technical comments to the Town in a letter dated February 1, 2010. (See Exhibit "K," Chazen Companies Letter). The applicant modified the SWPPP to address those comments. (See Exhibits "L," Woodward, Connor, Gillies & Seleman Architects Responsive Letter, and "N").

Because potential adverse impacts from storm water runoff will be avoided through the proper design and implementation of a SWPPP and storm water control measures, no significant adverse impacts are expected.

Wetlands, Streams and Other Water Bodies

The Greenbush facility expansion will not result in any significant adverse impacts to federal or State wetlands, streams or other bodies of water because no such resources exist within the area to be disturbed by the project.

This conclusion was confirmed by a qualified wetlands biologist. (See Exhibit "O," Letter from North Country Ecological Services ("NCES") dated August 10, 2009). The site is not located within a floodplain. Additionally, stormwater will be directed to the existing stormwater management facilities on the site and not directly to any streams, wetlands or other bodies of water.

For the reasons set forth above, the Greenbush facility expansion will not create any significant adverse impact to wetlands, streams or other water bodies.

Archeological and Historic Resources

The Greenbush facility expansion will not result in any significant adverse impacts to cultural resources. Regarding archeological resources, the previous FEIS adopted in support of the Greenbush Commerce Park determined that no historical or archeological resources were located on the site or nearby. (See Exhibit "P," Greenbush Commerce Park Final Environmental Impact Statement). Moreover, while the site is located in an archeologically sensitive area as designated by the State Historic Preservation Office ("SHPO") of the New York State Office of Parks, Recreation and Historic Preservation ("OPRHP"), the new addition will be built in an existing parking lot which was extensively disturbed by the office building's original construction. Given this prior site disturbance, NYSDEC determined that no further study of the site was warranted for potential impacts to cultural resources. (See Exhibit "Q," Letter from NYSDEC Region IV Staff dated May 9, 2005). As a result, no impacts to archeological resources are expected from the project.

Regarding historic resources, the expansion is not located immediately adjacent to or in close proximity to any historic sites listed on the State or National Registers of Historic Places. The project is located in an active commercial park surrounded by other commercial buildings and interstate highways. The expansion is also not expected to have any adverse visual impacts on important aesthetic resources. The Town Board coordinated with SHPO as part of the SEQRA process and no concerns were raised with respect to the project. (See Exhibit "E," East Greenbush SEQRA Lead Agency Circulation Notice).

Based on the foregoing, the Greenbush facility expansion will not have any significant adverse impacts on archeological or historical resources.

Traffic

The Greenbush facility expansion will not create any significant adverse traffic impacts. The project's potential traffic impacts were evaluated by a qualified traffic engineer who concluded that employee and visitor trips to the facility will increase modestly – adding 39 additional vehicle drips during the AM peak hour and 35 additional vehicle trips during the PM peak hour to Krey Boulevard. This equates to the addition of less than one vehicle trip every minute during the peak periods. This minor increase will not create any significant traffic impacts on the roadway network around the site. (See Exhibits "G," NYSDOT Comments, and "R," Trip Generation Estimates by Creighton Manning Engineering, LLP dated January 11, 2010). Furthermore, adequate site and stopping distances exist along Krey Boulevard as measured from the existing and proposed curb cut locations and based upon the existing background traffic. Additionally, adequate parking on the site will ensure that "back-ups" onto Krey Boulevard do not occur.

Based on the foregoing, the Greenbush facility expansion will not have any significant adverse traffic impacts in the area.

Community Character

The Greenbush facility expansion will not create any significant adverse impacts on community character. The facility is an allowed use in the IG and OC zoning districts, subject to site plan approval. The IG Zoning District in the Town of North Greenbush allows a wide range of industrial uses as well as uses allowed in the BG (General Business) and BN (Neighborhood Business) Zoning Districts, such as professional and business offices. The OC Zoning District in the Town of East Greenbush was designed to permit and encourage a grouping of office and commercial uses, including corporate office centers and large scale campus-type developments. As a result, the facility is and will remain consistent with planned future uses in both Towns' Zoning Districts.

Current land uses in proximity to the site are a mixture of industrial, warehousing and commercial uses. The facility expansion is consistent with these land uses and will not have an adverse impact on them. The

NYISO office building has existed at the site for approximately 14 years and is a part of the community character in Greenbush Commercial Park. The architectural style of the proposed expansion will be the same or similar to the existing building and will not change its character in any material way. Moreover, the facility expansion will also not increase the permanent population of the community.

For the reasons set forth above, the Greenbush facility expansion will not have any significant adverse community character impacts.

Wildlife

The Greenbush facility expansion will not have any significant adverse impacts on wildlife. The site was evaluated by a qualified wildlife biologist and no threatened or endangered plants or animals were identified. (See Exhibit "O," NCES Letter dated August 10, 2009). Moreover, the project entails the redevelopment of an existing office building site. There is little to no important wildlife habitat on or around the site that will be disturbed by the expansion project. The site contains an existing office building, parking lots, access drives and other accessory structures. A minor amount of clearing will occur on the north side of the building for the realignment of an existing access road. The facility is located in a developed commercial park alongside a major interstate highway (and its off/on ramp). As mentioned, no major clearing is required for the project and the project will not result in on-site or off-site impacts to streams, wetlands or other water-bodies. This was confirmed by NCES, a qualified ecological consultant, based upon a field visit.

For the reasons set forth above, the Greenbush facility expansion will not have any significant adverse impact on wildlife.

Public Safety

Public safety concerns are not implicated by the Greenbush facility expansion. The facility is a secure, monitored, sprinklered building with outdoor lighting during the evening hours. In addition, the facility will not entail: (1) the storage of large quantities of hazardous material or flammable or explosive materials; (2) the burial of hazardous wastes; (3) excavation or disturbance near a site used for the disposal of solid or hazardous waste; or (4) a chronic low-level discharge or emission of hazardous materials.

The Greenbush facility expansion is designed to help NYISO more efficiently and effectively operate the bulk power grid and electricity markets in New York State which will provide a valuable public benefit to the citizens of the State.

Based on the foregoing reasons, the Greenbush facility expansion will not create any significant adverse impact to public safety.

Air Quality

Potential adverse air quality impacts are not anticipated from the Greenbush facility expansion. Rensselaer County is located in an "attainment" area for criteria air pollutants monitored and considered important by NYSDEC and the USEPA. The expansion will not generate any large quantity of vehicle emissions or associated air emissions. Use of the facility by an additional 120 employees and visitors traveling on the surrounding roadway networks will not have any measurable effect on local or regional air quality. Additionally, the new generator at the site will be equipped with required air emission control technology and is designed in compliance with all applicable federal and state regulations. The facility expansion will not change air quality to such a degree that it will jeopardize attainment of the National Ambient Air Quality Standards for this region.

During construction, construction vehicles will be equipped with factory installed muffler and emission control devices. Dust will be suppressed as necessary. Construction will be short in duration.

Based on the foregoing, the Greenbush facility expansion will not have any significant adverse impacts on air quality in the area or the region.

Wild, Scenic and Recreational Rivers

There are no nationally or State designated wild, scenic or recreational rivers on or adjacent to the Greenbush facility. As a result, there will be no significant adverse impacts to these resources from the expansion project.

Ground Water

No significant adverse impacts to groundwater quantity or quality will occur from the Greenbush facility expansion. The facility is not within an EPA designated sole source aquifer area, nor within the stream flow source of a sole source aquifer. The facility is connected to the Town's municipal water supply system, meaning groundwater will not be utilized or impacted. In addition, all storm water collected from the facility will be captured in storm water swales and other permanent storm water management facilities where it will be recharged back into the groundwater or gradually released to existing drainage ways at rates that will not exceed pre-development levels.

The facility expansion will not result in construction or operation activity with the potential to cause any contamination of a water supply well. There are no septic systems associated with the facility that could affect groundwater. The facility will be connected to the municipal sewer system.

Based on the foregoing, the Greenbush facility expansion will not create any significant adverse impacts on groundwater quality or quantity.

Loss of Soil, Vegetation and Other Natural Material

The Greenbush facility expansion will not result in any significant adverse impacts to natural resources or result in any significant loss of soil, vegetation or other natural material. The facility expansion will result in the loss of only about 1.4 acres of lawn area. No construction will occur on steep slopes except for a small man-made berm which will be removed as part of the project. (See Exhibit "A," drawings A3.1 and A3.2). The Town's building inspector has determined that this berm can be removed under the Town's Zoning Law as part of the project. (See Exhibit "M," Building Inspector Determination Letter). The remainder of the site is relatively flat. Moreover, no construction will occur where the depth to the water table is less than 3 feet. Construction will not occur where bedrock is exposed or generally within 3 feet of bedrock. No blasting will occur and there are no unique or unusual landforms that will be affected by the facility expansion. Finally, the stormwater controls are designed to reduce the amount of runoff and related loss of soil experienced at the site.

Based on the foregoing, the Greenbush facility expansion is not expected to have any significant adverse impact on soil, vegetation or natural resources.

Solid Waste Production

Construction and operation of the Greenbush facility expansion will result in the production of construction waste during the facilities expansion and office related waste during its operations. These waste materials will be delivered by private carters to licensed disposal facilities. The facility will not, however, result in a substantial increase in solid waste production for the region.

Flood Plains

The Greenbush facility expansion will not have any significant adverse impacts on flood plains in the Town. The facility expansion will be located well outside of any 100-year floodplain. As noted above, all storm water from the facility will be collected by swales and the permanent storm water management facilities

where it will be recharged back into the groundwater or gradually released to existing drainage ways at rates that will not exceed pre-development levels. No impacts to flood plains are expected.

Public Health

The Greenbush facility expansion will not create any significant adverse public health impacts. As noted above, air emissions from any vehicles using the facility will not adversely impact local or regional air quality. Moreover, Rensselaer County is located within an air quality attainment area. Similarly, the use of the facility will not create any adverse noise impacts on any neighboring commercial properties. As a result, the project will not create any significant adverse impacts on public health.

Induced Growth

The Greenbush facility expansion will not induce growth in the Town. No plans currently exist to develop the remaining lands of the Greenbush facility. Moreover, as part of the related Guilderland facility renovations, no additional staff will be relocated to the Greenbush facility beyond the planned 120 employees and visitors. The addition of this limited number of new employees and visitors is not expected to induce residential or commercial growth in the area. Furthermore, the project will use existing public utilities and will not create any new public infrastructure that could potentially induce future growth on or around the site. As a result, no growth impacts are expected from the proposed expansion.

Demand on Services

The Greenbush facility expansion will not create any demand for public services. The facility is a small expansion which will contain a two-story addition that will house a modest number of additional staff, and there are no plans to develop the remaining lands of the parent parcel. There are no plans to develop the rest of the site. As a result, the project will not create a demand for public services, such as police or EMS or highway improvements, beyond that which the facility already demands.

Community Plans

The Greenbush facility expansion will not create a material conflict with the community's current plans or goals as officially approved or adopted. Both Towns' land use plans include the facility parcel within their office use zones. The proposed facility is consistent with intended uses in the zones.

Cumulative Impacts

No significant adverse cumulative impacts are expected from this action. The facility expansion will not induce growth in the Town or otherwise change the commercial / office character of the property. The action is also not part of a larger plan of development beyond the limited facility expansion being proposed.

As required by SEQRA, the Town Board considered reasonably related long-term, short-term, direct, indirect and cumulative impacts including other simultaneous or subsequent actions which are: (1) included in any long range plan of which the facility is a part; (2) likely to be undertaken as a result of the facility; or (3) dependent on the facility. No such actions were identified.

Based on the foregoing, the Greenbush facility expansion will not create any significant adverse cumulative impacts.

Miscellaneous

The site does not provide any public open space or recreational opportunities known to be significant to the community. The land is privately owned and secured. The site has not been identified as a future public recreational opportunity or as an important open space resource in the Town. There are no public recreational areas nearby that would be adversely affected by the proposed facility.

The Town Board received comments from the CDTA on the project. Specifically, CDTA suggested the following: (1) adding pedestrian accommodations within the site; (2) install bicycle racks in close proximity to a building entrance; and (3) establish a sidewalk along the entire length of Krey Boulevard from the NYISO building to 3d Avenue Extension. To accommodate pedestrians on the site, a sidewalk will be installed from the guard house to the front entrance of the building. In addition, bicycle racks currently existing next to the building's entrance. These bicycle racks will remain as part of the project. However, for the following reasons, the Board determines that a sidewalk along the entire length of Krey Boulevard is not warranted: (a) there are no sidewalks along 3d Ave Extension, so there would be no place to connect a new sidewalk to; (b) the project will not create heavy volumes of pedestrian traffic that would warrant a new sidewalk; (c) no one at the NYISO facility currently uses CDTA services that would warrant the installation of a new sidewalk; (d) there are no nearby services (like retail centers, public parks or recreation areas, etc) that would generate pedestrian traffic that would use a new sidewalk; (e) the project is located in the Greenbush Commercial Park which generates little to no pedestrian traffic; (f) the CDTA comments acknowledge that its Shuttle Bee Bus Service will actually deviate to drop off passengers at the NYISO entrance, so no sidewalks would be needed; and (g) NYISO does not own or control the entire right-of-way along Krey Boulevard and therefore could not install a sidewalk.

The proposed facility is not in close proximity to a designated Critical Environmental Area ("CEA").

As evidenced above, the Greenbush facility expansion will not create changes in two or more elements of the environment, no one of which has a significant impact on the environment, but when considered cumulatively would create one or more significant adverse environmental impacts.

Finally, as discussed more fully above, to the extent the facility expansion may generate traffic at intersections within the Western East Greenbush Generic Environmental Impact Statement ("GEIS") study area, or place an additional demand on public services (sewer, water, police, fire, etc.) which are provided from within the study area, such traffic and demands will not be significant or otherwise result in an exceedance of any of the impact thresholds established in the GEIS. More specifically, trips to and from the facility, water and sewer usage, and other demands on public infrastructure and services will increase only marginally after the expansion is complete. The additional trips will not, however, impair levels of service at any nearby intersections, nor will the additional water, sewer and other public service demands attributable to the expansion impair the functionality of these systems in any material way, or create a demand which exceeds the capacity of these systems. In fact, the total additional square footage, and number of staff and visitors anticipated in connection with the Greenbush facility expansion will remain below the hypothetical growth opportunity previously assigned to the facility by the Town and other governmental agencies in connection with the development of the Greenbush Commerce Park (of which the facility is a part). The Greenbush Commerce Park was previously the subject of three prior SEQRA reviews, including the preparation of a draft and final environmental impact statement by the Rensselaer County Industrial Development Agency. The environmental conditions on the site were thoroughly studied and evaluated as part of these prior SEQRA reviews, and available to the Town in formulating the GEIS study area and thresholds.

Findings

In addition to the foregoing the Town Board has also determined that the Project will not result in:

1. The creation of a material conflict with the Town of East Greenbush's current community development plans or goals as officially approved and adopted. The Project is consistent with the Town's comprehensive Plan and the character of the area surrounding the site.
2. The impairment of the environmental characteristics of a Critical Environmental Area as designated pursuant to 6 NYCRR 617.14(g). No such area exists in or adjacent to the site.
3. A major change in use of either the quantity or type of energy. The Project will increase the existing energy demands of the community. However, with the extension of the appropriate service infrastructure, there will be adequate demand to serve the Project.

4. The creation of a hazard to human health. The Project will promote the public health, safety and welfare by providing appropriate mitigation measures satisfying the requirements of the Town's Route 4 Generic Environmental Impact Statement and associated Statement of Findings.
5. The creation of a material demand for other actions that would result in one of the above consequences. The Project will not result in a demand for other actions.
6. Changes in two or more elements of the environment, no one of which has a significant impact on the environment, but when considered together result in a substantial adverse impact on the environment. No such changes will result from the Project.
7. Two or more related actions undertaken, funded or approved by an agency, none of which has or would have a significant impact on the environment, but when considered cumulatively would meet one or more of the criteria in 6 NYCRR 617.7(c). No such cumulative impacts will occur.

For the reasons set forth above, the proposed Project is in conformance with the Western GEIS and Statement of Findings, will not have any significant adverse impact on the environment and will be subject to the GEIS mitigation fees established in the Western GEIS Statement of Findings and the issuance of a negative declaration under SEQRA is warranted.

If Conditioned Negative Declaration (provide on attachment the specific mitigation measures imposed, and identify comment period (not less than 30 days from date of publication In the ENB)

For Further Information:

Contact Person: James Moore, AIA, Director of Planning, Town of East Greenbush

Address: 225 Columbia Turnpike, Rensselaer, New York 12144

Telephone Number: 518 694-4011

For Type 1 Actions and Conditioned Negative Declarations, a Copy of this Notice is sent to:

Chief Executive Officer, Town / City / Village of East Greenbush, Rick McCabe, Supervisor

Other involved agencies (If any)

East Greenbush Town Board
ATTN: Rick McCabe, Supervisor
(518) 477-2005 – Ext. 202

Rensselaer County Health Department
ATTN: Roy Champagne, (518) 270-2962

Rensselaer County Water/ Sewer Authority
ATTN: John Fetscher, (518) 270-2914
cc: Phil Dixon, Whiteman Osterman Hanna
(518) 487-7726

NYS Dept. of Environmental Conservation – Region 4
ATTN: Nancy Adams, (518) 357-2069

East Greenbush Planning Board
ATTN: Rich Benko, (518) 694-4011

U.S. Army Corp of Engineers
ATTN: Christine Delorier,
(518) 270-0588

Town of North Greenbush Planning Board
ATTN: Chip Ashworth (518) 283-5313

NYS Public Service Commission
ATTN: Jaclyn Brilling, (518) 474-6530

Town of North Greenbush Zoning Board
ATTN: Zoning Board Chairperson

Town of Guilderland
ATTN: Donald Cropsey

Rensselaer County Bureau of Planning
ATTN: Robert Pasinella, Jr., (518) 270-2921

Capital District Transportation Authority
ATTN: Kristina Younger, (518) 482-4199

Bruen Rescue Squad
ATTN: Board of Directors, (518) 477-8243

Renss. Co. Industrial Development Agency
ATTN: Robert Pasinella, Jr., (518) 270-2921

East Greenbush Police Department
ATTN: Christopher Lavin, (518) 479-2525

NYS Office of Parks, Recreation & Historic Preservation
ATTN: Douglas P. Mackey. (518) 237-8643

East Greenbush Traffic Safety Committee
ATTN: Dean Kennedy (518) 477-2005

NYS Dept. of Transportation – Region 1
ATTN: Kevin Novak, (518) 388-0434

National Heritage Program
ATTN: Jean Pietrusiak (518) 402-8935

City of Rensselaer
ATTN: Marybeth Petit (518) 465-1693

Capital District Transportation Committee
ATTN: Anne Benware, (518) 458-2161

Rensselaer County Bureau of Planning
ATTN: Robert Pasinella, Jr., (518) 270-2921

Applicant (If any) X
X
X

Environmental Notice Bulletin, Room 538, 50 Wolf Road, Albany NY, 12233-1750 (Type One Actions only)

Attachment VIII.

Certificate of Incorporation

A copy of the Certificate of Incorporation of The New York Independent System Operator, Inc., and all amendments thereto, was filed with the New York Public Service Commission on December 10, 2009 in connection with Case No. 09-E-0857.

Attachment IX.

Affidavit of Rick Gonzales,
Senior Vice President and Chief Operating Officer of the NYISO

NEW YORK STATE PUBLIC SERVICE COMMISSION

----------X

In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

Ricardo Gonzales, being duly sworn, deposes and says:

1. I am the Senior Vice President and Chief Operating Officer of the New York Independent System Operator, Inc. ("NYISO"). My responsibilities include the day-to-day reliable operation of the New York Control Area transmission system, in compliance with all applicable NERC, NPCC, and NYSRC reliability rules and standards, operation of the ISO Day-Ahead and Real-Time Wholesale Energy Markets and validation of the Energy Markets' prices, operation of the NYISO Transmission Congestion Contract and Installed Capacity Markets. I am responsible for ensuring that the NYISO Power Control Center Operations staff, power control center, and related facilities are adequate to meet the reliability needs of the New York State Bulk Power System today and in the future.

2. I have read the foregoing Petition and understand its contents. In support of the Petition, I hereby attest to the following:

Meeting Expanded Operational and Reliability Needs

3. Before deciding to proceed with the Project, the adequacy of the existing NYISO facilities was assessed not only against current operational responsibilities and reliability requirements, but also against future responsibilities and requirements. The assessment considered the lead time necessary to develop new control center facilities or to renovate existing facilities before the NYISO's responsibilities surpass its capabilities. The following is a discussion of the expanded market, operational and reliability needs that formed the basis of the NYISO's assessment.

Broader Regional Markets Initiatives

4. The NYISO, in coordination with its neighboring Independent System Operators ("ISOs") and Regional Transmission Organizations ("RTOs"), intends to implement a set of related market enhancements, collectively called the Broader Regional Markets initiatives. These initiatives will improve the NYISO's ability to address complex seams issues, market inefficiencies, and reliability challenges that result from unscheduled power flows around Lake Erie. More generally, the initiatives will improve inter-regional ISO efficiencies through the availability of enhanced market operations and ISO-to-ISO coordination. These market enhancements are planned to be incorporated beginning in 2013 and, therefore, any required facility upgrades to take full advantage of these initiatives should be in place in that year. The following is a summary of some of the Broader Regional Market initiatives:

- Buy-Through of Congestion - Cost allocation and recovery of congestion costs from those external parties not currently participating in the NYISO markets but responsible, in part, for creating transmission system congestion. Buy-Through of Congestion would require that the congestion cost resulting from a party's transaction schedule be charged

based on the physical flow of power, unlike the current settlement determination that is based only on the party's transaction contract path. For example, a party's transaction scheduled from Ontario to MISO to PJM would be charged for any resulting congestion impact in New York.

- Market to Market Coordination - Redispatch of generators within a neighboring control area to address transmission constraints when that dispatch is more cost effective than the dispatch of generators within the control area experiencing the constraints.

- Interface Pricing Revisions - Improvement of the pricing of energy for NYISO transaction schedules between individual grid operators (ISOs and RTOs) to allow for more efficient inter-regional power transfers.

- Interregional Transaction Coordination - Flexible transaction scheduling provisions between individual grid operators (ISOs and RTOs) to improve market and operational efficiency by allowing transaction schedules to more frequently adjust to the ever-changing system conditions and to respond to system contingencies.

These market enhancements are designed to reduce uplift costs associated with congestion and real-time event management, to improve the capability to incorporate intermittent resources, and, thereby, to lower total system operating costs. The NYISO expects the Broader Regional Market initiatives to enhance reliability through regional dispatch and result in cost savings of up to $193,000,000 annually[1] that will benefit consumers in the State of New York.

[1] *See* Potomac Report, Page 12.

Smart Grid Technologies

5. The NYISO is in the preliminary stages of a Department of Energy ("DOE") funded project, along with the New York Transmission Owners, to deploy a network of phasor measurement units ("PMUs") on the New York power grid and to integrate the data collected from the PMUs to provide greater situational awareness for NYISO control center operators. This project is scheduled to be implemented by 2013. The NYISO intends to integrate PMU data with existing NYISO systems at its control centers. The applications that PMU technology will support include:

- Wide-area visualization and monitoring.
- Phase angle and frequency monitoring.
- Inter-area oscillation detection and analysis.
- Proximity to voltage collapse.
- Dynamic model validation.
- Fast frequency regulation.
- Potential optimization of capacitor operation for reliability and loss reduction.

In the long-term, the NYISO's PMU network will interoperate with PMU networks in New England, the Mid-Atlantic, the Midwest, and Ontario to create broader situational awareness in the NYISO's control centers and in control centers throughout the Eastern Interconnection. This may help to avoid major system disturbances such as the 2003 Northeast regional blackout,

which resulted in significant costs[2].

6. Planned enhancements to the NYISO's control center layout, to be implemented as part of the Project (as described in the Petition), will provide necessary infrastructure and state-of-the-art visual displays to receive, process, and monitor changing system conditions effectively throughout the Eastern Interconnection received via the PMU network, providing the NYISO with the enhanced capability to take actions to assist in the maintenance of reliable system operations.

7. The Project's objectives are fully consistent with the New York Public Service Commission's ("NYPSC" or the "Commission") views about the value of PMUs to prevent or mitigate system disturbances. The New York State Department of Public Service *Second Report on the August 14, 2003 Blackout* identifies needed steps to avoid future outages. The report states that:

> The next step is modeling changes that could be made to the transmission system to see if those changes could prevent or mitigate the consequences of similar events. Some of the more conventional steps that are being examined include reviews of protective relay settings for transmission lines and generators, evaluations of the adequacy of underfrequency and undervoltage load shedding, assessments of the adequacy of transmission connections within New York and with our neighbors, ***and use of sophisticated measurement devices (phasor measurement) to monitor the status of the entire Eastern Interconnection (most of the United States and Canada east of the Rockies)***. [3]

The Commission further expressed support for a New York State PMU network in its July 27,

[2] For the United States alone, costs estimates resulting from the 2003 blackout ranged from $4 to $10 billion. *U.S. Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* (April 2004).

[3] The New York State Department of Public Service Second Report on the August 14, 2003 Blackout – October 2005, at 19 (emphasis added).

2009 Order preliminarily authorizing rate recovery of funds to match DOE stimulus funds for the thirty-nine PMUs to be installed by the Transmission Owners.[4] The NYPSC stated that:

> The statewide PMU network would provide a wide area and local region visualization of the transmission system. The system would be set up with alarms to notify operators of possible voltage violations and angular separation of generators in other control areas and to be able to take preventive measures. In addition, the system would provide a history for event re-creation following an event. Each utility is expected to retrieve the data and have one or more phasor data concentrators to pick up the data and forward the data to the NYISO. In concert with the NYISO project, RPI will develop software to collect the data, screen for bad data, alarm for conditions that could lead to a system collapse, and enable the users to work with information received from other ISO control areas. The full scale application of PMU[s] is expected to take several years to accomplish and develop the analytical tools to work with it. Because this project provides *system-wide benefits*, *expands* an existing program and provides *foundational information* for the development of more advanced operational systems, we will approve it.[5]

The Project was conceived, in part, to maximize and enhance the benefits from the integration of the PMU data and provide NYISO with improved visualization capabilities and situational awareness. Had such tools been in place throughout the Eastern Interconnection in 2003, it is possible that the August 14, 2003 blackout could have been prevented or at least its effects limited.[6] The statewide PMU network is scheduled to be completed in 2013. Development of the Project and the statewide PMU network in parallel will provide the best platform for integrating the PMUs to improve its situational awareness and better allow for actions to be taken to guard against future disturbances.

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[4] Case 09-E-0310, Matter of the American Recovery and Reinvestment Act of 2009 – Utility Filings for New York Economic Stimulus, Order Authorizing Recovery of Costs Associated with Stimulus Projects (issued and effective July 27, 2009), at 20-21.

[5] Id., Order at 21 (emphasis in original).

[6] The Task Force estimated the total cost in the United States of the August 14, 2003 blackout was between $4 billion and $10 billion. *See* Id., Final Report at 2.

Intermittent Renewable Energy Resources

8. The Project is expected to meet longer-term reliability challenges for at least the next twenty years. As greater amounts of renewable resources and related technologies are brought online in New York[7] and elsewhere, today's technology for managing such resources and related storage and grid management devices may not be adequate. Specifically, reliability concerns may arise from infrequent and largely unpredictable wind plant ramp events that must be managed. Such wind plant ramp events may occur during sudden drops in wind speeds or when wind speeds approach cut-out levels that can also cause sudden large drops in wind generation output levels. As greater amounts of renewable resources are integrated, NYISO may need improved tools to manage wind ramp events, including the ability to receive and process real-time data regarding wind speed and direction, requiring state-of-the-art monitoring capability using enhanced visualization displays and further enhancements to its current wind forecasting capabilities. In addition, new limited energy storage technologies are being developed, such as flywheel and large scale battery technologies, to compliment the variable output of renewable resources.

9. Moreover, considerable research is being applied to the problems of coordinated management of intermittent resources and storage, which may lead to future automation in the control of these resources. As the level of intermittent energy resources, such as wind and solar, increases, the NYISO may need additional operations staff at its control centers to reliably and efficiently manage these technologies. The Project will provide the infrastructure resources the NYISO needs to enhance situational awareness and forecasting capabilities, as well as the physical space needed to accommodate additional control center staff and equipment to manage

[7] There are currently approximately 7,000 MW of wind projects in the NYISO's interconnection queue.

the increased amounts of wind and other intermittent resources.

10. Another related area of concern is the anticipated impact to New York State's daily load profile resulting from a high penetration of Plug in Hybrid Electric Vehicles ("PHEVs"). It is likely that technologies to manage PHEVs' charging demand and other demand response will be developed to maintain reliability. The Project will provide situational awareness to enhance monitoring capabilities in order to manage PHEVs, and the physical space to add additional control center staffing, if and when required.

NERC Requirements

11. The mandatory North American Electric Reliability Corporation ("NERC") and other reliability standards that apply to the NYISO will continue to evolve and place additional requirements on the operation of the bulk electric system and wholesale markets. The FERC has directed NERC to update and revise its standards in multiple respects. The NYISO control centers must contain sufficient physical space and flexibility to incorporate new control center technologies and additional staffing to enable the NYISO to maintain compliance with evolving reliability requirements. Most significantly, on November 18, 2010, FERC directed NERC to expand the definition of Bulk Electric System facilities to apply to all New York State transmission facilities 100 kV and above, excluding radial lines and distribution facilities.[8]

12. FERC has directed NERC to file the revised definition of Bulk Electric System facilities in one year, and allowed for a transition plan of up to 18 months. If NERC adopts the 100 kV standard for the Bulk Electric System definition, then the NYISO will require at least one

[8] *Revision to Electric Reliability Organization Definition of Bulk Electric System*, Final Rule, Order No. 743 FERC Stats. & Regs. 133 FR 61150 (Nov. 18, 2010).

additional control center position to comply with the expanded reliability oversight responsibilities for the transmission facilities 100 kV and above. Accordingly, the NYISO will need to be prepared to carry out additional operational, oversight and reliability coordination approximately 30 months from FERC's November, 2010 order (mid-2013). Completion of the Project will provide sufficient physical space to accommodate the required additional future operator positions to the NYISO control center if and when NERC elects to implement the new Bulk Electric System definition.

Specific Facilities Requirements to Meet Expanded Responsibilities

13. The NYISO will need to accommodate the following capabilities in its control centers to implement the enhanced operational and reliability responsibilities described above:

- Enhanced situational awareness by including additional visualization technologies in its control centers; and

- Accommodate additional control room operations positions to manage related monitoring and coordination functions.

Enhancing Situational Awareness

14. The NYISO's control centers will require improvements in visualization capabilities in the areas of:

- Broader Regional Markets initiatives.

- PMU data and the results of the related applications.

15. The NYISO will enhance operators' situational awareness via advanced video display

technology and a significant dedicated area of video wall displays, which requires space and new technology in both of the NYISO's control centers. The report on the August 2003 blackout[9] pointed to a lack of situational awareness by utility operators as a key element in the events leading to the blackout. While the report does not recommend or require large format video displays as a remedy for this problem, most of the industry's efforts in developing advanced visualization tools have focused on video presentations, both small format (on the operators' desks) and large format (video walls).[10]

Additions to the Control Room and Operations Staff

16. The NYISO will also need to augment control room staff to manage its expanded operational and reliability responsibilities. The NYISO has identified, and planned for, the inclusion of the following additional control room staff responsibilities:

- The Broader Regional Markets initiatives will add new workload to:
    - Establish and validate transaction schedules with each of the NYISO's four neighboring control areas as often as every five or fifteen minutes, rather than on an hourly basis as is currently done.
    - Market-to-Market coordination requires coordinating and validating redispatch action for, and from, neighboring control areas to ensure efficient resource utilization and satisfaction of reliability criteria.

[9] *U.S. Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* (April 2004).

[10] For examples of recent investigations, see: http://www.oe.energy.gov/our_organization/rnd.htm; http://www.pnl.gov/main/publications/external/technical_reports/PNNL-19103.pdf; http://www.wrldc.com/docs/VHPSO_FINAL.pdf

- Buy-Through of Congestion requires active monitoring for, and identification of, parallel flow impacts on NYISO constrained facilities to minimize unrecovered constraint management costs.

- The NYISO will have to add at least one additional control room staff position to implement the intra-hour transaction scheduling requirement of the Broader Regional Market initiatives.

- The development of Smart Grid Technologies is accelerating and the integration of these technologies into the grid is increasing. Control centers must be equipped to manage reliability concerns identified by PMUs and other Smart Grid Technologies. It is possible that, within the expected lifetime of the Project, one or more new control center positions for the management of Smart Grid and renewable resources will be required.

- Depending on NERC's response to the FERC order to expand the definition of Bulk Electric System facilities, the NYISO may be required to add one additional transmission operator position in the control room to carry out additional operational and oversight responsibilities with respect to lower voltage transmission systems.

17. The NYISO control centers should also contain sufficient space to accommodate an adequate staffing level necessary during events where the primary facilities are compromised or unavailable. The additional staff positions (as described above) will further exacerbate existing space limitations. Lack of adequate space at the alternate control center during a contingency event presents an unacceptable risk to reliability and to business continuity. Facility accommodations must provide for sufficient space for personnel at both the primary and alternate control center. The Project will provide sufficient space at both locations in order to

maintain continued and uninterrupted reliability and market operations during a contingency event.

18. In defining the scope and design for the Project, the NYISO carefully considered its current business requirements as well as reasonable expectations for future expansion and growth. While the NYISO currently expects that the scope of the Project will satisfy business requirements for the foreseeable future, certain design considerations were incorporated that could allow reasonable expansions should unforeseen changes to the NYISO business model or responsibilities occur in the future. Design considerations included allowances for future additional operator positions, site design that could accommodate future incremental building additions, and interior design that could accommodate office reconfiguration for additional seating. It is not expected that these future expansions will be required, but the flexibility of the design will permit future expansion at a reasonable cost should requirements dictate.

Ricardo Gonzales

Ricardo Gonzales

Subscribed and sworn to
before me this 21st day
of December, 2010

Constance Andonian

Notary Public, State of New York
Qualified in Westchester County
Commission Expires: 12/26/13

CONSTANCE ANDONIAN
Notary Public, State of New York
No. 01AN4960360
Qualified in Westchester County
Commission Expires December 26, 2013

Attachment X.

Affidavit of Richard Dewey,
Senior Vice President and Chief Information Officer of the NYISO

NEW YORK STATE PUBLIC SERVICE COMMISSION

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In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

Richard Dewey, being duly sworn, deposes and says:

1. I am the Senior Vice President and Chief Information Officer of the New York Independent System Operator, Inc. (the "NYISO"). As such, I am responsible for all aspects of the technology and facilities infrastructure used by the NYISO to reliably operate the New York bulk power grid and administer the New York wholesale electricity markets. My responsibilities in the areas of technology include technology strategy, system design and planning, technical infrastructure management and support, quality assurance, and cyber security oversight and administration. My responsibilities in the areas of facilities include the management and maintenance of all NYISO buildings and grounds, site planning, and physical security oversight and administration.

2. I have read the foregoing Petition and understand its contents. In support of the Petition, I hereby attest to the following:

Deficiencies at Existing Facilities

3. After identifying the expanded responsibilities facing the NYISO and determining what will be required to meet those responsibilities, the NYISO spent considerable time assessing its current facilities to determine their suitability to meet these changing requirements, any deficiencies that need to be addressed, and to what extent the facilities can be modified or expanded, without significant new construction. The following is a summary of that assessment divided between the three key facilities: (1) the current primary control center at the NYISO's Carman Road facility (the "Carman Property"), (2) the alternate control center and additional facilities at the NYISO's Krey Boulevard facility (the "Krey Property"), and (3) the data center at the Carman Property.

Current Primary Control Center

4. The facility at the Carman Property was purpose-built as a control center in 1969 by the predecessor of the NYISO – the New York Power Pool – which used the building for offices and a control center from that date. It is the oldest of the North American ISO and RTO control centers.

5. The layout and construction of the Carman Property control center presents challenges to the continued reliable and efficient operation of the New York State electric grid. The deficiencies that should be remedied in the near future to ensure continued reliable operations in light of the NYISO's expanded responsibilities can be grouped as follows:

- Control center layout.
- Infrastructure deficiencies.

- Future expansion requirements.

Layout

6. While the NYISO and the New York Power Pool have maintained and renovated the control center over its life, there are several problems with the current layout and infrastructure that cannot be resolved without major construction.

7. Installation of video display walls and related improvements will require a general reconfiguration of the control center to maximize visibility and improve situational awareness for control center operators. While the existing tile mapboard has certain advantages, most ISO control centers have implemented video display walls in place of or supplemental to mapboards. The set of data presented on a video wall and the form of presentation can be changed moment-to-moment and the technology allows for the rapid deployment of new presentations of data. These capabilities will help realize the full value of the Broader Regional Markets initiatives, and Smart Grid technologies, and will assist with the integration of renewable resources. Large format video displays also allow for improved situational awareness for all control center operator positions. This will provide a significant advantage if the control center's operator complement is increased, and, therefore, the distance from the furthest operator to the wall displays lengthens.

Infrastructure

8. The Carman Property control center currently supports reliable and efficient electric grid operations. However, as a result of the facility's age, there are problems that need to be addressed in the near future to ensure continued reliable operations including the following:

- The existing 600 kW emergency generators are over 30 years old and are nearing end of life. Two new 1500 kW generators have been purchased as replacements. Before the new generators can be installed, there will have to be a substantial reconfiguration of the building power distribution system. Reconfiguration of the building power system will replace much of the electric switchgear that connects the emergency generators to the building.

- The existing power distribution and UPS equipment are protected by manual fire extinguishers, and the area is not suitable for the installation of a gas-based fire suppression system. An automated fire suppression system is highly desirable as fires have proven to be one of the most probable risks to control centers. This could reasonably be accomplished during the installation of new generators and switchgear.

- The in-ground diesel fuel tanks for the emergency generators are nearing end of life and will need replacement to mitigate the risk of fuel leakage.

- The building roof is nearing end of life and must be replaced to prevent further deterioration and possible equipment damage due to water leaks.

- Many of the pumps, switchgear components, and mechanical systems are original to the building and nearing end of life. These systems will need to be replaced or rebuilt to maintain reliable operations.

Future Expansion

9. The existing Carman Property and Krey Property control centers meet current reliability needs. However, in the near future both control centers will need to be expanded to support the

NYISO's expanded responsibilities. Given that it is reasonable to expect that additional operating positions may be needed beyond those now planned, any renovation of the control centers should include space for additional operator positions beyond what has been identified. The Carman Property control center is large enough to accommodate the minimum number of additional operator position consoles, but will require construction to incorporate further operator position consoles, particularly in conjunction with the redevelopment of the existing wallboard with video technology. If the NYISO were to renovate the Carman Property as the primary control center, construction could take 24 to 36 months.[1] The NYISO would need to operate from the Krey Property alternate control center for some of the construction time. As discussed below, the Krey Property control center is not presently suitable for long-term operation.

Krey Property Control Center

10. In 2005, NYISO purchased the Krey Property to consolidate the majority of its staff into a single location. As part of the renovations to the building, a new data center and a new alternate control center were constructed within the building. The relocation of the alternate control center was primarily driven by the NYISO's need to resolve certain security risks regarding the location of the then-existing alternate control center that had been identified by several security studies by U.S. agencies and the NYISO's internal audit staff.[2]

11. The control center at the Krey Property currently provides a reliable alternate control center for the NYISO's existing responsibilities, as required by NERC. However, the layout and construction of the control center present potential challenges to continued reliable and efficient

[1] KEMA Report (as defined in the Petition), page 4-4.

[2] KEMA Report, page 5-1.

operation of the New York State electric grid. The deficiencies that must be remedied in the near future to maintain continued reliable operations in light of the NYISO's expanding responsibilities can be grouped as follows:

- Control center layout.
- Infrastructure deficiencies.
- Future expansion requirements.

Layout

12. While the Carman Property has adequate space within the control center security zone, the Krey Property control center space is very limited. If the NYISO is to operate from the Krey Property control center for more than a few days, arrangements must be made to move personnel normally occupying the offices surrounding the alternate control center to make room for the required operations support personnel from the primary control center. If the Carman Property is unusable for more than a few weeks, approximately 75 employees would need to move to the Krey Property. Business continuity plans provide for temporary relocation, but, over time, efficiency of operations will suffer if the relocation of staff is required for a longer period of time. These 75 employees do not include approximately 10 management and administrative staff who would also be relocated if operations were to move to the Krey Property for more than a few days.

13. The Krey Property control center video display wall is a two-high by twelve-wide matrix of projection cubes, installed into the front wall of the control room. This display area of 512 square feet is less than 25% of the Carman Property control center wallboard size (2090 square

feet). The two-high column of projectors on the left side of the wall is used to display chart recorder data, and the remaining screens show the transmission one-line diagrams. The Phase 1 telemetry data is presented in the chart recorder space, but the data feed at the Krey Property control center is not considered as reliable as it is dependent on equipment at the Carman Property control center. If the Carman Property control center is out of service, this data will not be available at the Krey Property control center.

14. The size of the video wall is limited by the length of the room and the low ceiling height. While this video display wall is adequate for the current level of operations, it will not be adequate for the expansion required to meet the NYISO's expanded responsibilities. This is particularly true when considering video display capabilities for enhanced situational awareness.

Infrastructure

15. If the Krey Property control center is to continue as a reliable alternate control center for even the near future, shortcomings of the power supply system need to be addressed. The Krey Property is fed from a single substation, and uses a single generator for non-critical load and another single generator for critical loads. The supply to critical loads is configured for an additional generator that has not yet been installed. There are no provisions for sharing or transferring loads between the two generators or for selective load shedding.

16. The reliability of the Krey Property power supply is on the order of 97.5%, compared to 99.9% for the Carman Property.[3] This is acceptable for its current use as an alternate control center, but not acceptable if it is to be considered a viable primary control center.

[3] This comparison assumes the complete loss of utility power and reflect the industry norms for the difference between a single emergency generator and an 'N+1' configuration.

Future Expansion

17. The Krey Property control center meets current reliability requirements. However, in the near future both control centers will need to be expanded, replaced, or renovated to support the expanded responsibilities identified above.

18. One additional control room console position could possibly be added in the Krey Property control center by eliminating some office space. However, the view of the video display from that console would be severely compromised with the acute angle to the screens, exacerbating an already marginal situation. Expansion of the room itself is limited by its placement within the building; it is bordered on three sides by fixed walls. The critical problem will be expanding the video display as needed to improve situational awareness. The ceiling height is limited by the ceiling structure, which cannot reasonably be altered. This severely limits the amount of data that can be shown on the video displays.

Carman Property Data Center

19. The NYISO, and its predecessor, the New York Power Pool, have realized good value from the Carman Property Data Center. Over its forty-year life the Carman Property Data Center has been expanded, augmented, and renovated as needs and technology have changed. The Carman Property Data Center is not without problems. None of these problems in isolation is sufficient to necessitate replacing the center. However, considering the age of the building, and the risks to reliability and business continuity that are presented if the NYISO had to carry out its core functions and new responsibilities at its existing facilities for an extended period of time, the NYISO believes that a new data center is warranted and that construction should be completed as soon as possible.

20. The Carman Property Data Center is an inefficient design. The cost of this inefficiency is estimated to be $100,000 to $200,000 per year in excess energy costs that will be saved in a new data center.[4] While not enough to by itself justify a new facility, the savings over the lifetime of a new data center can offset some of the construction cost. The sooner these benefits could be realized, the greater the payback.

21. Also, the near-term plans for the NYISO's information technology infrastructure reinforce the need for a new data center. The NYISO refreshes its IT infrastructure over multi-year cycles, targeted at three years. Several significant projects now underway would benefit from installation directly into a new data center (as opposed to installation into the existing center and subsequent movement to a new center). Benefits would include reduced costs (labor and shorter project cycles) by avoiding the work to relocate the new hardware from the existing center to the new center and reduced risk of outages for the same reason.

Alternatives and Why Proposed Project is Best Option

22. As described above, both the Carman Property control center and the Krey Property control center have shortcomings in their layout, infrastructure, and their capacity to accommodate the expected new functionality and additional operating staff required to implement the NYISO's expanded responsibilities. The most pressing issues are the space constraints at the Krey Property control center, the out-of-date wall displays at the Carman Property control center, the aging infrastructure at the Carman Property, and the need for a new Carman Property Data Center.

[4] See KEMA Report, page 6-1.

23. The constraints imposed by the conditions of the facilities at the Carman Property and the Krey Property and the requirements for reliable operations limit the effective alternatives to the following:

- In accordance with industry best practices, the NYISO expects to conduct operations from a single control center (while the other center is planned out of service) for a limited time only (one day or less).

- The needed renovations at the Carman Property are extensive and, depending on the approach, the construction schedule could extend 24 to 36 months. During this construction time, the control center may not be available for operation as a primary or alternate control center for significant periods.

- The adequacy of the Krey Property control center to support operations over a long term will lessen over time as control room staffing increases. Current staff planning would at least reach, if not exceed, the design capacity of the Krey Property control center within the next calendar year.

- The Krey Property control center cannot be meaningfully expanded due to the building's design and construction.

24. These constraints would require development of an interim alternate control center during the necessary renovation of the Carman Property control center. Given the costs to establish an adequate facility and the fact that such a facility would be of limited long term value to the NYISO, this alternative is inadvisable. If a third control center must be developed during renovation of the Carman Property, it would be better to devote such efforts to a new primary

control center.

25. With the above conclusions in mind, the NYISO analyzed, from a cost-benefit standpoint, the following two possible projects as viable means by which to meet the expanded responsibilities described above.

Alternative 1

26. This option includes the following:

- Renovate the Carman Road facility to house an expanded primary control center and new data center.
- Expand the Krey Property to house a renovated alternate control center.
- Update the Krey Property building infrastructure to support greater redundancy for commercial and emergency power.
- Provide low-tech temporary building options located at Krey Property for operations support staff when operating as control center for extended periods.

27. The Carman Property control center would be expanded to accommodate the additional operating positions necessary for the Broader Regional Markets initiative and other expanded responsibilities. However, expanding beyond those additional positions would involve significant brick and mortar modifications since the control room is built out to existing exterior walls.

28. The existing alternate control center at the Krey Property would be relocated to a new

15,000 square foot addition to the existing building. This addition would only house the control center and a new video wallboard similar to the primary control center. Future expansion of the alternate control center may not be viable since it would be built out to exterior walls.

29. This plan includes provision for housing the additional operations staff at the Krey Property at the Krey Property in temporary trailers for extended operation.

30. The plan would accommodate the need for increased situational awareness and smart grid functions on the video wallboards.

31. The 2011-2013 cost estimate for this alternative is $56,200,000.[5] This alternative would achieve approximately $150,000 in energy savings per year once the Carman Property data center commences operation and the old data center is retired.[6]

Alternative 2

32. This option includes the following:

- New addition at the Krey Property site to house an expanded primary control center and office space for operations support staff.
- Update the Krey Property infrastructure to support greater redundancy for commercial and emergency power
- Renovate the Carman Property facilities to house a new data center, upgrade the emergency generators, and remediate aging infrastructure.

[5] This estimate excludes costs incurred in 2009 and 2010.

[6] EIG Report (as defined in the Petition), page 14. Savings would begin in year 3 of the Project.

33. The new Krey Property control center would be built initially for the additional operating positions that would address short term needs and accommodate potential long term needs, as envisioned by NYISO. Expansion beyond those additional positions would be possible since renovations would involve interior sheetrock walls rather than exterior building walls.

34. Under this alternative, the existing Carman Property control center would become the new alternate control center. The static mapboard would remain and additional large video screens would be added around the side perimeters of the room for increased situational awareness. This site also has the ability to be renovated at a future time to replace the static mapboard with a video wallboard and to reposition the operator consoles to accommodate additional operators.

35. If the new alternate control center is required to be operational for extended periods (greater than two weeks), the operations support staff would be housed in existing office space, conference rooms and potentially the old data center area.

36. The 2011-2013 cost estimate for this alternative is $48,900,000.[7] This alternative would achieve approximately $150,000 in energy savings per year once the Carman Property data center begins operation and the old data center is retired.[8]

37. Under this alternative, the NYISO has also identified gains in internal operational efficiencies by consolidating NYISO functions on a single campus. These efficiencies are estimated to be approximately $700,000 per year beginning in year four of the Project (as

[7] This estimate excludes costs incurred in 2009 and 2010.

[8] EIG Report, page 14. Savings would begin in year 3 of the Project.

defined in the Petition). These savings result from full time equivalent employee reductions of a physical security shift ($200,000) and other staff ($500,000).

Cost Benefit Analysis Conclusions

38. Alternative 2 provides NYISO with the foundation, feasibility and infrastructure to support its current and expanded responsibilities. This option gives the NYISO flexibility in present day operation and in the future in both the control centers. There is also no need for additional temporary facilities to be installed at the alternate control center, since existing offices, conference rooms and the old data center would be available to temporarily accommodate operations staff during a contingency event.

39. The analysis of Alternative 1 indicated that although this option would fulfill the NYISO's present day needs, it will not support future expansion due to limited space. Temporary office space to house the operation support staff would need to be installed at the Krey Property in the event that the primary control center becomes unavailable for use. Even though the trailers would only be installed on an as-needed basis, the NYISO would have to absorb the annual cost to keep them available on short notice. In addition, the Carman Property is limited in its utility because it is an aging facility that has been modified and adapted numerous times to meet the expanding needs of the NYISO.

40. The results from this analysis and findings shows that Alternative 2 is the most economic plan with net present cost of $40,500,000 as compared to $48,200,000 for Alternative 1 through 2021. Alternative 2 positions the NYISO to meet its expanded responsibilities for the future and provides options for the NYISO to accommodate future growth.

Richard Dewey

Subscribed and sworn to
before me this 21st day
of December, 2010.

Notary Public, State of New York
Qualified in Albany County
Commission Expires: 02-12-14

CARL F. PATKA
Notary Public - State of New York
No. 4962209
Qualified in Albany County
My Commission Expires Feb. 12, 2014

Attachment XI.

Affidavit of Mary McGarvey,
Vice President and Chief Financial Officer of the NYISO

NEW YORK STATE PUBLIC SERVICE COMMISSION

----------X

In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

Mary McGarvey, being duly sworn, deposes and says:

1. I am the Vice President and Chief Financial Officer of the New York Independent System Operator, Inc. (the "NYISO"). As such, I am responsible for oversight of all NYISO financial activities, including accounting, financial reporting, budgeting, procurement, credit management, and customer settlements. Further, I also have responsibility for all NYISO treasury functions including investment of NYISO funds, origination of debt issuances and interest rate hedges, and monitoring of debt covenants.

2. I have read the foregoing Petition and understand its contents. In support of the Petition, I hereby attest to the following:

3. The NYISO is mindful of the present economic climate and of the New York Public Service Commission ("NYPSC" or the "Commission") directives to jurisdictional companies to prioritize and, where possible, defer expenditures to mitigate financial impacts upon ratepayers. Nevertheless, it is unavoidable that the NYISO will immediately incur expenditures connected

with its control centers in 2011 and beyond. Because of its 20-year term, the expenditures to be financed through the Proposed Construction Facility (as defined and described in the Petition) will more gradually be passed on to ratepayers than under other possible financing options. Given the immediate need to expend funds to ameliorate deficiencies at its facilities, the NYISO believes that the short-term rate impacts of the Proposed Construction Facility are consistent with the NYPSC's recent rulings.

4. Given the current economic climate, the NYISO has further arranged for the payments to consist of interest only for the first three years of the loan. Estimated amounts to be charged under Rate Schedule 1 over the next three years under the Proposed Construction Facility would be $100,000 for 2011, $1,000,000 for 2012, and $2,300,000 for 2013, representing less than 0.1%, 1%, and 1.5%, of the NYISO's Rate Schedule 1 budget for each respective year. These amounts would, in turn, be allocated among the NYISO's Market Participants according to Rate Schedule 1. Approximately 75% of these amounts are borne by load serving entities including the several public utilities subject to the Commission's retail rate jurisdiction, with the remainder to be paid by other stakeholders. The table attached to the Petition as Attachment XVI further describes the cost of the Proposed Construction Facility to ratepayers in the State of New York.

5. The Proposed Construction Facility, therefore, represents a way to gradually phase-in to rates expenditures the NYISO will be required to make to address the needs described herein at both the NYISO's Carman Road facility (the "Carman Property") and at its Krey Boulevard facility (the "Krey Property").

6. The commercial terms and conditions set forth in the Commitment Letter, attached to the Petition as Attachment I, represent the terms that the NYISO and Berkshire Bank, National

Association ("Berkshire") have agreed to and are representative of those available in the market for comparable loans. Berkshire is administrative agent for a syndicate of lending banks including, as of the date hereof, The Washington Trust Company and Pioneer Savings Bank, National Association (together with Berkshire, the "Lenders"). While the NYISO has not yet executed a definitive loan agreement with the Lenders, it has executed a Commitment Letter and anticipates closing on the Proposed Construction Facility on or before August 31, 2011. The NYISO expects that the material terms and conditions of the definitive loan agreement will be the same as or consistent with those set forth in the Commitment Letter.

7. From 2008 through 2010, the NYISO sought, evaluated and negotiated various financing options for the Project with numerous multi-national, regional, community and other financial institutions, most of which are headquartered or contain a significant banking presence within New York State.[1] When considering financing options to support the Project (as defined and described in the Petition), the overwhelming majority of these potential lenders were either unwilling to provide any loan commitment or limited their offers to a term no longer than five years. Given the estimated useful life of the Project renovations, financing the cost over five years is generally not appropriate.

8. Based on the NYISO's discussions with potential lending sources, it is apparent that, in addition to an increased level of risk aversion amongst lenders, the recent economic crisis has resulted in lenders demanding deposits as part of any loan commitments, maintaining the ability to reset loan pricing and/or deny loan extensions, and avoiding lengthy loan terms. Based on the results of the extensive negotiations mentioned above, the NYISO believes that the Proposed

[1] Throughout 2008 and 2009 the NYISO pursued financing options with numerous potential lenders. During 2010, the NYISO met with 14 potential lenders, many of whom had also expressed interest in 2008 or 2009.

Construction Facility contains terms and conditions that, in their totality, are reasonable and competitive.

9. One of the most advantageous aspects of the Proposed Construction Facility is the length of the loan commitment period. When Berkshire extended the offer for the Proposed Construction Facility to the NYISO in November, 2010, they agreed to hold the loan commitment for a period of nearly ten months (until the August 31, 2011 proposed loan closing). This commitment timeframe allows the NYISO the necessary time to pursue required permits and approvals. Since market conditions and other factors can change significantly over time, it is unusual for financial institutions to extend a financing offer with a commitment period of this duration.

10. Another very favorable condition of the Proposed Construction Facility is the length of the loan term. During the NYISO's negotiations, the predominant loan term suggested by financial institutions was less than 20 years, which would have resulted in debt service repayment costs to Market Participants considerably higher than what is included in the Proposed Construction Facility. However, the 20-year period of the Proposed Construction Facility (3-years' interest-only payments during construction, followed by 17 years of principal and interest payments) defers principal repayment until mid-2014 and permits the NYISO's current and future Market Participants to repay this financing over a period of time commensurate with the long-term investment in the Project.

11. As mentioned above, financial institutions have placed an increased focus on receiving deposits as part of extending loan offers, particularly in connection with large or multi-year transactions. The Proposed Construction Facility contains a requirement to place an amount

equal to 10% of the total loan commitment (up to $4,500,000) in deposits with the Lenders. This level of depository requirement is considerably less than depository requirements in the majority of other financing options that the NYISO has recently considered.

12. As is common in most real estate financings, the Proposed Construction Facility requires that the Lenders receive a security interest as part of this long-term financing. The Lenders were willing to accept a security interest in the Carman Property, which avoids further encumbering the Krey Property. Additionally, most commercial mortgages require a security interest in assets equal to the amount of the financing. However, in this case, the security interest in the Carman Property is a fraction of the maximum principal amount of the Proposed Construction Facility.

13. The covenants required as part of the Proposed Construction Facility are expected to mirror those in the NYISO's existing financings, thereby not introducing any significant financial or operating restrictions and enabling the NYISO to maintain the same level of reporting and monitoring as is required by the NYISO's existing debt.

14. The Proposed Construction Facility also permits the NYISO to prepay the outstanding balance of the loan without penalty, as long as standard notice is provided to the Lenders. This provides the NYISO the flexibility to consider potential alternatives to refinance this loan during its 20-year term, if economic conditions and the lending climate were to significantly change.

15. From a cost perspective, the fees associated with the Proposed Construction Facility are generally consistent with other lending offers considered by the NYISO in connection with the Project and with several of the NYISO's current credit facilities, including the 2010 Revolver and the 2011-2013 Budget Facility (as such credit facilities are described in the Petition). The interest spread on the Proposed Construction Facility is also generally consistent with current

market trends. Based on the one-month LIBOR rate as of December 1, 2010, the annual interest rate for the Proposed Construction Facility would be 3.51%.

Mary McGarvey

Subscribed and sworn to
before me this 21st day
of December, 2010.

Notary Public, State of New York
Qualified in Albany County
Commission Expires: 02-12-14

CARL F. PATKA
Notary Public - State of New York
No. 4962209
Qualified in Albany County
My Commission Expires Feb. 12, 2014

Attachment XII.

Affidavit of David B. Patton (Potomac Economics)

NEW YORK STATE PUBLIC SERVICE COMMISSION

----------X

In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

David B. Patton, Ph.D., being duly sworn, deposes and says:

1. I am the President of Potomac Economics ("Potomac"). As such, I was responsible for Potomac's recent work with The New York Independent System Operator, Inc. ("NYISO") described below, and for production of the Report (as defined below).

2. Potomac Economics is a firm specializing in expert economic analysis and monitoring of wholesale electricity markets. Potomac Economics currently serves as the Market Monitoring Unit ("MMU") for the New York Independent System Operator, Inc. ("NYISO"), as the External Market Monitor for the ISO New England Inc ("ISO-NE" or the "ISO"), and the Independent Market Monitoring Unit for the Midwest ISO ("MISO"). In these roles, we are responsible for assessing the competitive performance of the markets administered by the ISOs, including assisting in the implementation of monitoring plans to identify and remedy market design flaws and abuses of market power. We also provide recommendations regarding market mitigation measures and other market rules.

3. I have worked as an energy economist for nineteen years, focusing primarily on the electric utility and natural gas industries. I have provided strategic advice, analysis, and expert testimony in the areas of electric power industry restructuring, pricing, mergers, and market power. I have also advised existing and prospective ISOs on transmission pricing, market design, and congestion management issues.

4. The NYISO engaged Potomac to assess the potential benefits of the Broader Regional Market initiatives, including potential production cost savings, and to present its findings to the NYISO's Management Committee.

5. Attached hereto as Exhibit A is a presentation prepared by Potomac assessing the potential benefits of some of the Broader Regional Market initiatives ("Report"). The Report provides independent information for consideration by NYISO staff, stakeholders, and regulators.

David B. Patton, Ph.D.

Subscribed and sworn to
before me this 14 day
of December, 2010.

MATTHEW JAMES CARRIER
Notary Public
City/County of Fairfax
Commonwealth of Virginia
Notary registration number - 7233763
My commission expires - Nov. 30, 2013

EXHIBIT A

REPORT

(See attached)

Analysis of the Broader Regional Markets Initiatives

Presented to:

Joint NYISO-IESO-MISO-PJM Stakeholder
Technical Conference on Broader Regional Markets

David B. Patton, Ph.D.
Potomac Economics

September 27, 2010

POTOMAC ECONOMICS

Introduction

- This presentation summarizes our assessment of the potential benefits of some of the Broader Regional Market ("BRM") initiatives.
- In particular, we estimate the production cost savings that may be achieved by:
  - ✓ Coordinating flows around Lake Erie through:
    - – Coordinated congestion management between RTOs; and
    - – The "buy-through congestion" initiative for transaction scheduling); and
  - ✓ Improving the utilization of interfaces between MISO, PJM, NYISO, Ontario, and New England.
- We report production cost savings because it is the most accurate measure of the improvement in economic efficiency.
  - ✓ In most cases, the short-term consumer savings would be substantially higher (which is based on the price effects of the initiatives).

Inefficient Pricing of Loop Flows

- To estimate the benefits of better coordination of flows around Lake Erie, we first estimate:
  - ✓ The quantity of loop flows across each of the ISOs' flowgates; and
  - ✓ The inefficient pricing of the estimated loop flows;
    - – The inefficiency is reflected in the difference between the value of the flowgate capability and the charges to transactions that cause the loop flows.
    - – This difference provides insight about the potential efficiencies from coordinated congestion management and buy-through congestion provisions.
- For this analysis, we analyzed November 2008 through October 2009.
- The value of flowgate capability used by the loop flows depends on the marginal cost of re-dispatch for the monitoring ISO (the ISO on whose system the flowgate is on).
  - ✓ For example, if a flowgate is constrained with a $200/MWh shadow price and 150 MW of flowgate capability is used by loop flows in the forward direction, the economic value of capability used by the loop flows is $30,000/hour.
  - ✓ This is equal to the congestion charges that would be collected if the 150 MW of flow resulted from transactions scheduled internally.

Inefficient Pricing of Loop Flows

- Transmission Line Loading Relief ("TLR") is often called when loop flows are contributing to congestion on the flowgate.
  - ✓ However, inefficiencies exist whether or not a TLR is called and the broader regional market initiatives will address these inefficiencies.
- When no TLR is called, loop flows are not charged (or paid) for their use of the flowgate. In this case, the BRM initiatives will enhance efficiency by:
  - ✓ Providing efficient scheduling incentives for transactions by charging transactions that cause forward loop flows (contribute to congestion), and by paying transactions that cause negative loop flows (relieve congestion).
  - ✓ Reducing re-dispatch costs in the monitoring ISO.
- When a TLR is called, the costs incurred by transactions and the non-monitoring ISOs may be substantially higher (or lower) than the marginal re-dispatch cost in the monitoring ISO. In this case, the BRM will:
  - ✓ Ensure that transactions that cause loop flows are charged (or paid) consistent with the cost of re-dispatch in the monitoring ISO.
  - ✓ Minimize the redispatch costs of the monitoring and non-monitoring ISOs.

Estimating the Quantity of Loop Flows

- We estimated forward and reverse loop flows resulting from:
  - ✓ Inter-control area transactions where the monitoring ISO is not on the contract path; and
  - ✓ Native generation-to-load impacts from the other three ISOs.
- We first used Powerworld software to estimate distribution factors relative to the key flowgates on each ISO's system based on NERC planning cases.
- Loop flow impacts were calculated for each inter-control area transaction:
  - ✓ For each transaction, the Transmission Distribution Factor ("TDF") was calculated based on the source and sink of the transaction.
- Native generation-to-load impacts were calculated for each generator:
  - ✓ For each generator, the Generation-to-Load Distribution Factor ("GLDF") was calculated as the difference between the generator's Generation Shift Factor ("GSF") and the ISO's load-weighted average Load Shift Factor ("LSF").
  - ✓ These GLDFs were used to calculated the market flows across each flowgate.

Estimating the Pricing Inefficiencies

- To identify pricing inefficiencies for the loop flows, the difference between the value of the flowgate and the costs incurred by the source of the loop flows is estimated.
- The value of flowgate depends on the marginal redispatch cost to manage the congestion on the flowgate by the monitoring ISO.
  - ✓ For the MISO, NYISO, and PJM, this is the flowgate's real-time shadow price.
  - ✓ For IESO, this is implied by the real-time nodal prices that are produced by its real-time security-constrained dispatch software.
- The pricing inefficiencies can be placed in two categories:
  1. Under-priced Congestion: this occurs when transactions are not charged for their loop flows, or where the value of the flowgate exceeds the costs incurred by non-monitoring ISOs to help manage it.
  2. Over-priced Congestion: this occurs when transactions that are more valuable than the flowgate capability are curtailed (not estimated due to lack of data), or when non-monitoring ISOs incur higher redispatch costs to help manage the congestion than the value of the flowgate.
- The following tables show these pricing inefficiencies. They report the difference between the value of flowgate capability in the monitoring ISO and the charges (or payments) to sources of the loop flows.

Under-Priced Loop Flows

Direction/Source of Loop Flows		Monitoring ISO (in $millions): NYISO	ONT	MISO	PJM
Forward	**NYISO GTL**		$3	$1	$17
	ONT GTL	$7		$16	$16
	MISO GTL	$7	$10		
	PJM GTL	$57	$15		
	ONT - NYISO			$1	$4
	MISO - ONT	$6			
	PJM - MISO	$2	$1		
	NYISO - PJM		$2		
	Total	**$79**	**$30**	**$19**	**$37**
Reverse	**NYISO GTL**		$2	$2	$15
	ONT GTL	$9		$16	$14
	MISO GTL	$9	$10		
	PJM GTL	$40	$16		
	ONT - NYISO			$1	$3
	MISO - ONT	$1			
	PJM - MISO	$2	$1		
	NYISO - PJM		$3		
	Total	**$61**	**$32**	**$19**	**$33**

Over-Priced Loop Flows

Direction/Source of Loop Flows		Monitoring ISO: ONT
Forward	**MISO GTL**	$25
	PJM GTL	$27
	PJM - MISO	$1
	NYISO - PJM	$6
Reverse	**MISO GTL**	$29
	PJM GTL	$23
	PJM - MISO	$5
	NYISO - PJM	$1

Conclusions of Loop Flow Analysis

- Forward and reverse loop flows are significant through each of the four ISOs.
  - ✓ The total gross value of the over-priced and under-priced loop flows is almost $430 million.
  - ✓ The BRM initiatives would capture some portion of this value by providing efficient incentives to schedule transactions and dispatch resources internally to minimize costs throughout the four ISOs' systems.
    - – The portion of the value that would be captured by the BRM is very difficult to estimate. It is based on the ability of other ISOs or schedulers to relieve the monitoring ISO's constraints at a lower cost than the ISO's real-time dispatch.
    - – We believe a reasonable range for this portion is 10 to 20 percent.
- These result may be understated for the following reasons:
  - ✓ Fuel prices were very low during the period studied, which reduces the value of congestion.
  - ✓ We did not have data on TLR-based curtailments and, therefore, have not identified cases where transactions were curtailed whose value exceed the value of the flowgate.
  - ✓ It does not identify the potential efficiency gains of scheduling transactions to relieve a constraint that was not scheduled under current rules.

Analysis of External Interface Utilization

- In addition to the benefits of better coordination of transactions and internal dispatch to lower the costs of managing congestion in the region, the BRM addresses improving scheduling between ISO markets.
- Improved scheduling would more fully utilize the transmission interfaces between the markets and generate significant benefits.
  - ✓ These benefits are best measured as reduced production costs.
  - ✓ Production costs are reduced as lower-cost resources in one market displace higher-cost resources in the adjacent market.
  - ✓ The result of this process is improved price convergence between the markets.
- We performed an econometric analysis estimate the benefits that are available from optimal scheduling of the interfaces between the markets.
- The portion of the savings that are ultimately realized depend on the actions taken by the ISOs.
  - ✓ Real-time coordination of the net scheduled interchange ("NSI") (or intra-hour scheduling) would likely capture most of the savings.
  - ✓ Simply shortening the scheduling timeframes for participants would capture a much smaller share of the potential benefits.

Analysis of External Interface Utilization

- The largest source of benefits we estimated derives from improving the utilization of the interfaces between markets. The analysis is described below.

Ontario, MISO, and PJM Interfaces

- We first estimated how prices in each ISO respond to changes in the scheduled interchange ("NSI") over the interface, recognizing that this price response varies as prices increase or when there is congestion leading to the interface.
  - ✓ Our model also controls for changes in the NSI over other interfaces.
  - ✓ We used the estimates to simultaneously optimize the interchange over each of the four inter-ISO interfaces around Lake Erie each 5 minutes, given the interface limits.

New England Interface

- To estimate the optimal NSI each 5-minutes for the NE interface, our analysis uses the generator offers in both markets and recognizes congestion leading to the interface.

Long Island Ties to CT and NJ

- Benefits for these ties were only calculated when congestion separated LI, CT or NJ from the broader RTO markets to avoid double-counting benefits from the primary interfaces.
- In these intervals, we estimate the optimal NSI adjustment, given transmission limits and scheduling restrictions.

HQ-NY Interface

- We have not estimated the benefits from dynamic dispatching the HQ interface, but estimated the reduction in uplift costs and balancing congestion costs that BRM could achieve.

Summary of Estimated BRM Production Cost Savings

- The potential savings we estimate address two aspects of the BRM initiations.
- Both show significant potential economic efficiencies, although the benefits of improved utilization of the external interfaces is larger.
- The following table summarizes the estimated annual benefits in the two areas, which totals:
  - ✓ $160 million in savings for the NYISO interfaces and constraints; and
  - ✓ $297 million in savings on all interfaces and constraints.
- In total, the benefits may be understated due to:
  - ✓ The low load and high surplus capacity that prevailed in 2009; and
  - ✓ The relatively low fuel prices in 2009.
- The low fuel prices in 2009 can be addressed by adjusting the benefits to correspond to a more typical natural gas price.
  - ✓ The benefits should be highly correlated to natural gas prices because gas-fired units are on the margin in most periods in New York and the adjacent markets.
  - ✓ The table shows that at a $6 per MMBTU gas price, the benefits would rise to:
    - – $193 million on the NYISO interfaces and constraints;
    - – $362 million for all interfaces and constraints.

Summary of Estimated BRM Production Cost Savings

Coordination of Scheduled Interchange	Estimated Benefits	Fuel-Price Adj. Benefits*
New York - Ontario	$66	$81
New York - PJM	$46	$57
New York - New England	$10	$12
Ontario - MISO	$61	$75
MISO - PJM	$48	$59
New York - HQ (Balancing Congestion Reduction)	$8	$8
New York - HQ (Uplift Reduction)	$11	$11
Long Island Ties to CT and NJ	$5	$6
	$255	**$309**

Coordinated Congestion Management	Total	Assumed Savings	Estimated Benefits	Fuel-Price Adj. Benefits*
Under-priced Congestion				
NYISO Forward Loop Flows	$79	10%	$8	$10
NYISO Reverse Loop Flows	$61	10%	$6	$8
PJM Forward Loop Flows	$37	10%	$4	$5
PJM Reverse Loop Flows	$33	10%	$3	$4
MISO Forward Loop Flows	$19	10%	$2	$2
MISO Reverse Loop Flows	$19	10%	$2	$2
Ontario Forward Loop Flows	$30	10%	$3	$4
Ontario Reverse Loop Flows	$32	10%	$3	$4
Over-Priced Congestion				
Ontario Forward Loop Flows	$59	10%	$6	$7
Ontario Reverse Loop Flows	$58	10%	$6	$7
	$427		**$43**	**$53**
Total Estimated Savings - All Interfaces/Constraints			**$297**	**$362**

* Adjusted to a $6 per MMBTU Natural Gas Price

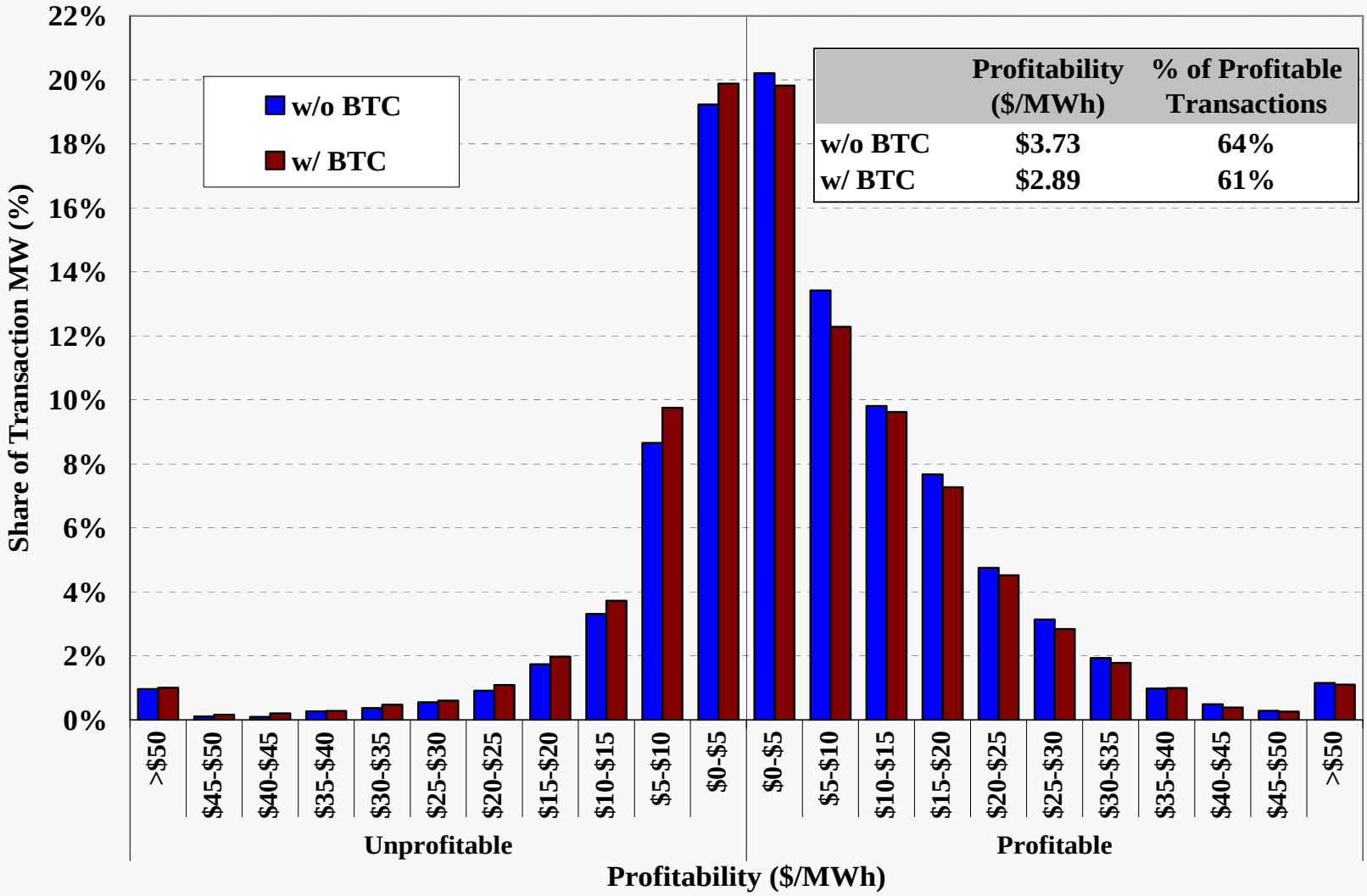
BTC Charges and Transaction Scheduling

- Some object to Buy Through Congestion ("BTC") charges because they believe BTC charges would shut-down inter-control area transaction scheduling.
- We evaluate this concern by quantifying the effects of BTC charges on the profitability of schedules around Lake Erie.
- We evaluate the IESO → MISO → PJM path from Nov 2008 to Oct 2009. This is a common path that would likely be subject to higher BTC charges than other paths.
  - ✓ The first analysis examines how BTC charges might affect the profitability of transaction scheduling.
  - ✓ The second analysis discusses the risks posed by BTC charges relative to the risks posed by the TLR process.
- Based on the results of the analyses, we find that:
  - ✓ BTC charges would generally reduce but not eliminate the incentives to schedule.
  - ✓ BTC charges would not significantly increase the volatility of profits from scheduling. Rather, it would add one additional factor to the set of uncertainties that participants currently face when forecasting the profitability of a schedule.
  - ✓ The BTC proposal may reduce physical uncertainty because participants that elect to pay BTC charges are less likely to be curtailed by a TLR.
  - ✓ Finally, participants always have the option to not pay the BTC charges and be curtailed as they are today.

Transaction Profitability – With and Without BTC Charges

- The following figure summarizes the profitability of scheduling on the IESO to PJM path during the study period. We assume $5/MWh of scheduling charges.
  - ✓ The blue bars show the share of transaction MWs in each range of profitability *excluding* BTC charges for NYISO flowgates.
  - ✓ The maroon bars show the share of transaction MWs in each range of profitability *including* BTC charges for NYISO flowgates.
  - ✓ The table summarizes the transaction MW-weighted profitability as well as the share of transaction MWs that would be profitable with and without BTC charges.
- The figure illustrates that although the BTC charges would reduce the profitability of these schedules, they would remain profitable. During the study period,
  - ✓ Transactions earned an average of $2.89/MWh if BTC charges are included and $3.73/MWh if BTC charges are excluded.
  - ✓ The share of transaction MWs that are profitable was 61 percent if BTC charges are included and 64 percent if BTC charges are excluded.
- The small difference in the two profitability distributions implies that including BTC charges would not significantly change the overall variability of payoffs.
  - ✓ Hence, participants would not face substantially higher uncertainty about the profitability of scheduling in a particular hour than they do currently.

Transaction Profitability – With and Without BTC Charges



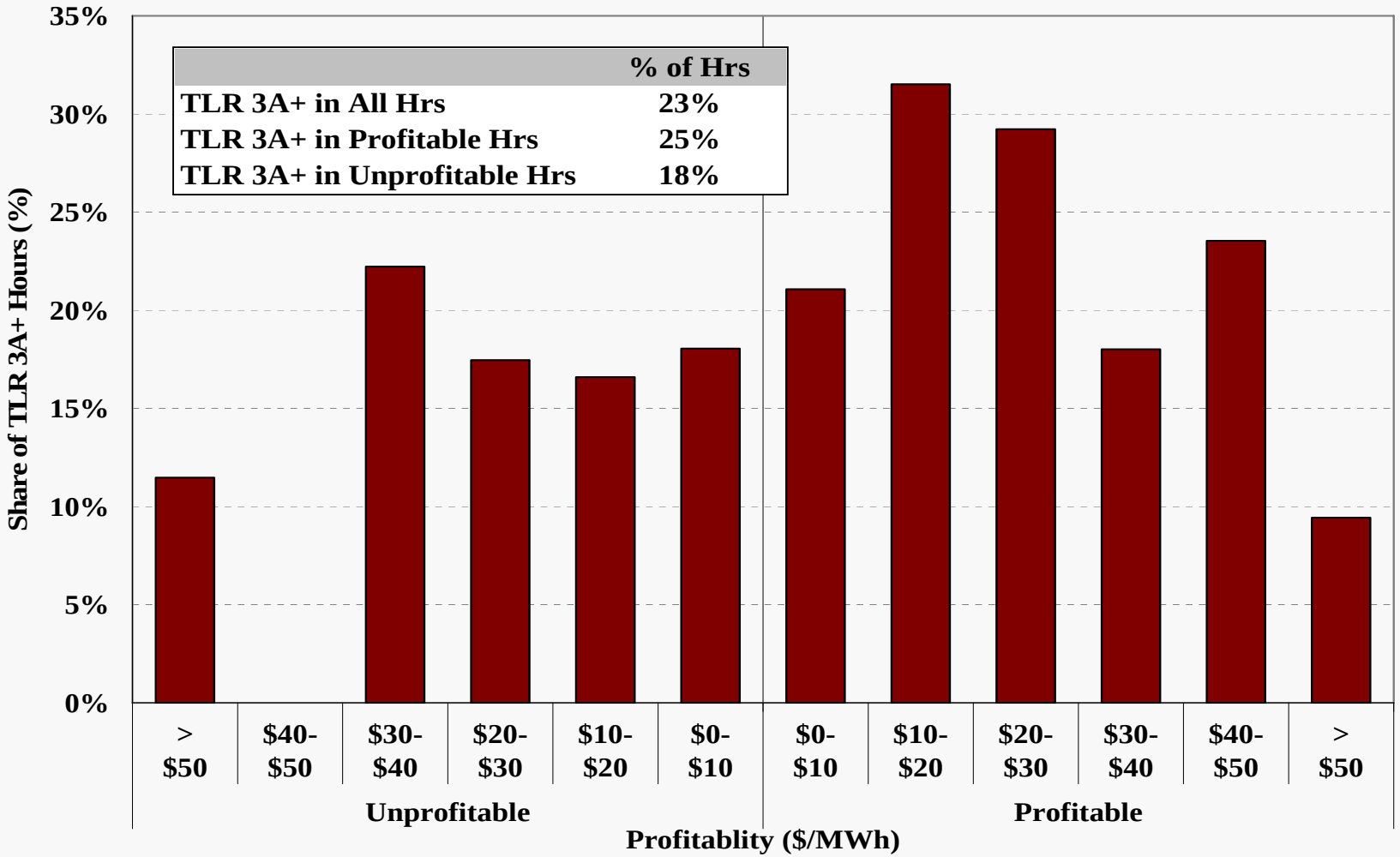
Note: The figure assumes a transaction fee of $5/MWh

Transaction Profitability and TLR Events

- The next figure illustrates the how profitability of scheduling was related to the frequency of TLRs (level 3A and above) called by the NYISO.
  - ✓ The TLR frequencies are shown according to the profitability of transaction scheduling on the path during the study period.
    - For example, a TLR was called in 21 percent of the hours when the profit from scheduling would have been between $0 and $10/MWh.
  - ✓ The table in the chart reports: (i) the share of hours when a TLR was called, (ii) the share of profitable hours when a TLR was called, and (iii) the share of unprofitable hours when a TLR was called.
- TLRs were called more frequently in the hours when transactions would have been profitable than when they would have been unprofitable.
  - ✓ TLRs were called in 25 percent of the profitable hours and 18 percent of the unprofitable hours.
  - ✓ This implies that the TLR process is not just a source of uncertainty, but also reduces the overall profitability of scheduling this path.
  - ✓ The current TLR process may generate greater than the risk and uncertainty than would result from BTC charges.

Transaction Profitability and TLR Events

	% of Hrs
TLR 3A+ in All Hrs	23%
TLR 3A+ in Profitable Hrs	25%
TLR 3A+ in Unprofitable Hrs	18%



Note: The figure assumes a transaction fee of $5/MWh, excludes BTC charges, and excludes hours before March 15, 2009 when NYISO did not actively use the TLR process.

Conclusions and Recommendations

- The BRM initiates promise substantial efficiency benefits to the markets in the eastern interconnect.
- The congestion coordination proposals will likely achieve efficiency benefits and should not be a significant barrier to scheduling between and through the RTOs.
- However, the largest source of benefits are the efficiency savings achievable by fully utilizing the inter-RTO interfaces.
  - ✓ We would recommend this element of the BRM be the highest priority.
  - ✓ Simply shortening the scheduling timeframes would not likely capture a large share of the potential benefits.
  - ✓ Real-time coordination of the net scheduled interchange ("NSI") (or intra-hour scheduling) would likely capture most of the savings.
    - This does not constitute the ISOs participating in the market, just using bids and offers in each market to establish the optimal NSI in the same way RTOs establish optimal power flows across each transmission interface inside the markets.
  - ✓ Alternatively, participants could submit "spread bids and offers" indicating their willingness to import or export power for 15-minutes based on the RTOs' short-term forecast of the real-time price difference between the RTOs.
    - If the RTOs' forecasts are accurate, participants' bids and offers should approach zero, allowing prices to converge almost completely.

Attachment XIII.

Affidavit of Ralph Masiello (KEMA, Inc.)

NEW YORK STATE PUBLIC SERVICE COMMISSION

----------X

In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

Ralph Masiello, being duly sworn, deposes and says:

1. I am the Senior Vice President, Innovation of KEMA, Inc. ("KEMA"). As such, I oversaw and approved KEMA's recent work with The New York Independent System Operator, Inc. ("NYISO") described below, and for production of the Report (as defined below).

2. N.V. KEMA of Arnhem, The Netherlands, is an internationally recognized technical and management consultancy specializing in testing, inspection, and certification for businesses and other organizations in the energy and energy consuming industries, assisting more than 500 clients in more than 70 countries. It serves the complete spectrum of participants in the energy marketplace and offers a full complement of services supporting generation through to the consumer side of the meter. KEMA is its North American unit and has participated in the development of all of the North American independent system operators and regional transmission organizations.

3. The NYISO engaged KEMA to (i) review the adequacy of its primary control center and alternate control center for accommodating the NYISO's existing responsibilities and expanded responsibilities to ensure reliable grid operations and efficient market administration, and (ii) to make recommendations regarding any necessary modifications or improvements in keeping with industry best practices. To my knowledge and belief, based upon the information made available to me at the time, KEMA's Report represents the situation at both of the NYISO's control centers as of the date of publication, including consideration for growth projections and business evolutions.

4. Attached hereto as Exhibit A is KEMA's final report of its analysis of proposals for upgrading the NYISO control centers ("Report").

Ralph Masiello

Subscribed and sworn to
before me this 15 day
of December, 2010.

Notary Public, State of Wisconsin
Qualified in DANE County
Commission Expires: Dec 04, 2011

EXHIBIT A

REPORT

(See attached)

New York Independent System Operator

Control Center Needs Assessment Study

Prepared by KEMA Inc.

November 22, 2010

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1. Executive Summary

The New York Independent System Operator (NYISO) is responsible for operating and maintaining the reliability of the bulk power system and administering the wholesale electricity markets in New York State. The grid and markets in New York State are among the most complex in the country and pose unique operational and reliability challenges. The NYISO operates the grid and administers the markets in New York State from its Primary Control Center at Carman Road and its Alternate Control Center at Krey Blvd.

The NYISO engaged KEMA, Inc. (KEMA): (i) to review the adequacy of its Carman Road Control Center and Krey Blvd Control Center for accommodating the NYISO's existing and imminent new responsibilities to ensure reliable grid operations and efficient market administration, and (ii) to make recommendations regarding any necessary modifications or improvements to the NYISO's control centers in keeping with industry best practices.

KEMA makes the following key findings and recommendations regarding the adequacy of the NYISO's existing control centers:

- Between 2011 and 2015, the NYISO will be required to meet expanded operational responsibilities and reliability requirements to ensure reliable grid operations and efficient market administration – the "Expanded NYISO Responsibilities" discussed in Section 3 of this report.

- The NYISO's control centers accommodate the NYISO's existing responsibilities. However, the NYISO must address shortcomings in its control centers to implement the Expanded NYISO Responsibilities. Allowing the shortcomings to continue or adapting partial fixes places NYISO's ability to implement the Expanded NYISO Responsibilities at risk and could compromise the NYISO's ability to reliably perform core functions.

- Both the Carman Road Control Center and the Krey Blvd Control Center have shortcomings in their layout and capacity to accommodate additional operating staff.

- KEMA weighed alternative approaches for the NYISO to resolve the shortcomings in its control centers, and recommends that the NYISO construct a new Primary Control Center at Krey Blvd and convert the Carman Road facility into a viable and sustainable Alternate Control Center.

- KEMA also recommends that, if the NYISO accepts this recommendation, it initiate planning and construction as soon as practicable, as the work on the centers, estimated to take 24 to 36 months, must be complete before the staff and technology requirements to support the Expanded NYISO Responsibilities exceed the capabilities of the existing facilities.

KEMA makes these key findings and recommendations on the basis of the following general findings, which are discussed in greater detail in this report.

Expansion of Operational Responsibilities and Reliability Requirements

The NYISO, along with the entire electric utility industry, is facing significant changes to the power system and to their operational responsibilities. The NYISO's ability to implement the changes specific to the New York and neighboring region and presented in this report as the Expanded NYISO Responsibilities, will hinge on:

- Developing additional information capture and presentation capacities in its control centers to enhance situational awareness.

- Increasing control room staff to manage additional operational tasks. The NYISO has identified that it will need at least two, and likely more, control room positions to support the Expanded NYISO Responsibilities.

KEMA assessed the adequacy of the existing control centers to accommodate both current operational responsibilities and reliability requirements and also the Expanded NYISO Responsibilities. The Expanded NYISO Responsibilities include:

- Implementation of the Broader Regional Market initiatives. These initiatives address complex seams issues, market inefficiencies, and reliability challenges. More generally, these initiatives will improve inter-regional Independent System Operator coordination. The NYISO expects the implementation of these initiatives will save approximately $200 million annually in wholesale electric power costs in New York.

- Incorporation of Smart Grid technologies. The NYISO is in the early stages of a Department of Energy project to add phasor measurement units (PMUs) across the New

York State power system and to display the data collected from the PMUs to operators to enhance situational awareness[1] within New York and throughout the broader region.

- Incorporation of intermittent, renewable generation resources. There are currently approximately 7,000 MW of wind projects in the NYISO's interconnection queue and the currently available tools to manage a substantial amount of intermittent, renewable resources may not be adequate. The NYISO must improve its ability to manage substantial additions of intermittent generation.

- Compliance with evolving reliability requirements. The North American Electric Reliability Corporation (NERC) and other reliability standards that are applicable to the NYISO continue to evolve, and the Federal Energy Regulatory Commission (FERC) has directed NERC to update and revise its standards in multiple respects.

The NYISO will be required to assume the Expanded NYISO Responsibilities between 2011 and 2015.

Assessment of the Carman Road and Krey Blvd Control Centers

KEMA identified the following pressing issues with the existing design and infrastructure of the NYISO's control centers that could compromise the NYISO's ability to implement the Expanded NYISO Responsibilities:

- Space constraints at the Krey Blvd Control Center. The control room at Krey Blvd is approximately one-half the size of the Carman Road control room. The addition of the anticipated new operating positions will exceed the design capacity of the room. Visibility to key operating data is compromised by the long and narrow form of the room.

- Older technology wall displays at the Carman Road Center. North American ISOs and RTOs have replaced or augmented old technology wall displays with large-format video displays. While the Krey Blvd Control Center has a video wall, the Carman Road Control Center does not have this technology.

[1] Situational awareness refers to the ability of system operators to continuously keep the system in an "analyzed state" so that system contingencies can be managed without violation of reliability standards or cascading outages.

- Aging infrastructure at Carman Road. The Carman Road center, at over 40 years of age, is the oldest center among ISOs and RTOs. Much of the infrastructure – emergency generators and their fuel tanks, electrical switch gear, the roof, and other pumps and motors – are near the end of their life and must be replaced.

- As concluded by KEMA in another study, the Carman Road Data Center should also be redeveloped.

These issues must be addressed if the NYISO is to continue to provide reliable and efficient service. Allowing the issues to continue or adapting partial fixes could compromise the NYISO's ability to implement Expanded NYISO Responsibilities**.**

Analysis of Alternatives

The constraints imposed by the conditions of the existing facilities and the requirements for reliable operations limit the alternatives to resolve the control center issues:

- The NYISO can operate with only a single center (while the other center is planned out of service) for a limited time – no more than a few hours.

- The needed renovations at Carman Road are extensive and, depending on the approach, the construction schedule could extend 24 to 36 months. During this time, the center may not be available for operation as a primary or alternative control center for a significant period.

- The adequacy of the Krey Blvd Control Center to support operations over the long term will lessen over time as the control room staffing increases. Current staff planning would at least reach, if not exceed, the design capacity of the Krey Blvd Control Center within the next calendar year.

- The Krey Blvd Control Center cannot be meaningfully expanded due to limitations imposed by the building design and construction.

These constraints would necessitate development of an interim alternate control center during the renovation of the Carman Road Control Center. KEMA cannot recommend this approach, as it would provide an incomplete solution for the long term and entail significant stranded costs.

KEMA finds that construction of a permanent facility is the best available alternative. Developing a new control center on the Krey Blvd campus has several benefits beyond addressing the shortcomings of the existing centers.

A cost study of a new control center has been prepared by Energy Initiatives Group, LLC. Analysis from that report shows a positive cost benefit comparison to the development of a new control center on the Krey Blvd campus and redevelopment of the Carman Road facility as an alternate control center – the same plan recommended by KEMA.

2. Background and Introduction

The NYISO is responsible for reliably operating the bulk power system and administering the wholesale electricity markets in New York State, including the New York metropolitan area ─ the largest urban area of the United States and one of the leading international centers of business, finance, and the arts. The grid and markets in New York State are among the most complex in the country and pose unique operational and reliability challenges. In large part, this is because the New York metropolitan area consists of a series of islands fed by highly congested transmission corridors that are susceptible to lightening strikes and other contingencies.

The NYISO operates the grid and administers the markets in New York State from its Primary Control Center at Carman Road in Schenectady, NY and its Alternate Control Center at Krey Blvd in Rensselear, NY. The Primary Control Center began operation in 1969 under the NYISO's predecessor, the New York Power Pool, and is the oldest ISO/RTO control center in North America[2].

The NYISO engaged KEMA (i) to review the adequacy of its Primary Control Center and Alternate Control Center for accommodating the NYISO's existing responsibilities and expanded NYISO Responsibilities to ensure reliable grid operations and efficient market administration, and (ii) to make recommendations regarding any necessary modifications or improvements in keeping with industry best practices.[3]

[2] KEMA conducted an informal survey of ISO and RTO control centers during this study. The construction dates for those ISO/RTOs responding follow (organization names are not listed by request).

- ISO/RTO1 – 2006 (primary center); 2008 (backup center)
- ISO/RTO2 – 2006; 2008
- ISO/RTO3 – 2010; 2007
- ISO/RTO4 – 2002; 2010
- ISO/RTO5 – 2006; early 1980s
- ISO/RTO6 – 2003; 2007
- NYISO – 1969; 2005

[3] The scope of KEMA's assignment did not include cost benefit analysis; however, this report references the findings of a cost benefit analysis performed by Energy Initiatives Group, LLC (EIG). Any additional discussion of cost in this report must be understood to be qualitative, based solely on KEMA's extensive experience with electric utility operations and control and data center design and construction.

2.1 Methodology

KEMA consultants met with the NYISO staff to review the current state of the Carman Road Control Center and the Krey Blvd Control Center. A first draft of the report was delivered and reviewed by the NYISO, errors in fact corrected, and the findings discussed. The findings of this assignment remain entirely those of KEMA.

The final report represents the situation at both the Carman Road and Krey Blvd Control Centers as of the date of publication on the front cover, including consideration for growth projections and business evolutions.

2.2 Experience and Qualifications of the Consultant

N.V. KEMA of Arnhem, the Netherlands is internationally recognized for technical and management consulting, testing, inspection, and certification for businesses in the energy and energy consuming industries, assisting more than 500 clients in more than 70 countries. KEMA employs more than 2,000 full-time professionals and leading experts in many facets of the energy utility industry. Founded in 1927, KEMA serves the complete spectrum of participants in the energy marketplace and offers a full complement of services supporting generation through to the consumer side of the meter. KEMA, Inc, the North American unit of the company participated in the development of all of the North American ISOs and RTOs.

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3. Expanded NYISO Responsibilities

The adequacy of the existing control centers must be assessed not only against current operational responsibilities and reliability requirements, but also against likely future responsibilities and requirements – the "Expanded NYISO Responsibilities". The assessment must consider the lead time necessary to develop new control center facilities or to renovate existing facilities before the NYISO's responsibilities surpass its capabilities. For this reason, the NYISO and other entities in the electric power industry continually review the adequacy of the power system, forecast future developments, and evaluate the adequacy of the system to support those developments. The Expanded NYISO Responsibilities that form the basis of this assessment of the adequacy of the NYISO's control centers include:

- Implementation of the Broader Regional Market initiatives.
- Incorporation of Smart Grid technologies.
- Incorporation of intermittent, renewable generation resources.
- Compliance with evolving reliability requirements.

It should be noted that, whole some of these responsibilities are unique to the NYISO, The incorporation of Smart Grid technologies and intermittent, renewable generation and compliance with evolving regulatory requirements affect the electricity power industry as a whole. In fact, the Smart Grid and renewable generation requirements are being implemented around the globe.

3.1 Evolving Responsibilities and Requirements

Broader Regional Markets

The NYISO, in coordination with its neighboring ISOs and RTOs, is implementing a set of related market enhancements, collectively the Broader Regional Markets initiatives. These initiatives will improve the NYISO's ability to address complex seams issues, market inefficiencies, and reliability challenges that result from the circulation of electric power around Lake Erie. More generally, the initiatives will improve inter-regional Independent System Operator efficiencies through the availability of enhanced market and ISO-to-ISO coordination. These market enhancements are planned to be incorporated by 2013:

- Buy-Through of Congestion - Cost allocation to and recovery of constraint management costs from the parties responsible for creating the system congestion through the identification of the sources of loop flow.

- Market to Market Coordination - Redispatch of generators within a neighboring control area to address transmission constraints when that dispatch is more cost effective than the dispatch of generators within the control area experiencing the constraints.

- Interface Pricing Revisions – Improvement of the pricing of energy sales between individual grid operators (ISOs and RTOs) to allow for more efficient regional power transfers.

- Interregional Transaction Coordination - Flexible transaction scheduling provisions to improve market and operational efficiency by allowing transaction schedules to adjust to the ever-changing system conditions and to respond to system contingencies.

These market enhancements are designed to reduce uplift costs associated with congestion and real-time event management, to improve the capability to incorporate intermittent resources, and, thereby, to lower total system operating costs. The NYISO expects the Broader Regional Market initiatives to enhance reliability through regional dispatch and to save approximately $200 million annually[4] in wholesale electric power costs in New York.

Integration of Smart Grid Data

The NYISO is in the preliminary stages of a Department of Energy-funded project, along with the New York Transmission Owners, to implement a network of phasor measurement units (PMUs) on the New York power grid and to integrate the data collected from the PMUs to provide greater situational awareness[5] for NYISO dispatchers. This project is scheduled to be implemented by 2013. The NYISO intends to integrate PMU data with NYISO systems in its

[4] *Analysis of the Broader Regional Markets Initiatives*, Joint NYISO-IESO-MISO-PJM Stakeholder Technical Conference on Broader Regional Markets, September 27, 2010, http://www.pjm.com/~/media/committees-groups/stakeholder-meetings/brmjsg/20100927/20100927-analysis-of-the-broader-regional-markets-initiatives.ashxr

[5] Situational awareness refers to the ability of system operators to continuously keep the system in an "analyzed state" so that system contingencies can be managed without violation of reliability standards or cascading outages.

Carman Road and Krey Blvd Control Centers. The applications PMU technology will support include:

- Wide-area visualization and monitoring.
- Phase angle and frequency monitoring.
- Inter-area oscillation detection and analysis.
- Proximity to voltage collapse.
- Dynamic model validation.
- Fast frequency regulation.
- Optimization of capacitor operation for reliability and loss reduction.

In the long-term, the NYISO's PMU network will interoperate with PMU networks in New England, the Mid-Atlantic, the Midwest, and Ontario to create broader situational awareness in the NYISO's control centers and in control centers throughout the Northeast, and to facilitate rapid responses to system disturbances that will help avoid major system disturbances such as the 2003 Northeast regional blackout, which resulted in significant costs[6].

These capabilities, along with the actions being taken by the NYISO to understand and manage future Plug-in Electric Vehicle ("PEV") charging demand, will require state-of-the-art monitoring and control capability to address reliability concerns resulting from the use of Smart Grid technologies and the anticipated demand requirements associated with significant use of PEVs.

Incorporation of Renewable Resources

The electric power industry, as a whole, lacks the tools to efficiently and under all conditions manage large amounts of wind and other intermittent resources. As greater amounts of wind resources are brought online in New York[7] and elsewhere, today's technology for managing wind resources may not be adequate to handle certain wind related events. Specifically,

[6] For the United States alone, costs estimates resulting from the 2003 blackout ranged from $4 to $10 billion. *U.S. Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* (April 2004)

[7] There are currently approximately 7,000 MW of wind projects in the NYISO's interconnection queue.

reliability concerns arise from ramp events that must be managed. Wind plant ramp events occur during sudden drops in wind speeds or when wind speeds approach cut-out levels that cause sudden large drops in wind output levels. The industry, and the NYISO, must improve the tools to manage wind ramp events. The NYISO must be able to receive and process real-time data regarding wind speed and direction, requiring state-of-the-art monitoring capability.

In addition, new limited energy storage technologies are being developed, such as flywheel and large scale battery technologies, to compliment the variable output of renewable resources. The NYISO is also studying the charging demands of Plug-in Electric Vehicles and how they would affect the overall dispatch. These new technologies will have to be integrated into the NYISO's dispatch operations.

Considerable research is being applied to the problems of coordinated management of intermittent resources, storage, and PEV charging; but until that time when appropriate automated tools are ready for production use, the NYISO may have to add staff to the control room floor to manually manage the resources.

Additional Reliability Requirements

The NYISO recognizes that mandatory North American Electric Reliability Corporation (NERC) and other reliability standards that are applicable to the NYISO will continue to evolve. The Federal Energy Regulatory Commission (FERC) has directed NERC to update and revise its standards in multiple respects. The NYISO control centers must contain sufficient physical space and flexibility to incorporate new control center technologies and additional staffing to enable the NYISO to maintain compliance with evolving reliability requirements. It is widely expected that FERC will soon expand the definition of Bulk Electric System facilities, so that NERC standards apply to many additional transmission facilities 115 kV and above. If FERC takes this action, the NYISO would require an additional control center position to comply with the mandatory NERC standards.

The NYISO control centers should also contain sufficient space to accommodate additional staff needed during events that threaten reliability, such as during adverse weather conditions.

3.2 Effects on Control Center Needs

The NYISO's ability to realize the desired and expected benefits of the Expanded NYISO Responsibilities will hinge on the capability of its infrastructure to gather, assemble, and deliver the necessary information on system conditions both within New York State and regionally and

the ability of NYISO personnel to act on the information. The NYISO will need to accommodate the following capabilities in its control centers to implement the Expanded NYISO Responsibilities:

- Include additional information capture and presentation technologies in its control centers to enhance situational awareness.
- Accommodate additional control room staff to manage the related monitoring and coordination functions.

The NYISO will need to appropriately manage the workload of control room and support staff to reliably implement the Expanded NYISO Responsibilities. New functionality will entail new tasks and processes that, when added to the existing workload within the control room, will require additional staff to monitor and manage the grid.

Enhancing Situational Awareness

The NYISO's control centers will require improvements in information capture and presentation capabilities in the areas of:

- Regional wind and solar power production, forecast conditions, and intermittency expectations.
- Existence and prediction of regional transmission system constraints.
- Review and validation of system flows and the identification of the sources of these impacts.
- PMU data and the results of the applications analyzing the data.

Current conditions, short term predictions, and, most critically, changes to those conditions will need to be understood in real-time.

The NYISO can enhance operator's situational awareness via advanced video display technology and a significant dedicated area of video wall display (a dedicated large format display), which require space in both the NYISO's control centers.

The report on the August 2003 blackout[8] pointed to a lack of situational awareness by utility operators as a key element in the events leading to the blackout. While the report does not recommend or endorse large format video displays as a remedy for this problem, most of the industry's efforts in developing advanced visualization tools have focused on video presentations, both small format (on the operators' desks) and large format (video walls)[9].

Additions to the Control Room and Operations Support Staff

The NYISO will also need to augment control room staff to manage the Expanded NYISO Responsibilities. The NYISO has identified, and planned for, the inclusion of the following additional control room positions:

- The Broader Regional Markets initiatives will add new workload to:
    - Establish and validate schedules with each of the NYISO's four neighboring regions as often as every five minutes, rather than on an hourly basis as is currently done.
    - Market-to-Market coordination requires setting up and validating redispatch action for, and from, neighboring control areas to ensure efficient resource utilization and satisfaction of reliability criteria.
    - Buy-Through of Congestion requires active monitoring for and identification of parallel flow impacts on NYISO constrained facilities to minimize unrecovered constraint management costs.

  The NYISO plans to add one additional control room staff position to implement the intra-hour scheduling. The NYISO will evaluate the addition of further control room staff positions as the workload of the Broader Regional Markets initiatives is better known.

- The development of Smart Grid technologies is accelerating and the integration of these technologies into the grid is increasing. Renewable generation resources are being built

[8] *U.S. Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* (April 2004)

[9] For examples of recent investigations, see: http://www.oe.energy.gov/our_organization/rnd.htm; http://www.pnl.gov/main/publications/external/technical_reports/PNNL-19103.pdf; http://www.wrldc.com/docs/VHPSO_FINAL.pdf

and connected to a grid not designed for them. Control centers must manage reliability concerns identified by PMUs and other Smart Grid technologies. The NYISO is prudently preparing for increasing amounts of renewable resources, the output of which is often difficult to forecast and control, by planning for enhanced situational awareness technology, changing market rules, and considering adding a control room position assigned to the management of Smart Grid and renewable resources. As with the transaction scheduling position, this staffing requirement could very easily increase.

- If FERC decides to expand the definition of Bulk Electric System facilities, so that NERC standards apply to many additional transmission facilities down to 115 kV, the NYISO expects to add one additional transmission operating position in the control room to address this change in NERC's standards.

4. Carman Road Control Center Assessment

The Carman Road Control Center, located in Guilderland, NY, was purpose-built as a control center in 1969 by the predecessor of the NYISO – the New York Power Pool – which used the building for offices and a control center from that date. The Carman Road Control Center is the oldest of the North American ISO and RTO centers[10].

The control room is approximately 8650 square feet, with a ceiling height of almost two and one-half stories. The dominant feature of the control room is a curved tile mapboard 22 ft high and 95 ft long (2090 ft^2). The mapboard displays the NYISO transmission grid, down to 115 kV lines (details of some lower voltage lines are omitted, trading off completeness for clarity). Chart recorders presenting Phase 1 data[11] are mounted below the mapboard. Supplemental LCD video displays are mounted within and around the board, showing lightning strikes, weather, news, and other information of interest to the operators. Five consoles face the mapboard. Operations support staff occupy offices surrounding the control room, with direct access to the control room.

The layout and construction of the Carman Road Control Center presents challenges to the continued reliable and efficient operation of the New York state electric grid. This is particularly true when considering the Expanded NYISO Responsibilities described in Section 3 of this report. The deficiencies that should be remedied in the near future to ensure continued reliable operations can be grouped as follows:

- Control Center layout.
- Infrastructure deficiencies.
- Future expansion requirements.
- Cyber and physical security.

[10] Ibid. footnote 2.

[11] Phase 1 data is telemetered directly from substations to the chart recorders and is monitored and alarmed independently of the Energy Management System. The operators consider the Phase 1 data as the most reliable source of critical operating information, as it is available even when the EMS is out of service.

4.1 Carman Road Control Center Layout

While the NYISO and the New York Power Pool have maintained and renovated the Carman Road Control Center over its life, there are several problems with the current layout and infrastructure that cannot be resolved without major construction.

Mapboard

The existing tile mapboard performs very well in presenting a “big picture” overview of the transmission system in real time. The large format of the mapboard affords reasonable visibility throughout even a large control room.

However, most ISO control centers have implemented video display walls in place of or supplemental to mapboards. While mapboards have advantages in operating costs and legibility (due to higher resolution), the set of data presented on a video wall and the form of presentation can be changed moment-to-moment and the technology allows for the rapid deployment of new presentations of data. These capabilities will help realize the full value of the Broader Regional Markets initiatives, Smart Grid technologies, and the integration of renewable resources.

Video displays also allow the same data to be presented wherever needed in the control room. This will provide a significant advantage as the control room area and operator complement grow and the distance from the furthest operator to the wall displays lengthens.

NYISO must consider control room enhancements to accommodate video displays. The existing hard-wired mapboard should be replaced, in total or in part, with video displays. This will be a major construction effort and cannot be done while the room is occupied.

Chart Recorders

Currently, the CRT chart recorders showing Phase 1 data are mounted in the support structure below the mapboard itself. The real value of the chart recorders and the associated alarm and annunciation panels is that they are a base level of information directly connected to the field.

In conjunction with upgrades to accommodate video display technology, the chart recorders should be removed and the Phase 1 data displays incorporated into the video display recommended above. The data can still be received directly from the field devices. Rather than display the data at just one location in the room, the information could be made available on the

room wall displays as well as at each separate position on displays at the operating position consoles.

Console Layout

The control room has five consoles, each facing the mapboard, with the Shift Supervisor occupying the center position. Operations personnel have indicated that efficient operations require them to be within easy visual and voice communication with each other and the mapboard. As more positions are added, this need will be more difficult to realize. This is particularly true if the single wall display of critical operating information is retained as a design principle. As the room is upgraded to accommodate video displays, the consoles will need to be rearranged for better visibility as well as communication between operators. Relocating the consoles and adding consoles will be a major task, involving relocating communications and power cabling as well as dismantling, moving and re-assembling the consoles themselves. While this can be done while the room is occupied, it will be distracting to the operators and could present a risk to reliability.

4.2 Infrastructure Deficiencies

The Carman Road Control Center currently supports reliable and efficient power system operation. However as a result of the facilities' age, there are problems that need to be addressed in the near future to ensure continued reliable operations.

- The existing 600 kW emergency generators are over 30 years old and are nearing end of life. Two new 1500 kW generators have been purchased as replacements. Before the new generators can be installed, there will have to be a substantial reconfiguration of the building power distribution system. Reconfiguration of the building power system will replace much of the switchgear.

- The existing power distribution and UPS equipment are protected by manual fire extinguishers, and the area is not suitable for the installation of a gas-based fire suppression system. An automated fire suppression system is highly desirable as fires have proven to be one of the most probable risks to control centers. This could reasonably be accomplished during the installation of new generators and switchgear.

- The in-ground diesel fuel tanks for the emergency generators are nearing end of life and will need replacement to mitigate the risk of fuel leakage.

- The building roof is nearing end of life and must be replaced to prevent further deterioration and possible equipment damage due to water leaks.

- Many of the pumps, switchgear components, and mechanical systems are original to the building and nearing end of life. These systems will need to be replaced or rebuilt to ensure reliable operations.

With careful planning each of the above items can be corrected, but with some disruption to operations at Carman Road. Importantly, changes to the electrical system will require outages of some duration and longer periods with reduced redundancy.

Work has already begun to address those facility deficiencies that were deemed to be most urgent. However, during the time when the redundant systems are down there will be a higher risk to power system reliability. During outages at the Carman Road Control Center, operations can be conducted from the Krey Blvd Control Center. However, as discussed in Section 5 of this report, shortcomings of the Krey Blvd Control Center will increase the risks to reliable and efficient power system and market operation if the Krey Blvd Control Center is used for an extended period of time.

4.3 Future Expansion

The existing Carman Road and Krey Blvd Control Centers meet current reliability needs. In the near future both control centers will need to be expanded to implement the Expanded NYISO Responsibilities. The NYISO has already initiated work to add three consoles to the current complement, producing a total of eight control center positions.

Given that it is reasonable to expect that additional operating positions may be needed beyond those now planned, any renovation of the control centers should include space for additional positions beyond the three identified new positions. The Carman Road Control Center control room is large enough to accommodate the identified expansion to eight consoles, but will require construction to incorporate further consoles, particularly in conjunction with the redevelopment of the existing wallboard with video technology. If the NYISO were to renovate Carman Road as the primary control center, construction could take 24 to 36 months. The NYISO would need to operate from the Krey Blvd Alternate Control Center for some of the construction time. As presented later in this report, the Krey Blvd Control Center is not presently suitable for long-term operation.

4.4 Physical and Cyber Security

Physical access to and throughout the Carman Road Control Center is aligned with good industry practice and meets all industry and government security requirements. KEMA is not aware of any changes to requirements that could not be satisfied by the existing Carman Road Control Center, but certain temporary measures taken to meet existing standards could be improved with a facility designed to meet present day security requirements.

The lack of office space at Carman Road has resulted in locating a number of operating support staff behind the mapboard. While NYISO manages these employees as essential personnel, a "best" solution would have them located outside the control room security perimeter.

KEMA is currently auditing NYISO's cyber security procedures and practices under a separate contract. At this early stage of that work, KEMA is not aware of any cyber security issues that can be attributed to shortcomings of the Carman Road Control Center. The authors of this report will review the final findings of cyber security audit and will issue an amendment to this report if issues are found with the Carman Road Control Center.

5. Krey Blvd Control Center Assessment

In 2005 NYISO purchased an office building on Krey Blvd in Rensselaer, NY to consolidate the majority of its staff into a single location. As part of the renovations and retrofits to the building, a new data center and a new alternate control center were constructed within the building. The relocation of the alternate control center was primarily driven by the NYISO's need to resolve certain security risks regarding the location of the then-existing alternate control center that had been identified by several security studies by U.S. agencies and the NYISO's internal audit staff.

The Krey Blvd Control Center is located on the second floor of the Krey Blvd facility, and occupies an area of approximately 4000 ft². The Krey Blvd Control Center has seven consoles facing a projection display wall configured as a 12 wide x 2 high matrix of video projection display cubes (512 ft^2 of display area). An enclosed conference room, work areas for market and scheduling staff, and one supervisory office are located within the control room's secure area.

The Krey Blvd Control Center currently provides a reliable alternate control center, as required by NERC. However, the layout and construction of the Krey Blvd Control Center present challenges to continued reliable and efficient operation of the New York State electric grid. This is particularly true when considering the Expanded NYISO Responsibilities. The deficiencies that must be remedied in the near future to ensure continued reliable operations can be grouped as follows:

- Krey Blvd Control Center layout.
- Infrastructure deficiencies.
- Future expansion requirements.
- Cyber and physical security.

5.1 Krey Blvd Control Center Layout

While the Krey Blvd Control Center has served NYISO well since its development, there are problems with the current layout that cannot be easily resolved.

Room Configuration

The Krey Blvd Control Center control room is a shallow rectangle, 80 ft wide and 44 ft deep (to the front of the video display wall). While the Carman Road Control Center has adequate space within the control room security zone, the Krey Blvd Control Center space is very limited. The floor area is less than half that of the Carman Road Control Center and includes work areas for operations staff who are located outside the control room in the Carman Road facility.

There are seven consoles; four in the row closest to the video wall and three in a second row. Because of the shallow room depth, the operating positions at the ends of the room are outside of the optimum viewing angles of the video wall; therefore a considerable fraction of the video wall is not useful from these operating positions. The compromised view of the information presented on the wall could lead to misinterpretation of the operating conditions, increasing the risks to reliable operation.

If the NYISO is to operate from the Krey Blvd Control Center for more than a few days, arrangements must be made to move personnel from the offices surrounding the Krey Blvd Control Center to make room for the required operations support personnel from the Carman Road facility. If the Carman Road Control Center is uninhabitable for more than a few weeks, approximately 75 employees would need to move to the Krey Blvd Control Center. Business continuity plans provide for temporary relocation, but, over time, efficiency of operations will suffer if the relocation of staff is required for a longer period of time. These 75 employees do not include approximately 10 management and administrative staff who would also be relocated if operations were to move to the Krey Blvd Control Center for more than a few days.

Video Display Wall

The Krey Blvd Control Center video display wall is a two-high by twelve-wide matrix of projection cubes, installed into the front wall of the control room. This display area of 512 ft^2 is less than 25% of the Carman Road Control Center wallboard size (2090 ft^2). The two-high column of projectors on the left side of the wall is used to display chart recorder data, and the remaining screens show the transmission one-line diagrams. The Phase 1 data is presented in the chart recorder space, but the data at Krey Blvd is not considered as reliable as it is dependent on equipment at the Carman Road Control Center. If the Carman Road Control Center is out of service, the Phase 1 data will not be available at the Krey Blvd Control Center.

The size of the video wall is limited by the length of the room and the low ceiling height of 8 ft 3 in (further discussed in Section 5.3). While this video display wall is adequate for the current

level of operations, it will not be adequate for the expansion required to meet the Expanded NYISO Responsibilities. This is particularly true when considering the video display requirements of incorporating Smart Grid technologies and the technologies for the incorporation of intermittent, renewable resources.

The considerable differences between the wall displays at the Carman Road and Krey Blvd Control Centers are not commensurate with best practice. Ideally, the presentation of operating information would be identical at both the Carman Road and Krey Blvd Control Centers. In the ideal scenario, there would be no distinguishing characteristics between the operating floors at the two centers. The extreme difference is wallboard space (2090 ft2 versus 512 ft2), the different technologies (tile board versus video display), and the different presentation of information stemming from these differences is a shortcoming that compromises both short- and long-term operations from the Krey Blvd Control Center.

5.2 Infrastructure Deficiencies

If the Krey Blvd Control Center is to continue as a reliable alternate control center for even the near future, shortcomings of the power supply need to be addressed. The Krey Blvd building is fed from a single substation; uses a single generator for non-critical load and another single generator for critical loads. The supply to critical loads is configured for a second generator that has not yet been installed. There are no provisions for sharing or transferring loads between the two generators or for selective load shedding.

The reliability of the Krey Blvd power supply is on the order of 97.5%, compared to 99.9% for Carman Road[12]. This is acceptable for its current use as an alternate control center, but not acceptable if it is to be considered a viable long-term primary control center.

5.3 Expansion Requirements

The Krey Blvd Control Center meets current reliability requirements. However, in the near future both control centers will need to be expanded, replaced, or renovated to support the requirements identified in Section 3.

[12] This comparison assumes the complete loss of utility power and reflect the industry norms for the difference between a single emergency generator and an ‘N+1’ configuration.

One additional console position could possibly be added in the Krey Blvd Control Center, bringing the total up to eight positions, by eliminating some of the office space. However, the view of the video display from that console would be severely compromised with the acute angle to the screens, exacerbating an already marginal situation. Expansion of the room itself is limited by its placement within the building; it is bordered on three sides by fixed walls. The only available space for expansion would be to the operators' left into the adjacent office space. Expanding into this space would further compound the problem with viewing angles because of extended width in relation to the shallow depth of the room.

The critical problem will be expanding the video display as required to enhance situational awareness. The ceiling height is limited by the ceiling structure, which cannot reasonably be altered. This limits the video displays to 5' high, given the 3' height from the floor to the first row of screens required for visibility. This severely limits the amount of data that can be shown on the screens.

5.4 Physical and Cyber Security

Physical access to and throughout the Krey Blvd Control Center, is aligned with good industry practice and meets all industry and government security requirements. KEMA is not aware of any changes to requirements that could not be satisfied by the existing Krey Blvd facility.

KEMA is currently auditing NYISO's cyber security procedures and practices under a separate contract. At this early stage of that work, KEMA is not aware of any cyber security issues that can be attributed to shortcomings of the Krey Blvd Control Center. The authors of this report will review the final findings of cyber security audit and will issue an amendment to this report if issues are found with the Krey Blvd facility.

6. Carman Road Data Center Assessment

The NYISO separately engaged KEMA to review the adequacy of the Carman Road Data Center to support operations. The objective of that study was to review the current state of the data center at the Carman Road facility while accounting for growth projections in the area of power consumption, platform expansion, and identified business evolution, and to provide an assessment of current adequacy and a plan for expansion.

The report was submitted to the NYISO in September 2010. The following is a synopsis of that report.

NYISO has realized good value from the Carman Road Data Center. Over its forty-year life the Carman Road Data Center has been expanded, augmented, and renovated as needs and technology have changed. Deficiencies of the center have been reasonably worked around and the center has given the NYISO reliable service.

The Carman Road Data Center is not without problems. None of these issues in isolation is sufficient to necessitate replacing the center. However, taken in total and recognizing the age of the building, consideration of a new data center is warranted.

Determining the critical time when the Carman Road Data Center can no longer satisfy the NYISO's needs is difficult. That moment must be identified some time in advance, at least eighteen months, to allow for the design and construction of a replacement. It is reasonable to expect that the Carman Road Data Center will remain useful over the next eighteen months, but sometime beyond that time, further work-arounds or replacement will become necessary.

Considering the age of the building, the numerous compromises made to achieve the current lifetime, and the ongoing compromises to be made if the building is to continue as the primary control center, KEMA endorses a decision to begin work to construct a new data center. This determination is based on engineering principles. But there are other viewpoints that reinforce the desirability of a new data center.

The Carman Road Data Center is an inefficient design. While our estimate of the cost of this inefficiency - $100,000 to $200,000 per year – is not enough to by itself justify a new facility, the savings over the lifetime of a new data center can offset some of the construction cost. The sooner these benefits could be realized, the greater the payback.

There also is the value to the NYISO in developing “green”, or at least “greener”, facilities. Other organizations such as Syracuse University, have constructed energy efficient data centers. Syracuse has constructed a data center that operates with effectively no power from the electricity grid (http://www.syr.edu/greendatacenter). While operating off the grid may not be realistic for the NYISO, positioning the company as environmentally proactive is appropriate for this day and age.

Finally, the near-term plans for the IT infrastructure reinforce our findings. The NYISO refreshes the IT infrastructure over multi-year cycles, targeted at three years. Four projects now underway could benefit from installation directly into a new data center (as opposed to installation into the existing center and subsequent movement to a new center):

- Replacement of the current-generation Ranger servers.
- Replacement of the tape silo data backup system.
- Replacement of the backbone networking hardware.
- Inclusion of systems associated with the DOE Smart Grid project.

The benefits, although not quantified as part of this report, would include reduced costs (labor and shorter project cycles) by avoiding the work to relocate the new hardware from the existing center to the new center and reduced risk of outages for the same reason.

As found in the Carman Road Data Center report, while we cannot declare the state of the Carman Road Data Center to be in crisis, we fully support a decision to begin construction of a new data center. We believe a greater benefit will be realized the sooner this activity is started, in terms of realizing operating cost benefits, avoiding the stranded cost of partial solutions, and earlier mitigation of the risks endemic to the design compromises in the existing data center.

7. Analysis of Alternatives

As described throughout this report, both the Carman Road Control Center and the Krey Blvd Control Center have shortcomings in their layout, infrastructure, and their capacity to accommodate the expected new functionality and additional operating staff required to implement the Expanded NYISO Responsibilities. The most pressing issues with the existing control centers are the space constraints at the Krey Center, the out-of-date wall displays at the Carman Road Control Center, and the aging infrastructure at Carman Road. As concluded in another study (and summarized in this report), the Carman Road Data Center should also be redeveloped.

The constraints imposed by the conditions of the facilities at the Carman Road Control Center and the Krey Blvd Control Center and the requirements for reliable operations limit the effective alternatives:

- The NYISO can only operate from a single center (while the other center is planned out of service) for a limited time – no more than a few hours.
- The needed renovations at Carman Road are extensive and, depending on the approach, the construction schedule could extend 24 to 36 months. During this construction time, the center may not be available for operation as a primary or alternative center for a significant period.
- The adequacy of the Krey Blvd Control Center to support operations over a long term will lessen over time as the control room staffing increases. Current staff planning would at least reach, if not exceed, the design capacity of the Krey Center within the next calendar year.
- The Krey Blvd Control Center cannot be meaningfully expanded due to the building design and construction.

The constraints clearly mandate development of an interim alternate control center during the renovation of the Carman Road Control Center. This center would need all of the current operational capabilities of the Carman Road Control Center to maintain compliance with FERC and NERC requirements. Establishing this control center will be no small task. Even with the construction of an adequate temporary alternate control center, the adequacy of the Krey Control Center for use as a primary control center over a long construction period is

questionable. Furthermore, a temporary alternate control center would be without long-term value. For all these reasons, we do not recommend this alternative.

If a third control center must be developed during renovation of Carman Road, we recommend construction of a permanent facility. Developing a new center on the Krey Blvd campus has several benefits beyond addressing the shortcomings of the existing centers:

- The new center can be designed with capacity for the known staff complement and for growth beyond that size.
- The technology and arrangement of consoles and wall displays can be rethought, enhancing situational awareness.
- Assuming that Krey Blvd would become the primary site, staff time travelling between corporate headquarters and the primary control center would be eliminated. Locating the primary control center on the campus would bring the key operating staff more fully into the NYISO corporate culture.
- Under the same assumption, the Carman Road Control Center could be redeveloped into the alternative site – a role more commensurate with its remote location.
- Location of the primary control center at the Krey Blvd site makes it immediately accessible to senior management during power system upsets.
- The eventual decommissioning of the current Krey Blvd Control Center would free up valuable office space.

A cost study of a new control center is being prepared by Energy Initiatives Group, LLC. Preliminary analysis from the current draft of that report shows a cost benefit to the development of a new control center on the Krey Blvd campus and redevelopment of the Carman Road Control Center as an alternate control center – the same plan recommended by KEMA. This Control Center Needs Assessment Study report will be updated when a final cost report is available.

8. Summary and Recommendation

The NYISO has realized full value from the Carman Road Control Center. Over its forty-year life the Carman Road Control Center has been expanded, augmented, and renovated as needs and technology have changed. The Carman Road and Krey Blvd Control Centers have together enabled the NYISO to perform its operating responsibilities and meet reliability requirements. However, NYISO's ability to implement the Expanded NYISO Responsibilities will be at risk without replacement or expansion of the existing control centers to provide for additional staff and enhanced situational awareness.

KEMA has examined alternatives for redeveloping the control centers to provide for the additional staffing and technology required to maintain the reliable and efficient operation of the power grid in New York State and the administration of the wholesale electricity markets. For the reasons set forth in Section 7, KEMA recommends that the NYISO construct a new Primary Control Center at Krey Boulevard, and convert the Carman Road Control Center into a viable and sustainable alternate control center.

KEMA also recommends that, if the NYISO accepts this recommendation, it should initiate planning and construction as soon as practicable, as the work on the control centers, estimated to take 24 to 36 months, must be complete before the staff and technology requirements to support the Expanded NYISO Responsibilities exceed the capabilities and capacity of the existing facilities.

Attachment XIV.

Affidavit of Francis J. Flynn (Energy Initiatives Group, LLC)

NEW YORK STATE PUBLIC SERVICE COMMISSION

----------X

In the Matter of Petition of The New York Independent System Operator, Inc. Under Public Service Law Section 69 for Authority to Incur Indebtedness for a Term in Excess of Twelve Months

Case No. 10-E-_____

----------X

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

Francis J. Flynn, Jr., being duly sworn, deposes and says:

1. I am a consulting engineer with Energy Initiatives Group, LLC ("EIG"). As such, I was primarily responsible for EIG's recent work with The New York Independent System Operator, Inc. ("NYISO") described below, and for production of the Report (as defined below).

2. EIG is a specialized group of experienced professionals that provide project development, planning, strategy, execution, management, engineering, and operations consulting in the areas of electric transmission, generation, distribution, transportation, and renewable energy services, to traditional utility companies, project developers, regulatory agencies, energy companies, financial organizations, transportation companies, government agencies, and other organizations in the energy industry.

3. The NYISO engaged EIG to perform an independent analysis of the cost and benefit comparison of the two alternatives the NYISO has developed for upgrading its control centers as

well as the modified alternative proposed by stakeholders. EIG's analysis included an independent review of the underlying need and cost comparison of the various alternatives.

4. Attached hereto as Exhibit A is EIG's final report of its analysis of proposals for upgrading the NYISO control centers ("Report"). The Report provides independent information for consideration by NYISO staff, stakeholders, and regulators.

Francis J. Flynn, Jr.

Subscribed and sworn to
before me this 13th day
of December, 2010.

Bernadette M. Hurley

Notary Public, State of Massachusetts
Commission Expires: May 5, 2017

BERNADETTE M. HURLEY
Notary Public
Massachusetts
Commission Expires May 5, 2017

EXHIBIT A

REPORT

(See attached)

Energy
Initiatives
Group

Analysis of Proposals for Upgrading NYISO Control Centers

Final Report
November 19, 2010

Navigating In
A Changing
Energy Industry

176 Worcester-Providence Turnpike ▪ Suite 102 ▪ Sutton, Massachusetts 01590
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Table of Contents

1. Executive Summary

The New York Independent System Operator (the "NYISO") operates the bulk power system and administers the wholesale electricity markets in New York. The NYISO's primary control center is located on Carman Road, and the alternate control center is located on Krey Boulevard. While the control centers are sufficient to allow the NYISO to meet its existing responsibilities, the NYISO has identified a number of additional responsibilities that it will be required to perform in the next one to four years that will require new technology and additional operations staff at its control centers. The NYISO's ability to meet these additional responsibilities could be compromised if the current control centers are not upgraded. The NYISO is currently comparing the costs and benefits of several alternatives for upgrading its control centers that will enable it to meet future responsibilities.

The NYISO has engaged the Energy Initiatives Group, LLC ("EIG") to conduct a cost-benefit analysis of the proposed alternatives and to determine which alternative is the most cost-effective approach for upgrading the NYISO's control centers. EIG has reviewed the alternatives proposed by the NYISO, including the modified alternative proposed by stakeholders. EIG has reviewed the NYISO's underlying assumptions and calculated the net present value of the costs of the alternatives. A benchmark survey was also conducted of the NYISO's neighboring control centers to compare costs of construction and facility assets.

Based on its analysis, EIG recommends that the NYISO proceed with its Alternative 3. Alternative 3 encompasses the construction of a new primary control center at Krey Boulevard and the redevelopment of the existing control center at Carman Road to serve as the alternate control center. Of the proposed alternatives, Alternative 3 will best allow the NYISO to incorporate the Broader Regional Market Initiatives, which are estimated to yield approximately $358 million dollars in efficiencies across the markets administered by the participating ISO/RTOs. Approximately $200 million dollars of this total will come from transactions on the interfaces of the New York Control Area, translating into significant savings in New York wholesale electric prices.

2. Introduction

The NYISO is responsible for providing for the long-term, reliable operation of the bulk power grid in New York. The NYISO has identified a number of additional responsibilities that the NYISO will be required to perform in the next one to four years that will require new technology and additional operations staff at its control centers. The NYISO's ability to meet these future responsibilities could be compromised if the current control centers are not upgraded. The NYISO is currently examining several alternatives for upgrading its control centers to enable it to satisfy additional responsibilities. The NYISO has requested and received feedback from various stakeholders regarding these alternatives, including a request from stakeholders that the NYISO obtain an independent cost-benefit analysis.

The NYISO has engaged EIG to perform an independent analysis for the cost and benefit comparison of the two alternatives the NYISO has developed for upgrading its control centers as well as the modified alternative proposed by stakeholders. EIG's analysis included an independent review of the underlying need and cost comparison of the various alternatives. This report is intended to provide independent information for consideration by NYISO staff, stakeholders, and regulators.

2.1 Scope and Approach

In conducting its review, EIG performed the following tasks:

- Reviewed the following alternatives, previously identified by the NYISO:
  - Alternative 2: expand the existing control center at Carman Road
  - Alternative 3: build a new control center at the Krey Boulevard campus
  - Alternative 2A: expand the existing control center at Carman Road and add trailers and associated upgrades at the Krey Boulevard campus to house support staff when needed to operate at ACC.

- Reviewed the following for design alternatives 2 and 3:
  - Assumptions
  - Cost Estimates
  - Supporting Documentation.

- Toured the NYISO's facilities for background support for alternatives 2 and 3.

- Offered an opinion as to the accuracy of the NYISO's analysis.

- Reviewed stakeholders' modified proposal for an alternative, low-tech option (Alternative 2A). This review specifically included consideration of whether during a long-term emergency, temporary office structures could be procured, installed, and occupied such that back-up operations could be managed without incurring the higher costs of building out office space.
  - Reviewed Alternative 2A in terms of:
    - Costs
    - Risks

  - Practical Feasibility.

- Considered the age and condition of existing infrastructure.
- Benchmark neighboring control centers.
- Prepared a final report of findings and recommendations.

In addition, in performing these tasks, EIG considered the following factors:

- Operational efficiencies which could be achieved by consolidating onto a single campus.
  - Reviewed and analyzed identified opportunities
  - Provided a net present costs recommendation as to the most cost effective approach to meet these reliability needs.

- Anticipated functional requirements of control center due to industry changes that will require control center expansion such as:
  - Increased situational awareness and presentation to operators
  - Requirement changes due to future Bulk Electric System ("BES") definition expansion by NERC
  - Broader Regional Markets coordination
  - Increased operation coordination between NYISO and neighboring ISO/RTOs.

2.2 Background

The NYISO has identified a number of additional responsibilities that it will be required to perform in the next one to four years and that will require new technology and additional operator staff at its control centers. The expanded NYISO responsibilities cover areas such as potentially expanded NERC standards, reliability and market additions, and new situational awareness tools. For example:

1. Broader Regional Markets ("BRM"), which will require intra-hour transaction scheduling, loop flow, and congestion management
2. Situational awareness tools, including phasor measurement units and wide-area displays to increase the NYISO's readiness to integrate alternative supply resources such as demand response, PHEV, flywheels, battery storage, and other limited energy storage resources
3. Management of increasing levels of renewable resources
4. Evolving and more stringent NERC Critical Infrastructure Protection ("CIP") standards
5. Expanded definitions of the Bulk Power System by FERC and subsequent additional responsibilities under NERC.

When these expanded NYISO responsibilities develop, the NYISO must take action to expand the existing control room and update technology. The NYISO has explored various options to update their facilities to meet future expanding demands and to correct identified deficiencies.

2.3 Methodology

The study started with a physical tour of both facilities at Krey Boulevard and at Carman Road. The tour revealed issues regarding asset conditions, replacement needs, and space requirements to accommodate future growth to a maximum of 133 staff positions required for control room and operational support tasks. These functions include the following:

- Operations
- Grid Operations
- Operator Training
- Reliability & Compliance
- Auxiliary Market Operations
- TCC Market Operations
- Energy Market Operations
- Commitment Analysis
- Scheduling Supervisor
- Price Validation
- Power System Application Engineering
- Operations Analysis
- Information Technology
- Facilities
- Human Resources.

Additionally, discussion was held regarding the proximity of outage coordinators with control room staff, situational awareness and non-compliance risk, and requirements related to implementation of Broader Regional Markets starting in 2011, with full implementation by 2013, and smart grid projects currently being implemented by transmission owners. Also, EIG considered the anticipated change by the FERC to expand the definition of the Bulk Power System and subsequent requirements imposed on the NYISO's control centers.

3. Analysis of Proposed Alternatives

The existing primary control center (the "PCC") at Carman Road is an aging facility built in 1969 to support the New York Power Pool ("NYPP"). The NYISO inherited the control room at Carman Road from the NYPP when the NYISO was formed. Various infrastructure repairs and needed upgrades were identified by the NYISO in recent years. However, the NYISO deferred the work due to an inability to obtain financing in 2008 and 2009 and used the time to relook at all the alternatives and emerging work load. In addition, control room technology, such as the static tiled mapboard, has not been significantly updated in 40 years.

When the PCC was initially constructed, its designers could not envision how power system operation would function in today's complex market environment, and the control center does not accommodate the tools now required by system operators to reliably operate the power system.

The NYISO is proceeding with certain enhancements and improvements at the Carman Road PCC that would be compatible with any of the potential expansion items under consideration.

The existing alternate control center (the "ACC") at Krey Boulevard is located in a recently renovated facility. However, the space is limited for expansion of operator console positions and the existing video wallboard has limited functionality due to the room's size and ceiling height. The video wallboard cannot display all of the information required by the operators for a high-level overview of the New York Control Area ("NYCA"). Additionally, as the new Phasor Measurement Unit ("PMU") Project is implemented as part of the DOE Smart Grid project, adequate space will not be available for presenting this information on the video wallboard with other related NYCA information. The ACC is supplied by a single distribution feeder and a single generator backup for critical load. For extended operation of the ACC, a diversely-routed second distribution feeder should be considered and installed.

EIG reviewed and compared the costs and underlying assumptions of the three alternatives, taking into consideration certain benefits expected from the proposed upgrades.

3.1 Alternative Overview

3.1.A Alternative 2:

This option includes the following:

1. Renovate the Carman Road facility to house an expanded PCC and new data center
2. Update the Krey Boulevard building infrastructure to support greater redundancy for commercial and emergency power.

3.1.B Alternative 3:

This option includes the following:

1. New addition at Krey Boulevard site to house an expanded PCC and office space for operations support staff.
2. Update the Krey Boulevard building infrastructure to support greater redundancy for commercial and emergency power
3. Renovate the Carman Road facility to house a new data center, upgrade the emergency generators, and remediate aging facilities

3.1.C Alternative 2A:

This option includes the following:

1. Renovate the Carman Road facility to house an expanded PCC and new data center
2. Expand the Krey Boulevard facility to house a minimal ACC
3. Update the Krey Boulevard building infrastructure to support greater redundancy for commercial and emergency power
4. Provide low-tech building options located at Krey Boulevard for operations support staff when operating in extended ACC mode when needed

3.2 Alternative Details

3.2.A Alternative 2 Details

The Carman Road PCC can be expanded to accommodate the total of seven operating positions immediately required, and up to ten total operating positions to accommodate future growth envisioned by the NYISO. However, expanding beyond those ten positions would involve significant brick and mortar modifications since the control room is built out to existing exterior walls.

The PCC expansion would accommodate a potential increase in the work load of the Reliability Coordinator function due to an expanded definition of the Bulk Power System.

The existing ACC at Krey Boulevard is, however, currently limited to seven operating positions, and the existing video wallboard is limited in its situational awareness functionality, both due to the room's size and the ceiling height. The video wallboard cannot display all of the information required by the operator for high level overview of the NYCA, much less neighboring control areas with which NYISO has joint operating agreements.

Under this alternative, there is no provision made for housing the approximately 75 operation staff at the ACC necessary for extended operation.

While the renovated PCC would accommodate the need for increased situational awareness and smart grid functions on the video wallboard, the existing ACC could not accommodate the increased functions due to the limited size of the board. In addition, the ACC facility cannot be expanded to allow the increase of operator positions, from the seven immediately required, to up to ten that may be needed to handle future, potential expanded NYISO responsibilities.

As a result of these findings, Alternative 2 was found not to be a viable option and no further evaluation of this alternative was conducted.

3.2.B Alternative 3 Details

The new Krey Boulevard PCC would be built initially for up to ten operating positions that would address short term needs (two to three additional operating positions) and accommodate potential long term needs, as envisioned by NYISO. Expansion beyond those ten positions would be possible since renovations would involve sheetrock walls rather than exterior building walls.

The PCC and ACC could accommodate the potential increase in work load of the Reliability Coordinator function due to an expanded definition of the Bulk Power System.

Under this alternative, the existing Carman Road facility becomes the ACC. It has five operating positions currently, with the capability to expand to ten positions. The static mapboard would remain and additional large video screens would be added around the side perimeters of the room for increased situational awareness. However, the static mapboard does not lend itself to increased situational awareness. This site also has the ability to be renovated at a future time to replace the static mapboard with a video wallboard and to reposition the operator consoles to accommodate up to ten operator positions.

When the ACC at Carman Road is required to be operational for extended periods (greater than two weeks), the operations support staff would be housed in existing conference rooms and the old data center area.

Under this alternative, both the PCC and ACC could accommodate the need for increased situational analysis and smart grid functions on the PCC video wallboard and ACC large video screens.

Both the PCC and ACC could accommodate the need for implementation of Broader Regional Markets with the ten operator consoles positions.

Working with NYISO, the cost estimate for this alternative is $48.9 million. See Table 2 in the cost analysis section for a summary of the cost components.

Under this alternative, the NYISO has identified gains in internal operational efficiencies by consolidating NYISO functions on a single campus. These efficiencies are estimated to be approximately $0.7 million dollars per year beginning in year four of the project. These savings result from full time equivalent (“FTE”) employee reductions of a physical security shift ($0.2 M) and other staff ($0.5 M).

Additionally, based on the KEMA data center study, there are approximately $0.15 M in energy savings per year once the Carman Road data center is in operation and the old data center is retired. These savings would begin in year three of the project.

3.2.C Alternative 2A Details

The Carman Road PCC would be expanded to accommodate up to ten operating positions necessary for the Broader Regional Markets initiative and additional expanded responsibilities. However, expanding beyond those ten positions would involve significant brick and mortar modifications since the control room is build out to existing exterior walls.

The existing ACC at Krey Boulevard would be relocated to a new 15,000 square foot addition to the existing building. This addition would only house the control room and a new video wallboard similar to the PCC. Future expansion of the ACC may not be viable since it would be built out to exterior walls.

The PCC and ACC could accommodate potential increases in work load of the Reliability Coordinator function due to an expanded definition of the Bulk Power System.

This plan includes provision for housing approximately 75 operations staff personnel at the ACC at Krey Boulevard in temporary trailers for extended operation.

The PCC and ACC could accommodate the need for increased situational awareness and smart grid functions on the video wallboards

Under this alternative, both the PCC and ACC could accommodate the implementation of Broader Regional Markets and additional expanded responsibilities with increased console space for seven to ten positions.

Working with NYISO, EIG has developed cost estimates for this alternative. The cost estimate for this alternative is $56.2 million. See Table 3 in the cost analysis section for a summary of the cost components.

In this alternative, based on the KEMA data center study, there are approximately $0.15 M in energy savings per year once the Carman Road data center is in operation and the old data center is retired. These savings begin in year three of the project.

3.3 Summary of Alternatives

Table 1 presented below summarizes the advantages and disadvantages of the three options.

Table 1: Summary of Advantages and Disadvantages

	Do Nothing (But Immediate Repairs)	Alternative 2 Expand Carman Road (PCC)Krey (ACC)	Alternative 3 New Krey PCC and Carman as ACC	Alternative 2A
Addresses Immediate Infrastructure conditions	**Yes**	**Yes**	**Yes**	**Yes**
Complies w/Regulatory Requirements:				
-Today	**Yes**	**Yes**	**Yes**	**Yes**
-Potential expansion to 100kv	**No**	**High Risk for ACC**	**Yes**	**Yes**
Accommodates Smart Grid	**No**	**Not for ACC**	**Yes**	**Yes**
Increase Situational Awareness	**No**	**Not for ACC**	**Yes**	**Yes**
Accommodates future Expansion	**No**	**No**	**Yes**	**No**
Increased Coordination with Neighboring ISO	**No**	**No**	**Yes**	**Yes**
Accommodates BRM with Financial Benefits	**No**	**High Risk for ACC**	**Yes**	**Yes**
Cost estimate	**Not Viable**	**Not Viable**	**$48.9 M**	**$56.2 M**
Operational Efficiencies (Savings)			**$0.85 M/yr after Year 3**	**$0.15 M /yr after year 2**

4. Cost Comparison Analysis

Tables 2 and 3 (Section 4.1) depict the base costs and necessary cash flow for Alternative 2A and 3 and the years in which investments are made at each facility.

Tables 4 and 5 (Section 4.2) represent the cash flows for the projects as well as the efficiency savings, energy savings and the net present costs of each project out through 2021.

Chart 1 shows the cumulative net present costs of the project through 2021.

In this analysis a discount rate of 7% was assumed and an escalation factor of 3% for salaries.

The result from this analysis and findings shows that Alternative 3 is the most economic plan. It positions the NYISO to meet its expanded responsibilities for the future and gives the NYISO options for growth.

4.1 Summary of Base Costs of Proposed Alternatives

Table 2: Alternative 2A Base Costs

Carman Road Primary Option – Alternative 2A

	2011	2012	2013	2014	2015	2016	Total
Carman Road Data Center / Generators	10.9	2.5					13.4
Carman Road Temp Backup Control Room and Krey Blvd Backup Control Room - Design	1.2						1.2
Krey Blvd. Backup Control Room		4.0	11.0				15.0
Carman Road Temp Backup Control Room			3.0				3.0
Carman Road Control Room - Design			1.2				1.2
Carman Road Control Room				12.0	8.5		20.5
End-state Office Retrofit						1.0	1.0
Temp Office Trailers/Services and Site Security (at Krey Blvd.)					.9		.9
Annual Sub-Totals:	12.1	6.5	15.2	12.0	9.4	1.0	$56.2M

Table 3: Alternative 3 Base Costs

Krey Blvd. Primary Option – Alternative 3

	2011	2012	2013	2014	2015	2016	Total
Carman Road Data Center / Generators	10.9	2.5					13.4
Krey Blvd. Control Room Design	1.2						1.2
Krey Blvd. Construction		17.0	17.3				34.3
Annual Sub-Totals:	12.1	19.5	17.3				$48.9M

4.2 Analysis of the Net Present Costs

A net present costs ("NPC") analysis was performed comparing Alternative 3 and 2A to determine which alternative was the most economic plan. The analysis included the data and control center modification costs as well as the energy and staff efficiency savings.

The results of this analysis, indicates that Alternative 3 is the most economic plan. These results are shown in Tables 4 and 5 and Chart 1.

Table 4: Krey Boulevard. Alternative 3 NPC Analysis

Krey Boulevard Primary Option – Alternative 3
Net Present Cost

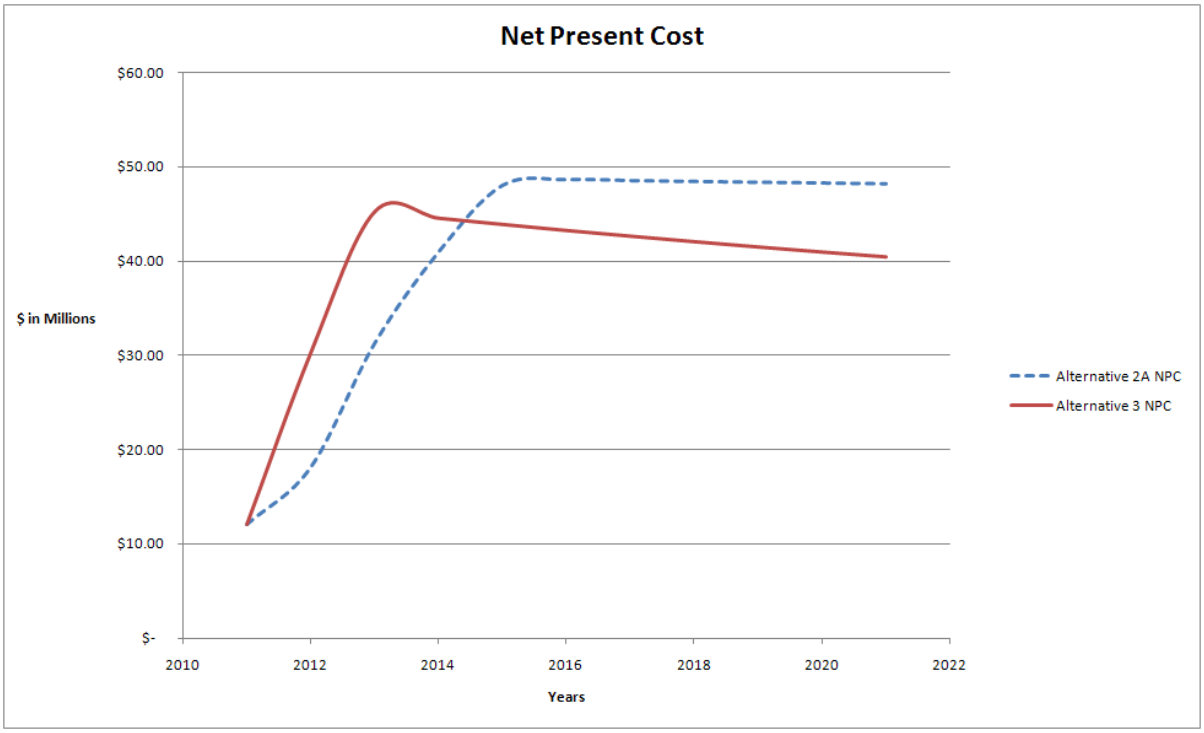
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Project Costs	12.1	19.5	17.3									48.9
Energy Savings			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	1.4
Efficiency Savings				0.7	0.73	0.74	0.77	0.79	0.81	0.84	0.61	6.2
Annual Sub-Totals:	12.1	19.5	17.2	-0.9	-0.9	-0.9	-0.9	-0.9	-1.0	-1.0	-1.0	$41.3
Present Cost	12.1	18.2	15.0	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	
Net Present Cost	12.1	30.3	45.3	44.6	44.0	43.3	42.7	42.1	41.6	41.0	40.5	$40.5

Table 5: Carman Road Alternative 2A NPC Analysis

Carman Road Primary Option – Alternative 2A Net Present Cost

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Project Costs	12.1	6.5	12.5	15.2	12.0	9.4	1.0					56.2
Energy Savings			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	1.35
Annual Sub-Totals:	12.1	6.5	15.1	11.9	9.3	0.85	-0.15	-0.15	-0.15	-0.15	-0.15	$54.85
Present Cost	12.1	6.07	13.14	9.67	7.06	0.61	-0.09	-0.09	-.09	-.08	-.08	
Net Present Cost	12.1	18.2	31.3	41.0	48.0	48.7	48.6	48.5	48.4	48.3	48.2	$48.2

Chart 1: Net Present Costs of Alternatives 2A & 3



4.3 Analysis of the Net Present Costs of Alternative 3 with BRM Impacts: Costs Offset by Savings

An additional NPC analysis was performed for Alternative 3. This analysis presents the impacts of the project if the Broader Regional Markets is implemented in the NYCA.

Additional project costs were included for the required market design and software development cost and the costs of additional 6 FTEs required to support operations. These additional costs were taken from the NYISO Budget & Priorities Working Group presentation dated September 24, 2010.

As mentioned earlier in the report, when Broader Regional Markets are implemented, approximately $200 million dollars in savings across New York interfaces can be achieved as identified in the presentation titled “Analysis of the Broader Regional Market Initiatives” presented on September 27, 2010 by David D. Patton, Ph.D. of Potomac Economics. This presentation was made to the Joint NYISO-IESO-MISO-PJM Stakeholder Technical Conference on Broader Regional Markets.

Rather than considering the full $200 million dollars in savings, the analysis performed assumed a very conservative savings of $50 million dollars in the first year of implementation in 2013 and $100 million dollars per year thereafter beginning in 2014.

With the implementation of Broader Regional Markets, this analysis shows a positive cash flow with savings considered beginning in 2013 or 2014.

Table 5 and Chart 2 depict the cash flows, savings and NPC of Broader Regional Markets savings of $100M/year impacts to Alternative 3.

A sensitivity analysis was performed to compare the full BRM $200 million dollars per year in savings as outlined in the Patton report as compared to the conservative savings of $100 million dollars per year. For this sensitivity $100 million dollars was assumed in the first year of implementation in 2013 and $200 million dollars per year thereafter beginning in 2014. Based on this analysis a positive NPC for the $200M/year BRM savings would occur in 33 months as compared to 37 months in the $100M/year BRM Savings.

Table 6 depicts the cash flows, savings and NPC of Broader Regional Markets savings of $200M/year impact to Alternative 3.

Chart 3 depicts the comparison between the Broader Region Markets savings of $100 million dollars per year and $200 million dollars per year.

Chart 4 depicts the comparison of the positive NPC time frame for the Broader Region Markets savings of $100 million dollars per year and $200 million dollars per year.

Table 5: Krey Boulevard Alternative 3 NPC Analysis with BRM Impacts

Krey Boulevard Primary Option – Alternative 3 Net Present Cost Includes BRM Cost & Savings (BRM $100M Savings Alternative)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Project Costs	15.1	22.5	20.4	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	67.7
Project Savings			50	101	101	101	101	101	101	102	102	860
Annual Totals: (Savings – Costs)	-15.1	-22.5	29.8	99.8	99.8	99.7	99.7	99.7	99.7	100.3	100.9	792.3
Present Cost	-15.1	-21	26	81	76	71	66	62	58	55	51	
Net Present Cost	-15.1	-36	-10	71	147	218	285	347	405	460	511	$511

Chart 2: Net Present Costs of Alternatives 3 with BRM ($100M/yr Savings) Implemented

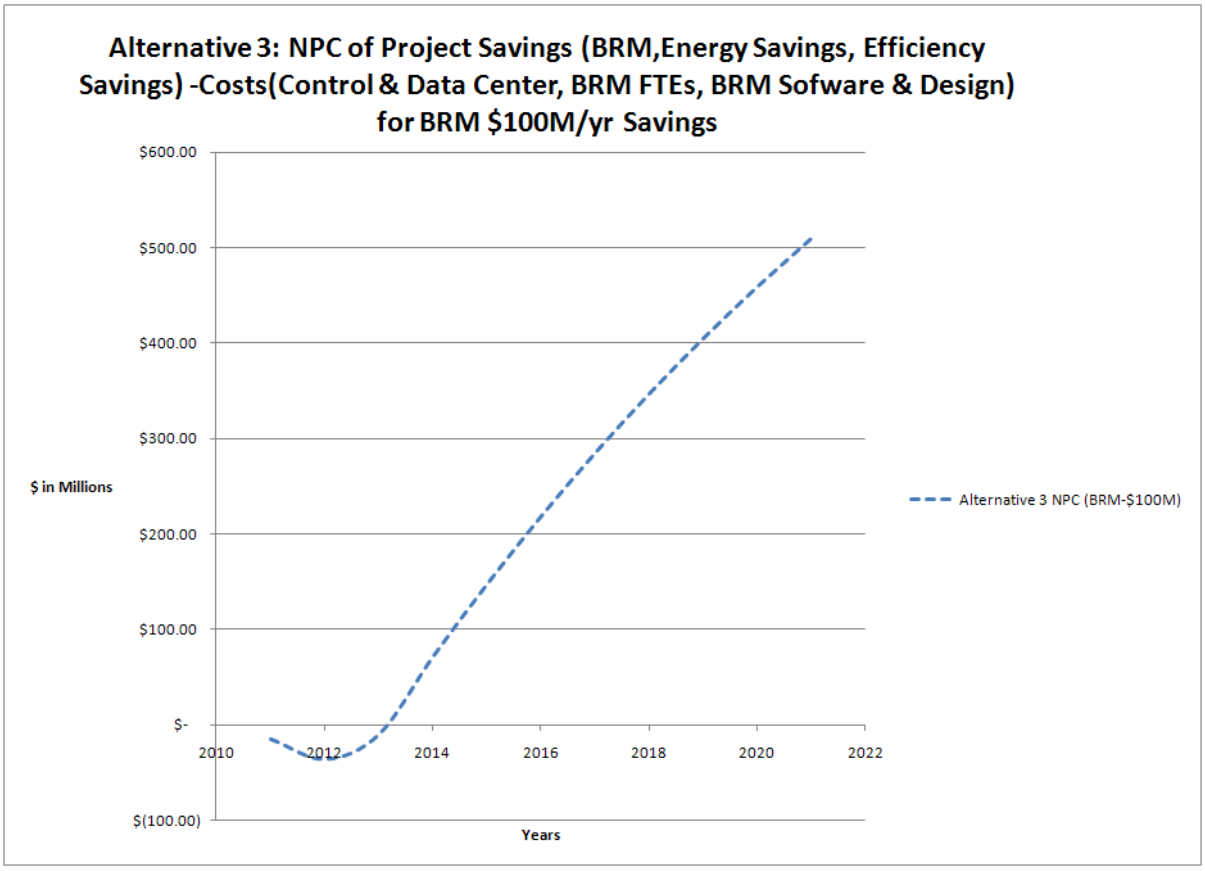


Table 6: Alternative 3 with Comparison of BRM Implementation with $100M/yr and $200M/yr in Savings

Krey Boulevard Primary Option – Alternative 3 Net Present Cost Includes BRM Cost & Savings (BRM $200M Savings Alternative)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Project Costs	15.1	22.5	20.4	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	67.7
Project Savings			100	201	201	201	201	201	201	202	202	1708
Annual Totals: (Savings – Costs)	-15.1	-22.5	80	200	200	200	200	200	200	200	200	1642
Present Cost	-15.1	-21	70	163	152	142	133	124	116	109	102	
Net Present Cost	-15.1	-36	34	197	349	491	624	749	865	974	1075	1075

Chart 3: Alternative 3 with Comparison of BRM Implementation with $100M/yr and $200M/yr in Savings

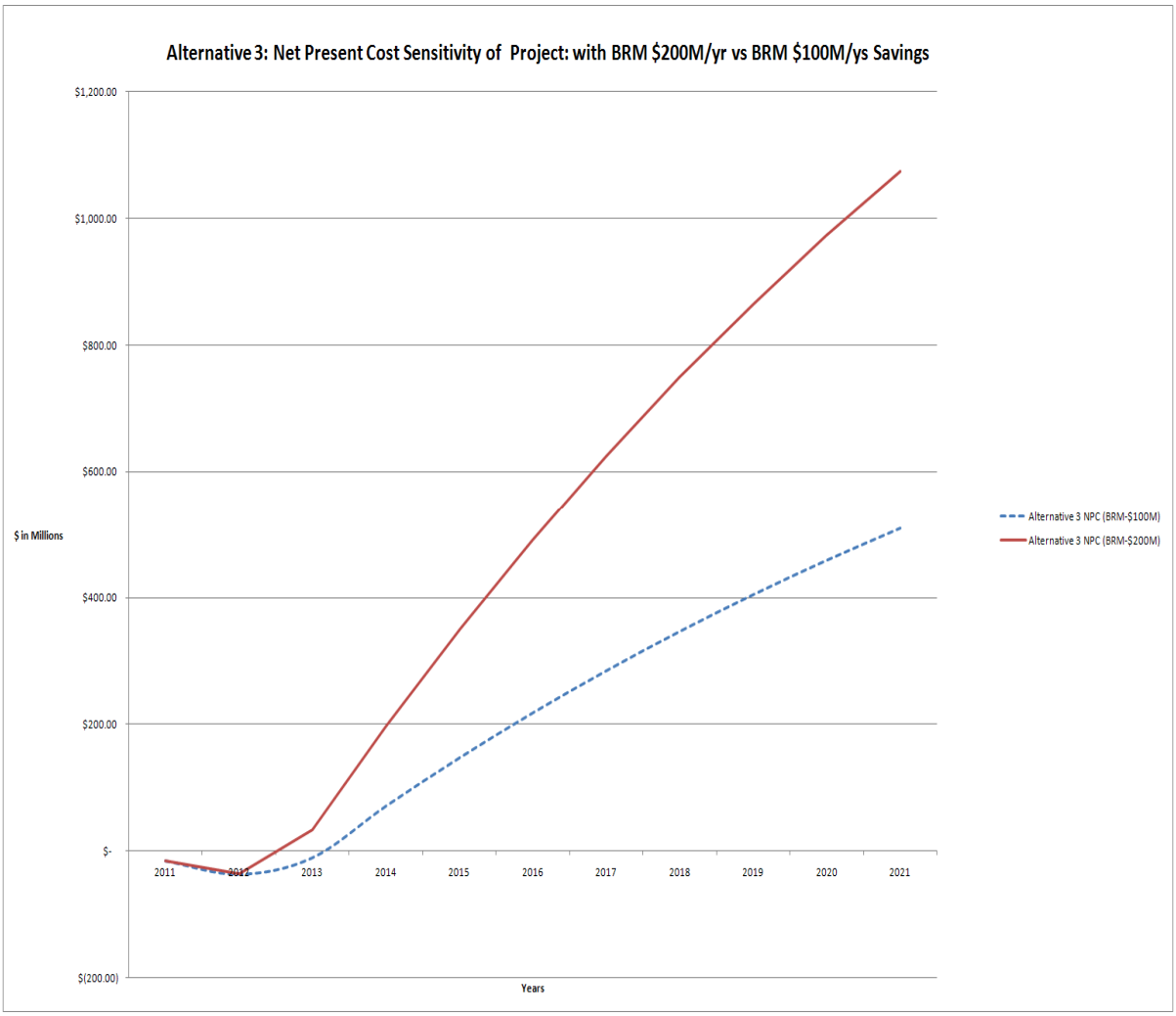
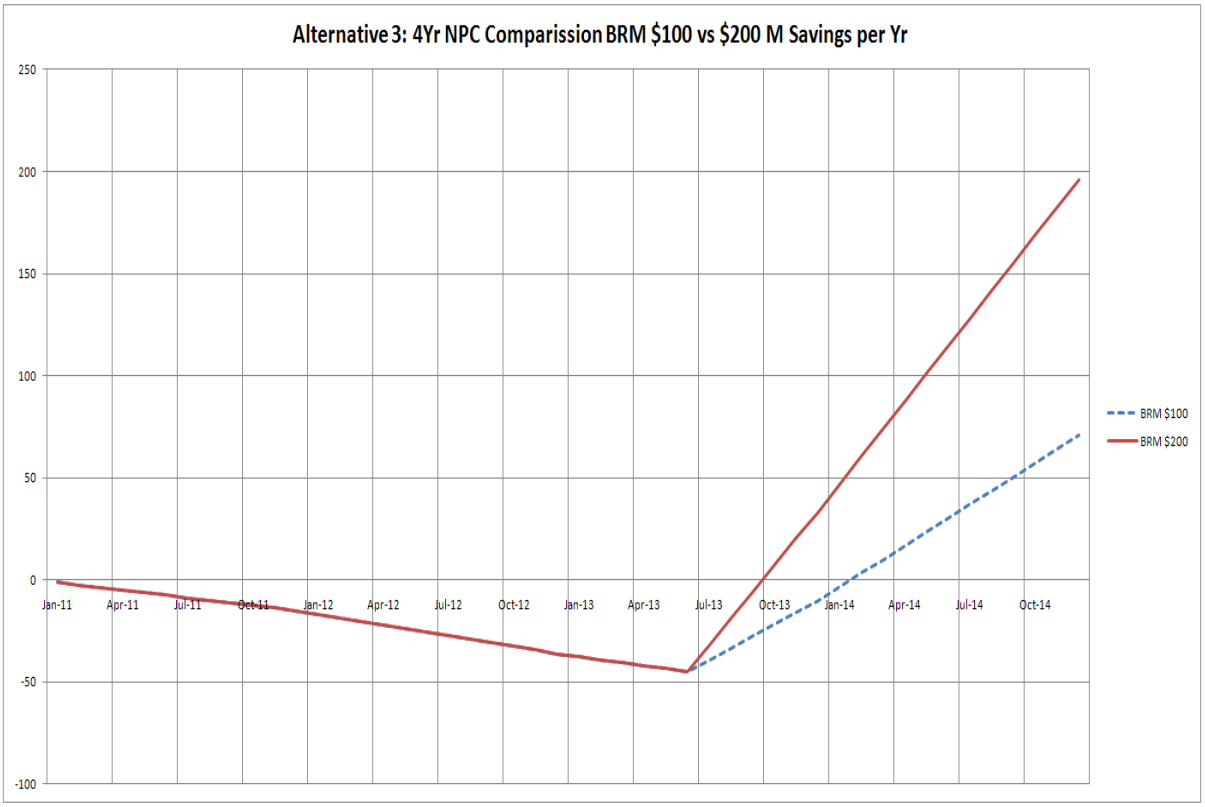


Chart 4: Positive NPC Comparison of BRM with $100M/yr Savings and $200M/yr Savings



5. Benchmarking Analysis

EIG conducted surveys of representative ISO, RTO and TO control centers neighboring the NYSIO footprint to determine best practices for a bulk power control centers. The surveys initially revealed that each of these companies have either gone through recent renovations or were planning for upgrades in the near future, of their Primary and/or Alternate Control Centers. Some of these companies have elaborate Alternate Control Centers (ACC) and others have minimal facilities as a backup. The companies that have minimal ACC facilities recognize that they will have to upgrade these facilities, in the near future, to meet emerging markets and additional responsibilities.
For security purposes, the surveyed companies are referenced as Companies A, B, C, and D.

Company A

Company A moved into their newly constructed Primary Control Center (PCC) in 2007. This new center consisted of a new three story building that houses the Control Center, data center and support staff and renovation of their existing building. These buildings are powered by two diversely routed distribution feeders fed from diverse substation. They have two uninterruptable power supplies (UPS's), and two emergency generators. The second floor, of the new building, contains the control room and houses the operations support staff (outage planning, day ahead market, short term market, etc). Operations support staff (market service, transmission planning, market development, customer service, etc) are located in offices on the third floor of the new building. Additional support staff, (human resources, legal, settlements, communication group, etc) are located in the refurbished building. The data center, UPS's, and IT are located on the first floor of the new building. The new building is approximately 100,000 square feet in size. The project cost for construction and renovation was approximately $49.5 million dollars including required IT infrastructure.
The control room has eight operator positions. Seven are staffed 24x7 and one is a spare. Company A believes their present configuration is adequate to accommodate their expected future responsibilities. They mentioned their consoles would have to be redesigned if they required additional operator staff in the control room beyond the existing 8 positions.
The primary control center has a video wall board is three cubes high by nine cubes wide. Expansion capability exists to add three cubes to each end of the wall board if required for future situational awareness functionality. An evaluation process is being undertaken to explore new technology for a video wall replacement
Company A's Alternate Control Center (ACC) is located within an hour from its PCC. The ACC is only sized for the operators and operations support staff (outage coordinators, day ahead market, engineering staff that support control room). There is no video wall system at this facility. Their back up data center is also located in the facility. They feel that this facility meets their short term (one week) work load requirements, but they would need a more permanent facility for extended operations (longer than a week).
Security at the PCC and ACC consist of fences surrounding the facilities, surveillance cameras, card key readers and guards at the gates.

Company B

Company B's Primary Control Center (PCC) was built in 1969 and has been renovated several times since. This facility has a total of 45000 square feet of space. They have 18000 square feet of office space above ground, which houses support staff. This building is powered by two diversely routed distribution feeders supplied from diverse substation. There

are two UPS's, and two emergency generators. The data center is also located in this building.
The control room is 6800 square feet and was last renovated in 2009 at a cost of $2.5 million dollars ($368/SF) which included only fixtures and furniture. It did not include IT infrastructure upgrades nor HVAC related work. The control room has nine operator positions. Six are staffed 24x7 and three are spares. Seven additional positions are used by operational support staff. The control room has multiple a video walls. One used for transmission dispatch which is 4 cubes high by 14 cubes wide, one for generation dispatch which is three cubes high by five cubes high and one for operations support which is two cubes high by four cubes wide. Expansion is limited to due to the construction of the area is below grade.
Company B's Alternate Control Center (ACC) is located within an hour from its PCC. The ACC is comprised of multiple buildings. One contains their backup data center and the other houses the control room. Combined, the two buildings are 50,000 square feet. As with the PCC, this facility is supplied by two diversely routed distribution feeders supplied from diverse substation. There are two UPS's, and two emergency generators. Originally built in late 1960's, this facility was renovated in 2007 at a cost of $34 Million dollars ($680/SF). The ACC control room has nine operator positions and seven additional positions for support staff. The ACC is designed to mimic the PCC in function, layout and tools (consoles, video walls, phones systems, etc) so that the operators can continue to perform their responsibilities. This facility also contains a twenty position operator training center and a separate room with eighty LAN positions, both of which would be used by support staff. Security at the PCC and ACC, consist of fences surrounding the facilities, surveillance cameras, card key readers, biometrics, and guards at the gates. The biometrics uses finger prints and card key combination. They have plans to add man traps in the future.

Company C
Company C has just completed building a new Primary Control Center which consisted of the refurbishing of an existing building and the construction of an addition to house the control center. This new facility is 48000 square feet and was completed at a cost of approximately $30 million dollars ($625/SF).
The building is supplied by two diversely routed distribution feeders fed from diverse substations. There are two UPS's, and two emergency generators. The data center is also located in this facility. Communication facilities are also diversely routed into the building. The control room has eight operator positions. Four are staffed during the day shift, while three are staffed during the night shift and the remaining positions are spares. There is a video wall that is four cubes high and twelve 12 cubes wide.
Support staff is located within the vicinity of the control room.
Company C's ACC is located within an hour from its PCC. It consists of an open room with operator consoles Projection screens are used in lieu of video wallboards. The ACC space is limited. The facility is capable of handling the operators and operational support staff. At the present their ACC is not large enough for them to conduct business for an extended period of time. The facility is supplied by two diversely routed distribution feeders supplied from diverse substations. There are two UPS's, and two emergency generators. The ACC also contains the backup data center.

Security at the PCC consists of fences surrounding the facilities, surveillance cameras, card key readers, biometrics, man traps and guards at the gates. The biometrics uses finger prints and card key combination.

Company D

Company D has just completed renovation to an existing building to house their Primary Control Center.

The building is supplied by two diversely routed distribution feeders fed from diverse substations. There are two UPS's, and two emergency generators. The data center is also located in this facility.

The control room has eight operator positions. Three are staffed 24x7 and five are spares. There is a video wall that is two cubes high and twelve 12 cubes wide.

Support staff is located within the vicinity of the control room.

Company D's Alternate Control Center is located within an hour from its PCC. It consists of an open room with operator consoles. No video wall or projection screens are used. The ACC space is limited. The facility is capable of handling the operators and operational support staff. The facility is supplied by two diversely routed distribution feeders supplied from a single substation. There is one UPS, and emergency generator. The ACC also contains the backup data center for the control room only.

Benchmarking Summary

	Company A	Company B	Company C	Company D
Primary Control Center				
Year Built/ Renovated	2007	2009	NA	2010
Size of Facility in Square Feet	100,000	50,000	48,000	N/A
Cost of Construction	$49.5M	$34 M	$30 M	N/A
Cost per Square Foot	$495	$680	$625	N/A
Dual feeders separate sources	Yes	Yes	Yes	Yes
Primary & Backup UPS	Yes	Yes	Yes	Yes
Primary & Backup Emergency Generators	Yes	Yes	Yes	Yes
Data Center Located in Primary Facility	Yes	Yes	Yes	Yes
Console Positions /Spare	8/1	9/3	8/3	8/5
Video Wallboard	Yes	Yes	Yes	Yes
Facility Meets Long Term Needs	Yes	Yes	Yes	Yes
Alternate Control Center				
Dual feeders separate sources	Yes	Yes	Yes	Yes
Primary & Backup UPS	Yes	Yes	Yes	Yes
Primary & Backup Emergency Generators	Yes	Yes	Yes	Yes
Backup Data Center Located in Alternate Facility	Yes	Yes	Yes	Yes
Facility Design with Operator Positions/ number of positions	No/room with desks	Yes/9	No/room with desks	Yes/3
Display Wall	No	Yes	No	No
Facility Accommodates Operational Support Staff	Yes	Yes	Yes	Yes
Accommodates Non Operational Support Staff	No	Yes	No	No
Facility Meets Long Term Needs	No	Yes	No	Yes
Security:				
Fences/Barriers	PCC/ACC	PCC/ACC	PCC/ACC	PCC/ACC
Card Keys	PCC/ACC	PCC/ACC	PCC/ACC	PCC/ACC
Surveillance Cameras	PCC/ACC	PCC/ACC	PCC/ACC	PCC/ACC
Biometrics	No	PCC/ACC	PCC/ACC	No
Man Traps	No	No	PCC/ACC	No
Security Guard	PCC/ACC	PCC/ACC	PCC/ACC	PCC

Benchmark Conclusion

The benchmark survey indicates that NYISO's plan to update their Primary and Alternate Control Center facilities is in line with the neighboring control centers efforts to update their facilities. The survey also indicates that NYISO's construction cost per square foot estimate is comparable to the neighboring control center's costs.
Although, Companies A and C's Alternate Control Center facilities does not meet their future needs they are aware that they will have to upgrade these facilities in the near future.

6. Conclusions and Recommendations

The NYISO's Carman Road Primary Control Center ("PCC") has served the organization well over the past forty years of operation. In addition, the Krey Boulevard Alternate Control Center ("ACC") has met the initial needs of the NYISO. Today, the NYISO recognizes that the age and limitations of the two facilities will not accommodate the expanded responsibilities of the NYISO in the near term (one to four year timeframe), and that both facilities will require updating to meet their future operating roles.

Examples of these expanded responsibilities are:

1. Broader Regional Markets
2. Situational awareness tools
3. Management of increasing levels of renewable resources
4. Evolving and more stringent NERC CIP standards
5. Expanded definitions of the Bulk Power System and subsequent additional responsibilities as the NERC Reliability Coordinator

With these additional responsibilities in mind, the NYISO has developed options that would provide for long-term, reliable, and updated control center facilities to support its future reliability and market functions.

In an effort to determine the best facility option that would meet the NYISO's future requirements, the following factors were considered:

1. Functionality and age of present facilities
2. Facility requirements to sustain future control center responsibilities
3. Costs
4. Risk
5. Long term use of ACC

During the analysis of NYISO's options it was determined that Alternative 2 was not a viable option due to the space constraints of the Krey Boulevard ACC. This facility will not support extended operation nor the future expanded NYISO responsibilities and should be removed from further consideration by the NYISO and market participants. Alternative 2A was developed to address the shortcomings of Alternative 2.

Alternative 3 provides NYISO with the foundation, feasibility and infrastructure to support its current and expanded responsibilities. This option gives the NYISO flexibility in present day operation and in the future in both the PCC and ACC facilities. There is also no need for additional temporary facilities to be installed at the ACC, since conference rooms and the old data center would be available for this use.

The analysis of Alternative 2A indicates that although this option will fulfill the NYISO's present day needs, it will not support future expansion due to limited space. Temporary

office space to house the operation support staff would be installed at Krey Boulevard in the event that the Carman Road PCC becomes unavailable for use. Even though the trailers will only be installed on an as-needed basis, the NYISO will have to absorb the yearly cost to have them available on a moment's notice. In addition, the Carman Road location is an aging facility that has been modified and adapted to meet the current needs of the NYISO

The results from this analysis and findings shows that Alternative 3 is the most economic plan with an NPC of $40.5 M as compared to $48.2 M for Alternative 2A through 2021. It positions the NYISO to meet its expanded responsibilities for the future as well as giving options for NYISO to grow.

Based on the analysis above, EIG recommends proceeding with Alternative 3. Realizing that current time lines for implementing the NYISO's Alternative 2A or 3 are in the 22 – 34 month range, it is reasonable and prudent that the NYISO proceed with the recommended plan as soon as possible.

Attachment XV.

Construction Management Agreement

AIA® Document A133™ – 2009

Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price

AGREEMENT made as of the day of in the year 2010
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status and address)

New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, NY 12144

and the Construction Manager:
(Name, legal status and address)

U.W. Marx, Inc.
20 Gurley Avenue
Troy, NY 12182

for the following Project:
(Name and address or location)

Infrastructure Master Plan
10 Krey Boulevard, Towns of North Greenbush and East Greenbush, New York
3890 Carman Road, Town of Guilderland, New York
The Project consists of renovations of the Owner's existing facilities and construction of additions at both of its locations as part of the Owner's Critical Facilities Upgrade, Infrastructure Master Plan. The Project includes, among other things, the construction of a new ±65,000 sq. ft. additions to the Owner's headquarters at in the Towns of East Greenbush and North Greenbush, NY and the construction of a new ±13,000 sq. ft. data center at the Owner's facility in the Town of Guilderland, NY, all in accordance with (i) the Owner's Request for Proposal and Bid Form for Construction Management Services dated December 23, 2009 (the "RFP") and (ii) the Construction Manager's Response to the RFP dated January 25, 2010, which are annexed hereto as ***Exhibit A-1*** and made a part hereof.

The Architect:
(Name, legal status and address)

Woodward Connor Gillies & Seleman Architects
20 Corporate Woods Boulevard
Albany, New York 12211

The Owner's Designated Representative:
(Name, address and other information)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

The Construction Manager's Designated Representative:
(Name, address and other information)

Chris Hewison
20 Gurley Ave
Troy, NY 12182

The Architect's Designated Representative:
(Name, address and other information)

The Owner and Construction Manager agree as follows.

TABLE OF ARTICLES

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 The Contract Documents

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract and are as fully a part of the Contract as if attached to this Agreement or repeated herein. Upon the Owner's acceptance of the Construction Manager's Guaranteed Maximum Price proposal, the Contract Documents will also include the documents described in Section 2.2.3 and identified in the Guaranteed Maximum Price Amendment and revisions prepared by the Architect and furnished by the Owner as described in Section 2.2.8. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. If anything in the other Contract Documents, other than a Modification, is inconsistent with this Agreement, this Agreement shall govern.

§ 1.2 Relationship of the Parties

The Construction Manager accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Construction Manager's skill and judgment in furthering the interests of the Owner; to furnish efficient construction administration, management services and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish or approve, in a timely manner, information required by the Construction Manager and to make payments to the Construction Manager in accordance with the requirements of the Contract Documents.

§ 1.3 General Conditions

For the Preconstruction Phase, AIA Document A201™–2007, General Conditions of the Contract for Construction, as amended by the parties and annexed hereto as ***Exhibit B*** and made a part hereof, shall apply only as specifically provided in this Agreement. For the Construction Phase, the general conditions of the contract shall be as set forth in A201–2007, as amended by the parties and annexed hereto as ***Exhibit B*** and made a part hereof. The term "Contractor" as used in A201–2007 shall mean the Construction Manager. All references herein to A201-2007 shall refer to A201-2007 as amended by the parties and annexed hereto as ***Exhibit B*** and made a part hereof.

ARTICLE 2 CONSTRUCTION MANAGER'S RESPONSIBILITIES

The Construction Manager's Preconstruction Phase responsibilities are set forth in Sections 2.1 and 2.2. The Construction Manager's Construction Phase responsibilities are set forth in Section 2.3. The Owner and Construction Manager may agree, in consultation with the Architect, for the Construction Phase to commence prior to completion of the Preconstruction Phase, in which case, both phases will proceed concurrently. The Construction Manager shall identify a representative authorized to act on behalf of the Construction Manager with respect to the Project.

§ 2.1 Preconstruction Phase

§ 2.1.1 The Construction Manager shall provide a preliminary evaluation of the Project as described in ***Exhibit A-1***, schedule and construction budget requirements, each in terms of the other.

§ 2.1.2 Consultation

The Construction Manager shall schedule and conduct meetings with the Architect and Owner to discuss such matters as procedures, progress, coordination, and scheduling of the Work. The Construction Manager shall advise the Owner and the Architect on proposed site use and improvements, selection of materials, and building systems and equipment. The Construction Manager shall also provide recommendations consistent with the Project requirements to the Owner and Architect on constructability; availability of materials and labor; time requirements for procurement, installation and construction; and factors related to construction cost including, but not limited to, costs of alternative designs or materials, preliminary budgets, life-cycle data, and possible cost reductions.

§ 2.1.3 When Project requirements in Section 3.1.1 have been sufficiently identified, the Construction Manager shall prepare and periodically update a Project schedule for the Architect's review and the Owner's acceptance. The Construction Manager shall obtain the Architect's approval for the portion of the Project schedule relating to the performance of the Architect's services. The Project schedule shall coordinate and integrate the Construction Manager's services, the Architect's services, other Owner consultants' services, and the Owner's responsibilities and identify items that could affect the Project's timely completion. The updated Project schedule shall include the following: submission of the Guaranteed Maximum Price proposal; components of the Work; times of commencement and completion required of each Subcontractor; ordering and delivery of products, including those that must be ordered well in advance of construction; and the occupancy requirements of the Owner.

§ 2.1.4 Phased Construction

The Construction Manager shall provide recommendations with regard to accelerated or fast-track scheduling, procurement, or phased construction. The Construction Manager shall take into consideration cost reductions, cost information, constructability, provisions for temporary facilities and procurement and construction scheduling issues.

§ 2.1.5 Preliminary Cost Estimates

§ 2.1.5.1 Based on the preliminary design and other design criteria prepared by the Architect, the Construction Manager shall prepare preliminary estimates of the Cost of the Work or the cost of program requirements using area, volume or similar conceptual estimating techniques for the Architect's review and Owner's approval. If the Architect or Construction Manager suggests alternative materials and systems, the Construction Manager shall provide cost evaluations of those alternative materials and systems.

§ 2.1.5.2 As the Architect progresses with the preparation of the Schematic Design, Design Development and Construction Documents, the Construction Manager shall prepare and update, at appropriate intervals agreed to by the Owner, Construction Manager and Architect, estimates of the Cost of the Work of increasing detail and refinement and allowing for the further development of the design until such time as the Owner and Construction Manager agree on a Guaranteed Maximum Price for the Work. Such estimates shall be provided for the Architect's review and the Owner's approval. The Construction Manager shall inform the Owner and Architect when estimates of the Cost of the Work exceed the latest approved Project budget and make recommendations for corrective action.

§ 2.1.6 Subcontractors and Suppliers

The Construction Manager shall develop bidders' interest in the Project.

§ 2.1.7 The Construction Manager shall prepare, for the Architect's review and the Owner's acceptance, a procurement schedule for items that must be ordered well in advance of construction. The Construction Manager shall expedite and coordinate the ordering and delivery of materials that must be ordered well in advance of construction. If the Owner agrees to procure any items prior to the establishment of the Guaranteed Maximum Price, the Owner shall

procure the items on terms and conditions acceptable to the Construction Manager. Upon the establishment of the Guaranteed Maximum Price, the Owner shall assign all contracts for these items to the Construction Manager and the Construction Manager shall thereafter accept responsibility for them.

§ 2.1.8 Extent of Responsibility

The Construction Manager shall exercise reasonable care in preparing schedules and estimates. The Construction Manager, however, does not warrant or guarantee estimates and schedules except as may be included as part of the Guaranteed Maximum Price. The Construction Manager is not required to ascertain that the Drawings and Specifications are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Construction Manager shall promptly report to the Architect and Owner any nonconformity discovered by or made known to the Construction Manager as a request for information in such form as the Architect may require.

§ 2.1.9 Notices and Compliance with Laws

The Construction Manager shall comply with all applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to its performance under this Contract, and with equal employment opportunity programs, and other programs as may be required by governmental and quasi governmental authorities for inclusion in the Contract Documents.

§ 2.2 Guaranteed Maximum Price Proposal and Contract Time

§ 2.2.1 At a time to be mutually agreed upon by the Owner and the Construction Manager and in consultation with the Architect, the Construction Manager shall prepare a Guaranteed Maximum Price proposal for the Owner's review and acceptance. The Guaranteed Maximum Price in the proposal shall be the sum of the Construction Manager's estimate of the Cost of the Work, including contingencies described in Section 2.2.4, and the Construction Manager's Fee.

§ 2.2.2 To the extent that the Drawings and Specifications are anticipated to require further development by the Architect, the Construction Manager shall provide in the Guaranteed Maximum Price for such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include such things as changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

§ 2.2.3 The Construction Manager shall include with the Guaranteed Maximum Price proposal a written statement of its basis, which shall include the following:

.1 A list of the Drawings and Specifications, including all Addenda thereto, and the Conditions of the Contract;

.2 A list of the clarifications and assumptions made by the Construction Manager in the preparation of the Guaranteed Maximum Price proposal, including assumptions under Section 2.2.2, to supplement the information provided by the Owner and contained in the Drawings and Specifications;

.3 A statement of the proposed Guaranteed Maximum Price, including a statement of the estimated Cost of the Work organized by trade categories or systems, allowances, contingency, and the Construction Manager's Fee;

.4 The anticipated date of Substantial Completion upon which the proposed Guaranteed Maximum Price is based; and

.5 A date by which the Owner must accept the Guaranteed Maximum Price.

§ 2.2.4 In preparing the Construction Manager's Guaranteed Maximum Price proposal, the Construction Manager shall include its contingency for the Construction Manager's exclusive use to cover those costs considered reimbursable as the Cost of the Work but not included in a Change Order.

§ 2.2.5 The Construction Manager shall meet with the Owner and Architect to review the Guaranteed Maximum Price proposal. In the event that the Owner and Architect discover any inconsistencies or inaccuracies in the information presented, they shall promptly notify the Construction Manager, who shall make appropriate adjustments to the Guaranteed Maximum Price proposal, its basis, or both.

§ 2.2.6 If the Owner notifies the Construction Manager that the Owner has accepted the Guaranteed Maximum Price proposal in writing before the date specified in the Guaranteed Maximum Price proposal, the Guaranteed Maximum Price proposal shall be deemed effective without further acceptance from the Construction Manager. Following

acceptance of a Guaranteed Maximum Price, the Owner and Construction Manager shall execute the Guaranteed Maximum Price Amendment amending this Agreement, a copy of which the Owner shall provide to the Architect. The Guaranteed Maximum Price Amendment shall set forth the agreed upon Guaranteed Maximum Price with the information and assumptions upon which it is based.

§ 2.2.7 The Construction Manager shall not incur any cost to be reimbursed as part of the Cost of the Work prior to the commencement of the Construction Phase, unless the Owner provides prior written authorization for such costs.

§ 2.2.8 The Owner shall authorize the Architect to provide the revisions to the Drawings and Specifications to incorporate the agreed-upon assumptions and clarifications contained in the Guaranteed Maximum Price Amendment. The Owner shall promptly furnish those revised Drawings and Specifications to the Construction Manager as they are revised. The Construction Manager shall notify the Owner and Architect of any inconsistencies between the Guaranteed Maximum Price Amendment and the revised Drawings and Specifications.

§ 2.2.9 The Construction Manager shall include in the Guaranteed Maximum Price all sales, consumer, use and similar taxes for the Work provided by the Construction Manager that are legally enacted, whether or not yet effective, at the time the Guaranteed Maximum Price Amendment is executed.

§ 2.3 Construction Phase

§ 2.3.1 General

§ 2.3.1.1 For purposes of Section 8.1.2 of A201–2007, the date of commencement of the Work shall mean the date of commencement of the Construction Phase.

§ 2.3.1.2 The Construction Phase shall commence upon the Owner's acceptance of the Construction Manager's Guaranteed Maximum Price proposal or the Owner's issuance of a Notice to Proceed, whichever occurs earlier.

§ 2.3.2 Administration

§ 2.3.2.1 Those portions of the Work that the Construction Manager does not customarily perform with the Construction Manager's own personnel shall be performed under subcontracts or by other appropriate agreements with the Construction Manager. The Owner may designate specific persons from whom, or entities from which, the Construction Manager shall obtain bids. The Construction Manager shall obtain bids from Subcontractors and from suppliers of materials or equipment fabricated especially for the Work and shall deliver such bids to the Architect. The Owner shall then determine, with the advice of the Construction Manager and the Architect, which bids will be accepted. The Construction Manager shall not be required to contract with anyone to whom the Construction Manager has reasonable objection. The Construction Manager may accept bids for work it typically or customarily performs. The Construction Manager will have the right to self perform any work it desires to do so. If bids are received for work the Construction Manager is capable of performing, the Construction Manager shall have the right of performing that work for the lowest price submitted by others. All costs associated with that work shall be broken out and tracked separately and be identifiable through an audit process.

§ 2.3.2.2 If the Guaranteed Maximum Price has been established and when a specific bidder (1) is recommended to the Owner by the Construction Manager, (2) is qualified to perform that portion of the Work, and (3) has submitted a bid that conforms to the requirements of the Contract Documents without reservations or exceptions, but the Owner requires that another bid be accepted, then the Construction Manager may require that a Change Order be issued to adjust the Contract Time and the Guaranteed Maximum Price by the difference between the bid of the person or entity recommended to the Owner by the Construction Manager and the amount and time requirement of the subcontract or other agreement actually signed with the person or entity designated by the Owner.

§ 2.3.2.3 Subcontracts or other agreements shall conform to the applicable payment provisions of this Agreement, and shall not be awarded on the basis of cost plus a fee without the prior consent of the Owner. If the Subcontract is awarded on a cost-plus a fee basis, the Construction Manager shall provide in the Subcontract for the Owner to receive the same audit rights with regard to the Subcontractor as the Owner receives with regard to the Construction Manager in Section 6.11 below.

§ 2.3.2.4 If the Construction Manager recommends a specific bidder that may be considered a "related party" according to Section 6.10, then the Construction Manager shall promptly notify the Owner in writing of such relationship and notify the Owner of the specific nature of the contemplated transaction, according to Section 6.10.2.

§ 2.3.2.5 The Construction Manager shall schedule and conduct meetings to discuss such matters as procedures, progress, coordination, scheduling, and status of the Work. The Construction Manager shall prepare and promptly distribute minutes to the Owner and Architect.

§ 2.3.2.6 Upon the execution of the Guaranteed Maximum Price Amendment, the Construction Manager shall prepare and submit to the Owner and Architect a construction schedule for the Work and submittal schedule in accordance with Section 3.10 of A201–2007.

§ 2.3.2.7 The Construction Manager shall record the progress of the Project. On a monthly basis, or otherwise as agreed to by the Owner, the Construction Manager shall submit written progress reports to the Owner and Architect, showing percentages of completion and other information required by the Owner. The Construction Manager shall also keep, and make available to the Owner and Architect, a daily log containing a record for each day of weather, portions of the Work in progress, number of workers on site, identification of equipment on site, problems that might affect progress of the work, accidents, injuries, and other information required by the Owner.

§ 2.3.2.8 The Construction Manager shall develop a system of cost control for the Work, including regular monitoring of actual costs for activities in progress and estimates for uncompleted tasks and proposed changes. The Construction Manager shall identify variances between actual and estimated costs and report the variances to the Owner and Architect and shall provide this information in its monthly reports to the Owner and Architect, in accordance with Section 2.3.2.7 above.

§ 2.4 Professional Services

Section 3.12.10 of A201–2007 shall apply to both the Preconstruction and Construction Phases.

§ 2.5 Hazardous Materials

Section 10.3 of A201–2007 shall apply to both the Preconstruction and Construction Phases.

ARTICLE 3 OWNER'S RESPONSIBILITIES

§ 3.1 Information and Services Required of the Owner

§ 3.1.1 The Owner shall provide information with reasonable promptness, regarding requirements for and limitations on the Project, including a written program which shall set forth the Owner's objectives, constraints, and criteria, including schedule, space requirements and relationships, flexibility and expandability, special equipment, systems sustainability and site requirements.

§ 3.1.2 Prior to the execution of the Guaranteed Maximum Price Amendment, the Construction Manager may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Construction Manager may only request such evidence if (1) the Owner fails to make payments to the Construction Manager as the Contract Documents require, or (2) a change in the Work materially changes the Contract Sum. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Construction Manager and Architect.

§ 3.1.3 The Owner shall establish and periodically update the Owner's budget for the Project, including (1) the budget for the Cost of the Work as defined in Section 6.1.1, (2) the Owner's other costs, and (3) reasonable contingencies related to all of these costs. If the Owner significantly increases or decreases the Owner's budget for the Cost of the Work, the Owner shall notify the Construction Manager and Architect. The Owner and the Architect, in consultation with the Construction Manager, shall thereafter agree to a corresponding change in the Project's scope and quality.

§ 3.1.4 Structural and Environmental Tests, Surveys and Reports. During the Preconstruction Phase and to the extent necessary for the Construction Manager's performance of the Work, the Owner shall furnish the following information or services with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Construction Manager's performance of the Work with reasonable promptness after receiving the Construction Manager's written request for such information or services. The Construction Manager shall be entitled to rely on the accuracy of information and services furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 3.1.4.1 The Owner shall furnish tests, inspections and reports required by law and as otherwise agreed to by the parties, such as structural, mechanical, and chemical tests, tests for air and water pollution, and tests for hazardous materials.

§ 3.1.4.2 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The surveys and legal information shall include, as applicable, grades and lines of streets, alleys, pavements and adjoining property and structures; designated wetlands; adjacent drainage; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the site; locations, dimensions and necessary data with respect to existing buildings, other improvements and trees; and information concerning available utility services and lines, both public and private, above and below grade, including inverts and depths. All the information on the survey shall be referenced to a Project benchmark.

§ 3.1.4.3 The Owner, when such services are requested, shall furnish services of geotechnical engineers, which may include but are not limited to test borings, test pits, determinations of soil bearing values, percolation tests, evaluations of hazardous materials, seismic evaluation, ground corrosion tests and resistivity tests, including necessary operations for anticipating subsoil conditions, with written reports and appropriate recommendations.

§ 3.1.4.4 During the Construction Phase, the Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control when and to the extent necessary for the Construction Manager's performance of the Work with reasonable promptness after receiving the Construction Manager's written request for such information or services.

§ 3.2 Owner's Designated Representative

The Owner shall identify a representative authorized to act on behalf of the Owner with respect to the Project. The Owner's representative shall render decisions promptly and furnish information expeditiously, so as to avoid unreasonable delay in the services or Work of the Construction Manager. Except as otherwise provided in Section 4.2.1 of A201–2007, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 3.2.1 Legal Requirements. The Owner shall furnish all legal, insurance and accounting services, including auditing services, that may be reasonably necessary at any time for the Project to meet the Owner's needs and interests.

§ 3.3 Architect

The Owner shall retain an Architect to provide those services, duties and responsibilities as described in AIA Document B101™–2007, Standard Form of Agreement Between Owner and Architect as such agreement has been amended by the Owner and the Architect, including any additional services approved by the Owner that are necessary for the Preconstruction and Construction Phase services under this Agreement. The Owner shall provide the Construction Manager a copy of the executed agreement between the Owner and the Architect, and any further modifications to the agreement.

ARTICLE 4 COMPENSATION AND PAYMENTS FOR PRECONSTRUCTION PHASE SERVICES

§ 4.1 Compensation

§ 4.1.1 For the Construction Manager's Preconstruction Phase services, the Owner shall compensate the Construction Manager separately but same shall be included in the GMP.

§ 4.1.2 For the Construction Manager's Preconstruction Phase services described in Sections 2.1 and 2.2:
(Insert amount of, or basis for, compensation and include a list of reimbursable cost items, as applicable.)

68,000.00 for Direct Personnel expenses
$10,000.00 for reimbursable expenses

§ 4.1.3 If the Preconstruction Phase services covered by this Agreement have not been completed within a time to be agreed upon by Owner and Construction Manager, through no fault of the Construction Manager, the Construction Manager's compensation for Preconstruction Phase services shall be negotiated.

§ 4.1.4 Compensation based on Direct Personnel Expense includes the direct salaries of the Construction Manager's personnel providing Preconstruction Phase services on the Project and the Construction Manager's costs for the mandatory and customary contributions and benefits related thereto, such as employment taxes and other statutory employee benefits, insurance, sick leave, holidays, vacations, employee retirement plans and similar contributions.

§ 4.2 Payments

§ 4.2.1 Unless otherwise agreed, payments for services shall be made monthly in proportion to services performed.

§ 4.2.2 Payments are due and payable thirty (30) days after the Owner's receipt of the Construction Manager's invoice. Amounts unpaid sixty (60) days after the invoice date shall bear interest at the rate entered below, or in the absence thereof at the legal rate prevailing from time to time at the principal place of business of the Construction Manager.

(Insert rate of monthly or annual interest agreed upon.)

The Prime Rate as most recently published in the Wall Street Journal +1 percentage point.

ARTICLE 5 COMPENSATION FOR CONSTRUCTION PHASE SERVICES

§ 5.1 For the Construction Manager's performance of the Work as described in Section 2.3, the Owner shall pay the Construction Manager the Contract Sum in current funds for the Construction Manager's performance of the Contract. The Contract Sum is the Cost of the Work as defined in Section 6.1.1 plus the Construction Manager's Fee.

§ 5.1.1 The Construction Manager's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Construction Manager's Fee.)

1.65% of total cost of work

§ 5.1.2 The method of adjustment of the Construction Manager's Fee for changes in the Work:

10% overhead and 5% profit

§ 5.1.3 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

10% overhead and 5% profit

§ 5.1.4 Rental rates for Construction Manager-owned equipment shall not exceed eighty-five percent (85 %) of the standard rate paid at the place of the Project.

§ 5.1.5 Unit prices, if any:

(Identify and state the unit price; state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 5.2 Guaranteed Maximum Price

§ 5.2.1 The Construction Manager guarantees that the Contract Sum shall not exceed the Guaranteed Maximum Price set forth in the Guaranteed Maximum Price Amendment, as it is amended from time to time. To the extent the Cost of the Work exceeds the Guaranteed Maximum Price, the Construction Manager shall bear such costs in excess of the Guaranteed Maximum Price without reimbursement or additional compensation from the Owner.

(Insert specific provisions if the Construction Manager is to participate in any savings.)

If the Contract Sum (i.e., the sum of the Construction Manager's Fee plus costs permitted hereunder is less than the Guaranteed Maximum Price, the Construction Manager shall be entitled to twenty (20) percent (20%) of the savings up to a maximum of $500,000.00.

§ 5.2.2 The Guaranteed Maximum Price is subject to additions and deductions by Change Order as provided in the Contract Documents and the Date of Substantial Completion shall be subject to adjustment as provided in the Contract Documents.

§ 5.3 Changes in the Work

§ 5.3.1 The Owner may, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions. The Owner shall issue such changes in writing. The Architect may make minor changes in the Work as provided in Section 7.4 of AIA Document A201–2007, General Conditions of the Contract for Construction. The Construction Manager shall be entitled to an equitable adjustment in the Contract Time as a result of changes in the Work.

§ 5.3.2 Adjustments to the Guaranteed Maximum Price on account of changes in the Work subsequent to the execution of the Guaranteed Maximum Price Amendment may be determined by any of the methods listed in Section 7.3.3 of AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 5.3.3 In calculating adjustments to subcontracts (except those awarded with the Owner's prior consent on the basis of cost plus a fee), the terms "cost" and "fee" as used in Section 7.3.3.3 of AIA Document A201–2007 and the term "costs" as used in Section 7.3.7 of AIA Document A201–2007 shall have the meanings assigned to them in AIA Document A201–2007 and shall not be modified by Sections 5.1 and 5.2, Sections 6.1 through 6.7, and Section 6.8 of this Agreement. Adjustments to subcontracts awarded with the Owner's prior consent on the basis of cost plus a fee shall be calculated in accordance with the terms of those subcontracts.

§ 5.3.4 In calculating adjustments to the Guaranteed Maximum Price, the terms "cost" and "costs" as used in the above-referenced provisions of AIA Document A201–2007 shall mean the Cost of the Work as defined in Sections 6.1 to 6.7 of this Agreement and the term "fee" shall mean the Construction Manager's Fee as defined in Section 5.1 of this Agreement.

§ 5.3.5 If no specific provision is made in Section 5.1.2 for adjustment of the Construction Manager's Fee in the case of changes in the Work, or if the extent of such changes is such, in the aggregate, that application of the adjustment provisions of Section 5.1.2 will cause substantial inequity to the Owner or Construction Manager, the Construction Manager's Fee shall be equitably adjusted on the same basis that was used to establish the Fee for the original Work, and the Guaranteed Maximum Price shall be adjusted accordingly.

ARTICLE 6 COST OF THE WORK FOR CONSTRUCTION PHASE

§ 6.1 Costs to Be Reimbursed

§ 6.1.1 The term Cost of the Work shall mean costs necessarily incurred by the Construction Manager in the proper performance of the Work. Such costs shall be at rates not higher than the standard paid at the place of the Project except with prior consent of the Owner. The Cost of the Work shall include only the items set forth in Sections 6.1 through 6.7.

§ 6.1.2 Where any cost is subject to the Owner's prior approval, the Construction Manager shall obtain this approval prior to incurring the cost. The parties shall endeavor to identify any such costs prior to executing Guaranteed Maximum Price Amendment.

§ 6.2 Labor Costs

§ 6.2.1 Wages of construction workers directly employed by the Construction Manager to perform the construction of the Work at the site or, with the Owner's prior written approval, at off-site workshops,

§ 6.2.2 Wages or salaries of the Construction Manager's supervisory and administrative personnel when stationed at the Project site with the Owner's prior approval, with exception of labor performed at office as stated in Article 11. Upon the execution of this Agreement, Construction Manager shall provide Owner with the information above for its approval. Upon such initial approval by Owner, any deviations, revisions or alterations to same shall require Owner's written consent.

(If it is intended that the wages or salaries of certain personnel stationed at the Construction Manager's principal or other offices shall be included in the Cost of the Work, identify in Section 11.5, the personnel to be included, whether for all or only part of their time, and the rates at which their time will be charged to the Work.)

§ 6.2.3 Wages and salaries of the Construction Manager's supervisory or administrative personnel engaged at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work. Upon the execution of this Agreement, Construction Manager shall provide Owner with the information above for its approval. Upon such initial approval by Owner, any deviations, revisions or alterations to same shall require Owner's written consent.

§ 6.2.4 Costs paid or incurred by the Construction Manager for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 6.2.1 through 6.2.3.

§ 6.2.5 Bonuses, profit sharing, incentive compensation and any other discretionary payments paid to anyone hired by the Construction Manager or paid to any Subcontractor or vendor, but only with the Owner's prior written approval.

§ 6.3 Subcontract Costs

Payments made by the Construction Manager to Subcontractors in accordance with the requirements of the subcontracts.

§ 6.4 Costs of Materials and Equipment Incorporated in the Completed Construction

§ 6.4.1 Notwithstanding anything set forth in the RFP to the contrary, costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the Project.

§ 6.4.2 Costs of materials described in the preceding Section 6.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, if any, shall become the Owner's property at the completion of the Work or, at the Owner's option, shall be sold by the Construction Manager. Any amounts realized from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

§ 6.5 Costs of Other Materials and Equipment, Temporary Facilities and Related Items

§ 6.5.1 Costs of transportation, storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Construction Manager at the site and fully consumed in the performance of the Work. Costs of materials, supplies, temporary facilities, machinery, equipment and tools that are not fully consumed shall be based on the cost or value of the item at the time it is first used on the Project site less the value of the item when it is no longer used at the Project site. Costs for items not fully consumed by the Construction Manager shall mean fair market value.

§ 6.5.2 Rental charges for temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Construction Manager at the site and costs of transportation, installation, minor repairs, dismantling and removal. The total rental cost of any Construction Manager-owned item may not exceed the purchase price of any comparable item. Rates of Construction Manager-owned equipment and quantities of equipment shall be subject to the Owner's prior written approval. Upon the execution of this Agreement, Construction Manager shall provide Owner with the information above for its approval. Upon such initial approval by Owner, any deviations, revisions or alterations to same shall require Owner's written consent.

§ 6.5.3 Costs of removal of debris from the site of the Work and its proper and legal disposal.

§ 6.5.4 Costs of document reproductions, facsimile transmissions and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office.

§ 6.5.5 That portion of the reasonable expenses of the Construction Manager's supervisory or administrative personnel incurred while traveling in discharge of duties connected with the Work.

§ 6.5.6 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, subject to the Owner's prior written approval.

§ 6.6 Miscellaneous Costs

§ 6.6.1 Premiums for that portion of insurance and bonds required by the Contract Documents that can be directly attributed to this Contract. Costs for payment and performance bonds of Subcontractors should Construction Manager

and Owner, jointly, determine the need for such bonds. Self-insurance for either full or partial amounts of the coverages required by the Contract Documents, with the Owner's prior written approval.

§ 6.6.2 Sales, use or similar taxes imposed by a governmental authority that are related to the Work and for which the Construction Manager is liable.

§ 6.6.3 Fees and assessments for the building permit and for other permits, licenses and inspections for which the Construction Manager is required by the Contract Documents to pay.

§ 6.6.4 Fees of laboratories for tests required by the Contract Documents, except those related to defective or nonconforming Work for which reimbursement is excluded by Section 13.5.3 of AIA Document A201–2007 or by other provisions of the Contract Documents, and which do not fall within the scope of Section 6.7.3.

§ 6.6.5 Royalties and license fees paid for the use of a particular design, process or product required by the Contract Documents; the cost of defending suits or claims for infringement of patent rights arising from such requirement of the Contract Documents, except where the Construction Manager is adjudged liable for such infringement; and payments made in accordance with legal judgments against the Construction Manager resulting from such suits or claims and payments of settlements made with the Owner's written consent, except where the Construction Manager is adjudged liable for such infringement. However, such costs of legal defenses, judgments and settlements shall not be included in the calculation of the Construction Manager's Fee or subject to the Guaranteed Maximum Price. If such royalties, fees and costs are excluded by the last sentence of Section 3.17 of AIA Document A201–2007 or other provisions of the Contract Documents, then they shall not be included in the Cost of the Work.

§ 6.6.6 Costs for electronic equipment and software, directly related to the Work with the Owner's prior approval.

§ 6.6.7 Deposits lost for causes other than the Construction Manager's negligence or failure to fulfill a specific responsibility in the Contract Documents.

§ 6.6.8 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between the Owner and Construction Manager, reasonably incurred by the Construction Manager after the execution of this Agreement in the performance of the Work and with the Owner's prior written approval, which shall not be unreasonably withheld.

§ 6.6.9 Subject to the Owner's prior written approval, expenses incurred in accordance with the Construction Manager's standard written personnel policy for relocation and temporary living allowances of the Construction Manager's personnel required for the Work.

§ 6.6.10 Notwithstanding anything herein to the contrary, reasonable, actual costs to be negotiated by Owner and Construction Manager if the Project is suspended and the parties elect not to terminate this Agreement. In such an event, the parties agree to consider a corresponding adjustment to the GMP.

§ 6.7 Other Costs and Emergencies

§ 6.7.1 Other costs incurred in the performance of the Work if, and to the extent, approved in advance in writing by the Owner.

§ 6.7.2 Costs incurred in taking action to prevent threatened damage, injury or loss in case of an emergency affecting the safety of persons and property, as provided in Section 10.4 of AIA Document A201–2007.

§ 6.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by the Construction Manager, Subcontractors or suppliers, provided that such damaged or nonconforming Work was not caused by negligence or failure to fulfill a specific responsibility of the Construction Manager and only to the extent that the cost of repair or correction is not recovered by the Construction Manager from insurance, sureties, Subcontractors, suppliers, or others.

§ 6.7.4 The costs described in Sections 6.1 through 6.7 shall be included in the Cost of the Work, notwithstanding any provision of AIA Document A201–2007 or other Conditions of the Contract which may require the Construction Manager to pay such costs, unless such costs are excluded by the provisions of Section 6.8.

§ 6.7.5 If Construction Manager receives Sub Contractor bids for work that it typically self performs and is currently able to provide that work, or feels the need to perform that area of work to effectively control the project schedule the Construction Manager is entitled to perform the work required of that bid package for the total sum of the lowest responsible bid received. The total sum of the low bid will be the total cost allocated toward the project for this work package and will be inclusive of all costs relative to the performance of this work shall be tracked separately and accounted for in a way that is easily represented. The "low bid" price for this work package will be tracked and paid for through the GMP.

§ 6.7.6 Personal background checks as and to the extent identified by Owner.

§ 6.8 Costs Not To Be Reimbursed

§ 6.8.1 The Cost of the Work shall not include the items listed below:

.1 Salaries and other compensation of the Construction Manager's personnel stationed at the Construction Manager's principal office or offices other than the site office, except as specifically provided in Section 6.2, or as may be provided in Article 11;

.2 Expenses of the Construction Manager's principal office and offices other than the site office;

.3 Overhead and general expenses, except as may be expressly included in Sections 6.1 to 6.7;

.4 The Construction Manager's capital expenses, including interest on the Construction Manager's capital employed for the Work;.5 Except as provided in Section 6.7.3 of this Agreement, costs due to the negligence or failure of the Construction Manager, Subcontractors and suppliers or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable to fulfill a specific responsibility of the Contract;

.6 Any cost not specifically and expressly described in Sections 6.1 to 6.7;

.7 Costs, other than costs included in Change Orders approved by the Owner, that would cause the Guaranteed Maximum Price to be exceeded; and

.8 Costs for services incurred during the Preconstruction Phase.

§ 6.9 Discounts, Rebates and Refunds

§ 6.9.1 Cash discounts obtained on payments made by the Construction Manager shall accrue to the Owner if (1) before making the payment, the Construction Manager included them in an Application for Payment and received payment from the Owner, or (2) the Owner has deposited funds with the Construction Manager with which to make payments (in whole or in part); otherwise, cash discounts (or part hereof, as applicable) shall accrue to the Construction Manager. Trade discounts, rebates, refunds and amounts received from sales of surplus materials and equipment shall accrue to the Owner, and the Construction Manager shall make provisions so that they can be obtained.

§ 6.9.2 Amounts that accrue to the Owner in accordance with the provisions of Section 6.9.1 shall be credited to the Owner as a deduction from the Cost of the Work.

§ 6.10 Related Party Transactions

§ 6.10.1 For purposes of Section 6.10, the term "related party" shall mean a parent, subsidiary, affiliate or other entity having common ownership or management with the Construction Manager; any entity in which any stockholder in, or management employee of, the Construction Manager owns any interest in excess of ten percent in the aggregate; or any person or entity which has the right to control the business or affairs of the Construction Manager. The term "related party" includes any member of the immediate family of any person identified above.

§ 6.10.2 If any of the costs to be reimbursed arise from a transaction between the Construction Manager and a related party, the Construction Manager shall notify the Owner of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If the Owner, after such notification, authorizes the proposed transaction, then the cost incurred shall be included as a cost to be reimbursed, and the Construction Manager shall procure the Work, equipment, goods or service from the related party, as a Subcontractor, according to the terms of Sections 2.3.2.1, 2.3.2.2 and 2.3.2.3. If the Owner fails to authorize the transaction, the Construction Manager shall procure the Work, equipment, goods or service from some person or entity other than a related party according to the terms of Sections 2.3.2.1, 2.3.2.2 and 2.3.2.3.

§ 6.11 Accounting Records

The Construction Manager shall keep full and detailed records and accounts related to the cost of the Work and exercise such controls as may be necessary for proper financial management under this Contract and to substantiate all costs incurred. The accounting and control systems shall be satisfactory to the Owner. The Owner and the Owner's auditors shall, during regular business hours and upon reasonable notice, be afforded access to, and shall be permitted to audit and copy, the Construction Manager's records and accounts, including complete documentation supporting accounting entries, books, correspondence, instructions, drawings, receipts, subcontracts, Subcontractor's proposals, purchase orders, vouchers, memoranda and other data relating to this Contract. The Construction Manager shall preserve these records for a period of three years after final payment, or for such longer period as may be required by law.

ARTICLE 7 PAYMENTS FOR CONSTRUCTION PHASE SERVICES

§ 7.1 Progress Payments

§ 7.1.1 Based upon Applications for Payment submitted to the Architect by the Construction Manager and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Construction Manager as provided below and elsewhere in the Contract Documents.

§ 7.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 7.1.3 Provided that an Application for Payment is received by the Architect not later than the thirtieth (30th) day of a month, the Owner shall make payment of the certified amount to the Construction Manager not later than the fifteenth (15th) day after the Architect certifies the Application for Payment. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than fifteen (15) days after the Architect certifies the Application for Payment. Should the Architect fail to act on the requisition within 15 days from submission, it will be acknowledged as acceptable as submitted. Upon the Owner's request, the Construction Manager shall (i) submit a projected invoice ten (10) days prior to the submission of an Application for Payment and (ii) work in good faith to agree on schedule of value amounts for the pay period.
(Federal, state or local laws may require payment within a certain period of time.)

§ 7.1.4 With each Application for Payment, the Construction Manager shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner or Architect to demonstrate that cash disbursements already made by the Construction Manager on account of the Cost of the Work equal or exceed progress payments already received by the Construction Manager, less that portion of those payments attributable to the Construction Manager's Fee, plus payrolls for the period covered by the present Application for Payment. In addition to other required items, each Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and in compliance with applicable law of the State of New York:

(i) A current sworn statement from the Construction Manager setting forth all Subcontractors and any material suppliers with whom the Construction Manager has subcontracted, the amount of each subcontract, the amount requested for any Subcontractor or material supplier in the Application for Payment, and the amount to be paid to the Construction Manager from such progress payment, together with a current, duly executed waiver of mechanics' and material suppliers' liens from the Construction Manager; and

(ii) Current, duly executed lien waivers from all Subcontractors, material suppliers, and lower-tier Subcontractors, if any, establishing payment or satisfaction of payment of all amounts requested by the Construction Manager on behalf of such Subcontractors and material suppliers for the current Application for Payment and any previous Application for Payment; and

(iii) All information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner, the Owner's Lender, or the Architect. If required by the Owner's title insurer, the Construction Manager shall execute a personal gap undertaking in form and substance satisfactory to such title insurer.

§ 7.1.5 Each Application for Payment shall be based on the most recent schedule of values submitted by the Construction Manager in accordance with the Contract Documents. The schedule of values shall allocate the entire Guaranteed Maximum Price among the various portions of the Work, except that the Construction Manager's Fee shall be shown as a single separate item. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Construction Manager's Applications for Payment.

§ 7.1.6 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed, or (2) the percentage obtained by dividing (a) the expense that has actually been incurred by the Construction Manager on account of that portion of the Work for which the Construction Manager has made or intends to make actual payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 7.1.7 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201–2007;

.2 Add that portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work, or if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing;

.3 Add the Construction Manager's Fee, less retainage of ten (10) percent (10%). The Construction Manager's Fee shall be computed upon the Cost of the Work at the rate stated in Section 5.1 or, if the Construction Manager's Fee is stated as a fixed sum in that Section, shall be an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work bears to a reasonable estimate of the probable Cost of the Work upon its completion;

.4 Subtract retainage of ten (10) percent (10%) from that portion of the Work that the Construction Manager self-performs; provided, however, that upon the Architect's certification that the Work is fifty (50) percent (50%) completed, the retainage requirement shall be reduced to five (5) percent (5%).

.5 Subtract the aggregate of previous payments made by the Owner;

.6 Subtract the shortfall, if any, indicated by the Construction Manager in the documentation required by Section 7.1.4 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and

.7 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 7.1.8 The Owner and Construction Manager shall agree upon (1) a mutually acceptable procedure for review and approval of payments to Subcontractors and (2) the percentage of retainage held on Subcontracts (same as Prime Contract), and the Construction Manager shall execute subcontracts in accordance with those agreements.

§ 7.1.9 Except with the Owner's prior written approval, the Construction Manager shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 7.1.10 In taking action on the Construction Manager's Applications for Payment, the Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Construction Manager and shall not be deemed to represent that the Architect has made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Section 7.1.4 or other supporting data; that the Architect has made exhaustive or continuous on-site inspections; or that the Architect has made examinations to ascertain how or for what purposes the Construction Manager has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 7.2 Final Payment

§ 7.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum (less a retainage of one (1) percent (1%) of the Contract Sum, as set forth in Section 7.2.1.1 hereof), shall be made by the Owner to the Construction Manager when

.1 the Construction Manager has fully performed the Contract except for the Construction Manager's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment;

.2 the Construction Manager has submitted a final accounting for the Cost of the Work and a final Application for Payment; and

.3 a final Certificate for Payment has been issued by the Architect.

The Owner's final payment to the Construction Manager shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment. In addition to other required items, the final Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and in compliance with applicable law of the State of New York:

(i) A current sworn statement from the Construction Manager setting forth all Subcontractors and any material suppliers with whom the Construction Manager has subcontracted, the amount of each subcontract, the amount requested for any Subcontractor or material supplier in the final Application for Payment, and the amount to be paid to the Construction Manager from such final payment, together with a current, duly executed waiver of mechanics' and material suppliers' liens from the Construction Manager; and

(ii) Current, duly executed lien waivers from all Subcontractors, material suppliers, and lower-tier Subcontractors, if any, establishing payment or satisfaction of payment of all amounts requested by the Construction Manager on behalf of such Subcontractors and material suppliers for the final Application for Payment and any previous Application for Payment; and

(iii) All information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner, the Owner's Lender, or the Architect. If required by the Owner's title insurer, the Contractor shall execute a personal gap undertaking in form and substance satisfactory to such title insurer; and

(iv) Certificates of occupancy issued by the appropriate governmental bodies having jurisdiction over the Project; and

(v) All maintenance and operating manuals; and

(vi) Marked sets of field record drawings and specifications reflecting "as-built" conditions; and

(vii) Reproducible mylar drawings reflecting the location of any concealed utilities, mechanical and electrical systems, and components; and

(vii) Any special guarantees or warranties required by the Contract Documents; and

(ix) Assignments of all guarantees and warranties from Subcontractors, material suppliers, manufacturers, or vendors; and

(x) A list of names, addresses, and telephone numbers of all Subcontractors and any other persons providing guarantees and warranties.

§ 7.2.1.1 The final payment shall have subtracted from it a retainage of one (1) percent (1%) of the Contract Sum, which shall be held by the Owner to cover costs related to all punch list and warranty items for a period not to exceed one (1) year from the date of the issuance of the Architect's final Certificate of Payment. Owner shall hold such retainage in an interest bearing account. Interest on such amount shall follow principal.

§ 7.2.2 The Owner's auditors will review and report in writing on the Construction Manager's final accounting within 30 days after delivery of the final accounting to the Architect by the Construction Manager. Based upon such Cost of the Work as the Owner's auditors report to be substantiated by the Construction Manager's final accounting, and provided the other conditions of Section 7.2.1 have been met, the Architect will, within seven days after receipt of the written report of the Owner's auditors, either issue to the Owner a final Certificate for Payment with a copy to the Construction Manager, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding a certificate as provided in Section 9.5.1 of the AIA Document A201–2007. The time periods stated in this Section supersede those stated in Section 9.4.1 of the AIA Document A201–2007. The Architect is not responsible for verifying the accuracy of the Construction Manager's final accounting.

§ 7.2.3 If the Owner's auditors report the Cost of the Work as substantiated by the Construction Manager's final accounting to be less than claimed by the Construction Manager, the Construction Manager shall be entitled to request mediation of the disputed amount without seeking an initial decision pursuant to Section 15.2 of A201–2007. A request for mediation shall be made by the Construction Manager within 30 days after the Construction Manager's receipt of a copy of the Architect's final Certificate for Payment. Failure to request mediation within this 30-day period shall result in the substantiated amount reported by the Owner's auditors becoming binding on the Construction Manager. Pending a final resolution of the disputed amount, the Owner shall pay the Construction Manager the amount certified in the Architect's final Certificate for Payment.

§ 7.2.4 If, subsequent to final payment and at the Owner's request, the Construction Manager incurs costs described in Section 6.1.1 and not excluded by Section 6.8 to correct defective or nonconforming Work, the Owner shall reimburse the Construction Manager such costs and the Construction Manager's Fee applicable thereto on the same basis as if such costs had been incurred prior to final payment, but not in excess of the Guaranteed Maximum Price. If the Construction Manager has participated in savings as provided in Section 5.2.1, the amount of such savings shall be recalculated and appropriate credit given to the Owner in determining the net amount to be paid by the Owner to the Construction Manager; so long as the retainage being held by Owner then exceeds the Construction Manager's costs sought.

ARTICLE 8 INSURANCE AND BONDS

For all phases of the Project, the Construction Manager and the Owner shall purchase and maintain insurance, and the Construction Manager shall provide bonds as set forth in Article 11 of AIA Document A201–2007.
(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of Insurance or Bond	Limit of Liability or Bond Amount ($0.00)

ARTICLE 9 DISPUTE RESOLUTION

§ 9.1 Any Claim between the Owner and Construction Manager shall be resolved in accordance with the provisions set forth in this Article 9 and Article 15 of A201–2007. However, for Claims arising from or relating to the Construction Manager's Preconstruction Phase services, no decision by the Initial Decision Maker shall be required as a condition precedent to mediation or binding dispute resolution, and Section 9.3 of this Agreement shall not apply.

§ 9.2 For any Claim subject to, but not resolved by mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:
(Check the appropriate box. If the Owner and Construction Manager do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[ ] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[ ] Litigation in a court of competent jurisdiction

[ ] Other: *(Specify)*

§ 9.3 Initial Decision Maker

The parties agree to work in good faith to appoint a mutually agreeable Initial Decision Maker, as and to the extent such is needed, and as may change from time-to-time, for Claims arising from or relating to the Construction Manager's Construction Phase services.

ARTICLE 10 TERMINATION OR SUSPENSION

§ 10.1 Termination Prior to Establishment of the Guaranteed Maximum Price

§ 10.1.1 Prior to the execution of the Guaranteed Maximum Price Amendment, the Owner may terminate this Agreement upon not less than seven (7) days' written notice to the Construction Manager for the Owner's convenience and without cause, and the Construction Manager may terminate this Agreement, upon not less than fourteen (14) days' written notice to the Owner, for the reasons set forth in Section 14.1.1 of A201–2007.

§ 10.1.2 In the event of termination of this Agreement pursuant to Section 10.1.1, the Construction Manager shall be equitably compensated for Preconstruction Phase services performed prior to receipt of a notice of termination. In no event shall the Construction Manager's compensation under this Section exceed the compensation set forth in Section 4.1.

§ 10.1.3 If the Owner terminates the Contract pursuant to Section 10.1.1 after the commencement of the Construction Phase but prior to the execution of the Guaranteed Maximum Price Amendment, the Owner shall pay to the Construction Manager an amount calculated as follows, which amount shall be in addition to any compensation paid to the Construction Manager under Section 10.1.2:

.1 Take the Cost of the Work incurred by the Construction Manager to the date of termination;

.2 Add the Construction Manager's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 5.1 or, if the Construction Manager's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion; and

.3 Subtract the aggregate of previous payments made by the Owner for Construction Phase services.

The Owner shall also pay the Construction Manager fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Construction Manager which the Owner elects to retain and which is not otherwise included in the Cost of the Work under Section 10.1.3.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Construction Manager shall, as a condition of receiving the payments referred to in this Article 10, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Construction Manager, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Construction Manager under such subcontracts or purchase orders. All Subcontracts, purchase orders and rental agreements entered into by the Construction Manager will contain provisions allowing for assignment to the Owner as described above.

If the Owner accepts assignment of subcontracts, purchase orders or rental agreements as described above, the Owner will reimburse or indemnify the Construction Manager for all costs arising under the subcontract, purchase order or rental agreement, if those costs would have been reimbursable as Cost of the Work if the contract had not been terminated. If the Owner chooses not to accept assignment of any subcontract, purchase order or rental agreement that would have constituted a Cost of the Work had this agreement not been terminated, the Construction Manager will terminate the subcontract, purchase order or rental agreement and the Owner will pay the Construction Manager the costs necessarily incurred by the Construction Manager because of such termination.

§ 10.2 Termination Subsequent to Establishing Guaranteed Maximum Price

Following execution of the Guaranteed Maximum Price Amendment and subject to the provisions of Section 10.2.1 and 10.2.2 below, the Contract may be terminated as provided in Article 14 of AIA Document A201–2007.

§ 10.2.1 If the Owner terminates the Contract after execution of the Guaranteed Price Amendment, the amount payable to the Construction Manager pursuant to Sections 14.2 and 14.4 of A201–2007 shall not exceed the amount the Construction Manager would otherwise have received pursuant to Sections 10.1.2 and 10.1.3 of this Agreement.

§ 10.2.2 If the Construction Manager terminates the Contract after execution of the Guaranteed Maximum Price Amendment, the amount payable to the Construction Manager under Section 14.1.3 of A201–2007 shall not exceed the amount the Construction Manager would otherwise have received under Sections 10.1.2 and 10.1.3 above, except that the Construction Manager's Fee shall be calculated as if the Work had been fully completed by the Construction Manager, utilizing as necessary a reasonable estimate of the Cost of the Work for Work not actually completed.

§ 10.3 Suspension
The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007. In such case, the Guaranteed Maximum Price and Contract Time shall be increased as provided in Section 14.3.2 of AIA Document A201–2007, except that the term "profit" shall be understood to mean the Construction Manager's Fee as described in Sections 5.1 and 5.3.5 of this Agreement.

ARTICLE 11 MISCELLANEOUS PROVISIONS
§ 11.1 Terms in this Agreement shall have the same meaning as those in A201–2007.

§ 11.2 Ownership and Use of Documents
Section 1.5 of A201–2007 shall apply to both the Preconstruction and Construction Phases.

§ 11.3 Governing Law
Section 13.1 of A201–2007 shall apply to both the Preconstruction and Construction Phases.

§ 11.4 Assignment
The Owner and Construction Manager, respectively, bind themselves, their agents, successors, assigns and legal representatives to this Agreement. Neither the Owner nor the Construction Manager shall assign this Agreement without the written consent of the other, except that the Owner may assign this Agreement to a lender providing financing for the Project if the lender agrees to assume the Owner's rights and obligations under this Agreement. Except as provided in Section 13.2.2 of A201–2007, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 11.5 Other provisions:

§ 11.5.1 The Construction Manager represents and warrants the following to the Owner (in addition to any other representations and warranties contained in this Agreement), as an inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement, and the final completion of the Project:

(i) that it its financially solvent, able to pay all debts as they mature, and possessed of sufficient working capital to complete the Project and perform all obligations hereunder;
(ii) that it is able to furnish the personnel required to complete the Work and perform its obligations hereunder;
(iii) that it is authorized to do business in the State of New York and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Project;
(iv) that its execution of this Agreement and its performance thereof is within its duly authorized powers;
(v) that its duly authorized representative has visited the Project sites, familiarized itself with the local and special conditions under which the Work is to be performed, and correlated its observations with the requirements of Project; and
(vi) that it possesses the necessary level of experience and expertise in the construction, construction management, and superintendence of projects of the size, complexity, and nature of this particular Project, and it will perform the Work with care, skill, and diligence.

The foregoing warranties are in addition to, and not in lieu of, any and all other liability imposed upon the Construction Manager by law with respect to the Construction Manager's duties, obligations, and performance hereunder. The Construction Manager acknowledges that the Owner is relying upon the Construction Manager's skill and experience in connection with the Work called for hereunder.

§ 11.5.2 Nothing contained in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the Owner or the Construction Manager.
§ 11.5.3 If required by the Owner or the Owner's Lender, all payments to the Construction Manager shall be made through a construction escrow (the "Construction Escrow") established with _____ (the "Escrow Trustee"). The Construction Manager hereby agrees to execute an escrow agreement that shall be (i) consistent with the requirements of the Contract Documents, except as the standard procedures of the Escrow Trustee may otherwise require, (ii)

structured to provide that the Escrow Trustee may disburse funds directly to Subcontractors or to the Construction Manager and Subcontractors jointly, if so directed by the Owner, and (iii) otherwise reasonably satisfactory to the Owner, the Construction Manager, and the Architect (the "Escrow Agreement"). After full execution, the Escrow Agreement shall be attached hereto and made a part hereof as ***Exhibit C***.

§ 11.5.4 Notwithstanding anything to the contrary in the Contract Documents, this Agreement and all of its terms and conditions are subject to the approval of or modification by the Owner's Lender. The Construction Manager acknowledges that the Owner is financing the Work and will use its best efforts to comply with the requirements of the Owner's Lender, including, without limitation, the following: (i) making the Project site available at all reasonable times for inspection by the Owner's Lender; (ii) curing defaults existing under the Contract Documents; and (iii) executing a consent to assignment of the Contract Documents in the form required by the Owner's Lender and any other documents the Owner's Lender may reasonably request.

§ 11.5.5 Labor costs for salaried personnel working at the main office will be a labor cost allowed as specified in article 6.2.2. Labor costs for home office work shall be recorded in detail and charged at the rates specified in respondents January 25th, 2010 reply to RFP specifically page 12 of 21 under Tab 2 of the document as attached hereto and noted as Exhibit "A"

ARTICLE 12 SCOPE OF THE AGREEMENT

§ 12.1 This Agreement represents the entire and integrated agreement between the Owner and the Construction Manager and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both Owner and Construction Manager.

§ 12.2 The following documents comprise the Agreement:

.1 AIA Document A133–2009, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price

.2 AIA Document A201–2007, General Conditions of the Contract for Construction, as amended by the parties and annexed hereto as ***Exhibit B*** and made a part hereof

.3 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed, or the following:

.4 AIA Document E202™–2008, Building Information Modeling Protocol Exhibit, if completed, or the following:

.5 Other documents:
(List other documents, if any, forming part of the Agreement.)

The Owner's Request for Proposal and Bid Form for Construction Management Services dated December 23, 2009 (the "RFP"), which includes a Scope of Work for the Project and (ii) the Construction Manager's Response to the RFP dated January 25, 2010, which are annexed hereto as ***Exhibit A-1*** and made a part hereof.

Escrow Agreement (if applicable) by and among the Owner, the Owner's Lender, and the Construction Manager to be annexed to the GMP (Exhibit A) and made a part hereof.

This Agreement is entered into as of the day and year first written above.

OWNER *(Signature)*	**CONSTRUCTION MANAGER** *(Signature)*
Richard J. Dewey V.P.	Jeff West V.P.
(Printed name and title)	*(Printed name and title)*

(Signature)

(Name / Title)

(Signature)

(Name / Title)

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
Infrastructure Master Plan - Architectural Services
KCC and PCC
Infrastructure Master Plan
10 Krey Boulevard, Towns of North Greenbush and East Greenbush, New York
3890 Carman Road, Town of Guilderland, New York
The Project consists of renovations of the Owner's existing facilities and construction of additions at both of its locations as part of the Owner's Critical Facilities Upgrade, Infrastructure Master Plan. The Project includes, among other things, the construction of a new 65,000 sq. ft. additions to the Owner's headquarters at in the Towns of East Greenbush and North Greenbush, NY and the construction of a new 13,000 sq. ft. data center at the Owner's facility in the Town of Guilderland, NY, all in accordance with (i) the Owner's Request for Proposal and Bid Form for Architectural and Engineering Design Services dated December 21, 2009 and (ii) Owner's Request for Proposal and Bid Form for Construction Management Services dated December 23, 2009 (collectively, the "RFPs").

THE OWNER:
(Name and address)
New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, NY 12144

THE CONSTRUCTION MANAGER:
(Name and address)
U.W. Marx, Inc.
20 Gurley Avenue
Troy, NY 12182

THE ARCHITECT:
(Name and address)
Woodward Connor Gillies & Seleman Architects
20 Corporate Woods Boulevard
Albany, New York 12211

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

TABLE OF ARTICLES

INDEX
(Numbers and Topics in Bold are Section Headings)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 **[Replaced by terms in agreement between the Owner and the Architect.]**

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the Project site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; or (2) a change in the Work materially changes the Contract Sum. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the Project site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven (7)-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

§ 2.5 EXTENT OF OWNER'S RIGHTS

The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (i) granted in the Contract Documents, (ii) at law, or (iii) in equity. In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative. Unless the context otherwise requires, the term "Contractor" shall be synonymous with the term "Construction Manager."

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the Project site, become generally familiar with local conditions under which the Work is to be performed and correlated personal

observations with requirements of the Contract Documents. Prior to execution of the Agreement, the Contractor has evaluated and satisfied themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor and supply costs, (iv) availability and cost of materials, tools, and equipment, and (v) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site. Except as set forth in Section 10.3, the Contractor shall be solely responsible for providing a reasonably safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or the Contract Time in connection with any failure by the Contractor or any Subcontractor to have complied with the requirements of this Section 3.2.1.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the Project site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Contractor shall not be responsible for any loss or damage arising solely from those Owner required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 The Contractor shall employ or use labor in connection with the Work capable of working harmoniously with all trades, crafts, and any other individuals associated with the Project. The Contractor shall also use best efforts to minimize the likelihood of any strike, work stoppage, or other labor disturbance.

§ 3.4.5 The Contractor understands and acknowledges that the Owner is bound by various federal and state laws, rules, regulations, standards, policies, and guidelines governing the safety, security, and protection of the Owner's facilities and facilities under the Owner's control, the continuous operation of such facilities, and information relating thereto. The Contractor shall complete statewide criminal background checks for the last seven (7) years on all personnel assigned to the Project prior to their arrival on the Project site. If the background check of any person reveals any criminal convictions, the Contractor shall not assign that person to the Project without the Owner's prior written consent. The Contractor shall provide a list of all persons assigned to the Project and will not substitute any other persons without the Owner's prior written consent.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements shall be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The Contractor agrees to perform the Work in such a manner so as to preserve any and all manufacturer's warranties unless the Contract Documents direct otherwise. The Contractor agrees to assign to the Owner no later than the time of submitting the final Application for Payment any and all guarantees and warranties from Subcontractors, materials suppliers, manufacturers, or vendors. If necessary as a matter of law, the contractor may retain the right to enforce directly any manufacturer's warranties during the one-year period following the date of Substantial Completion referred to in Section 12.2.2.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect. Costs for these taxes shall be included in the GMP as defined in Article 6 of AIA - A133.

§ 3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the Project site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the Project site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the Project site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the Project site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract or as soon as practical pending designs, plans and specifications released by Owner and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE PROJECT SITE

The Contractor shall maintain at the Project site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional and who shall comply with the reasonable requirements of the Owner regarding qualifications and insurance. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF PROJECT SITE

§ 3.13.1 The Contractor shall confine operations at the Project site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the Project site with materials or equipment.

§ 3.13.2 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that adjacent areas needed for the Owner's continuing operations shall be free from all debris, building materials, and equipment likely to cause hazardous conditions.

§ 3.13.3 Neither the Contractor nor any of its Subcontractors or material suppliers shall erect a sign on the Project site without the prior written consent of the Owner, which consent may be withheld in the sole discretion of the Owner.

§ 3.13.4 The Contractor shall use best efforts to minimize any interference with the occupancy or beneficial use of the portions of the Owner's buildings that are not involved in the Work. Without the prior written approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including, without limitation, any bathrooms, entrances, and parking areas other than those designated by the Owner. The Contractor

shall use best efforts to comply with all rules and regulations promulgated by the Owner in connection with the use of the Project site and shall enforce all such rules and regulations with regard to the Subcontractors. The Contractor shall immediately notify the Owner in writing if during the performance of the Work, the Contractor finds compliance with any rule or regulation to be impracticable, setting forth the problems of such compliance and suggesting alternatives through which the same results intended by the rule or regulation may be achieved. The Owner may, in its sole and absolute discretion, adopt such suggestions, develop new alternatives, or require compliance with the existing rules and regulations.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall defend, indemnify, and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from (i) performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use thereof as and to the extent adjudicated in a court of law; and (ii) a violation of or failure to comply with any law, statute, ordinance, rule regulation, code, or other requirement of a governmental authority having jurisdiction over the Work, the Project, or the Contractor, but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the

indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate For Payment and, with the written authorization of the Owner, during the one-year warranty period for correction of Work. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the Project site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous Project site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the Project site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the Project site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect in connection with administration of the Contract will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the Project site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the Project site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within five (5) business days to the Contractor in writing stating whether the Owner or the Architect has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply within the five (5) business day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors. All subcontracts shall be in writing and shall expressly provide that the Owner is an intended third-party beneficiary of such subcontract.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days after termination of the Contract by the Owner pursuant to Section 14.2 and the Owner accepts assignment of such subcontract, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the Project site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the Project site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.1.5 The Contractor accepts assignment of, and liability for all purchase orders for equipment, materials, furnishings and fixtures and other agreements for the procurement of, materials and equipment that are identified as part of the Contract Documents upon the execution of the GMP. The Contractor shall be responsible for such prepurchased items, if any, as if the Contractor were the original purchaser. The Contract Sum includes, without limitation, all costs and expenses in connection with delivery, storage, insurance, installation, and testing of items covered in any assigned purchase orders or agreements. All warranty and correction of the Work obligations under the Contract Documents shall also apply to any prepurchased items, unless the Contract Documents specifically provide otherwise.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work. Except as permitted in Section 7.3 and Section 9.7.2, a change in the Contract Sum of the Contract Time shall be accomplished only by Change Order.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any,

provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the Project site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire or other peril, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration, then the Contract Time shall be extended by Change Order for such reasonable time as the Owner may determine. If the Work is delayed for causes beyond the control of the Owner and the Contractor, the Owner shall have the right to hire other contractors to perform the Work during the period of the delay.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 Except as specifically set forth in Article 6 of A133 the Contractor's sole remedy for any (i) delay in the commencement, prosecution, or completion of the Work, (ii) hindrance, interference, suspension, or obstruction in the performance of the Work, (iii) loss of productivity, or (iv) other similar claims (items (i) through (iv) being collectively referred to in this Section 8.3.3 as "Delays"), whether or not such Delays are foreseeable, shall be an extension of the time in which to complete the Work if permitted under Section 8.3.1 and, to the extent permitted under this Section 8.3.3, an adjustment in the Contract Sum. In no event shall the Contractor be entitled to any other compensation or recovery of any damages under or pursuant to this Section 8.3.3 in connection with any Delay, including, without limitation, consequential damages, lost opportunity costs, impact damages, or other similar remuneration.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2., for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Each Application for Payment shall be accompanied by the following: all in form and substance satisfactory to the Owner and in compliance with applicable law of the State of New York: (i) a current sworn statement from the Contractor setting forth all Subcontractors and any material suppliers with whom the Contractor has subcontracted, the amount of each subcontract, the amount requested for any Subcontractor or material supplier in the Application for Payment, and the amount to be paid to the Contractor from such progress payment, together with a current, duly executed waiver of mechanics' and material suppliers' liens from the Contractor; and (ii) current, duly executed lien waivers from all Subcontractors, material suppliers, and lower-tier Subcontractors, if any, establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such Subcontractors and material suppliers for the current Application for Payment and any previous Application for Payment; and (iii) all information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner, the Owner's Lender, or the Architect. If required by the Owner's title insurer, the Contractor shall execute a personal gap undertaking in form and substance satisfactory to such title insurer.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the Project site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the Project site at a location agreed upon in writing. Payment for materials and equipment stored on or off the Project site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the Project site for such materials and equipment stored off the Project site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.3.3.1 The Contractor further expressly undertakes to defend the Owner, at the Contractor's sole expense, against any actions, lawsuits, or proceedings brought against the Owner as a result of liens filed against the Work, the site of any of the Work, the Project site, and any improvements thereon, payments due the Contractor, or any portion of the Owner's property (collectively referred to in this Section 9.3.3.1 as "liens"). The Contractor hereby agrees to indemnify and hold the Owner harmless from and against any such liens or claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits, or proceedings, so long as the Owner has paid for the Work in question.

§ 9.3.3.2 The Owner shall release any payments withheld due to a lien or claim of lien if the Contractor obtains security acceptable to the Owner or a lien bond that is (i) issued by a surety acceptable to the Owner and, when required, the Owner's Lender, (ii) in form and substance satisfactory to the Owner and, when required, the Owner's Lender, and (iii) in an amount not less than that set by statute and if no amount is applicable, then, two hundred (200) percent (200%) of such lien claim or such other amount as required by applicable law. By posting a lien bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under this Section 9.3.3, including, without limitation, the duty to defend and indemnify the Owner. The cost of any premiums incurred in connection with such bonds and security shall be the sole responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

§ 9.3.3.3 Notwithstanding the foregoing, the Owner reserves the right to settle any disputed mechanic's or material supplier's lien claim by payments to the lien claimant or by such other means as the Owner, in the Owner's sole and absolute discretion, determines is the most economical or advantageous method of settling the dispute. The Contractor shall promptly reimburse the Owner, upon demand, for any payments so made; so long as Contractor has not already made or caused payment therefor.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven (7) days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment (or equivalent document), with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven (7) days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to

the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

§ 9.7.1 If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven (7) days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven (7) days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven (7) additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.7.2 If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or if the Owner incurs any reasonable costs and expenses to cure any default of the Contractor or to corrective defective Work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole and absolute discretion, either (i) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (ii) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Owner has received from the governmental authorities having jurisdiction thereof all certificates of occupancy and any other permits, approvals, licenses, and other documents necessary for the beneficial occupancy of the Project.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All guarantees and warranties required under or pursuant to the Contract Documents shall be assigned to the Owner as part of the final Application for Payment and the Certificate of Payment shall not be issued by the Architect until all such guarantees and warranties have been received and accepted by the Owner.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract

Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents; or
- **.3** terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the Project site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- **.3** other property at the Project site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the Project site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or Project site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the Project site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

(Paragraph deleted)

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the Project site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the Project site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

(Paragraph deleted)

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by personal injury liability coverage;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations, which coverage, upon request by Owner, shall be maintained for no less than five (5) years following final payment; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims made under the Contractor's completed operations coverage.

§ 11.2 OWNER'S LIABILITY INSURANCE
The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE
§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then obtain insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the Project site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE
The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE
The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the Project site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a binder of insurance evidencing such insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

If permitted by the Owner's and the Contractor's insurance companies, without penalties, the Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent of actual recovery of any insurance proceeds under any property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 Upon request by Owner, the Contractor shall furnish a Performance Bond and Labor and Material Payment Bond meeting all statutory requirements of the State of New York, in form and substance satisfactory to the Owner and the Owner's Lender, and, unless indicated otherwise by the Owner, complying with the following specific requirements:

.1 Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner and the Owner's Lender, in their sole judgment.

.2 Bonds shall be executed by a responsible surety licensed in the State of New York acceptable to the Owner and the Owner's Lender.

.3 The Performance Bond and the Labor and Material Payment Bond shall each be in an amount acceptable to the Owner and the Owner's Lender.

.4 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the relevant power of attorney indicating the monetary limit of such power.

.5 Every bond required by this Section 11.4.1 must display the surety's bond number.

.6 A rider including the following provisions shall be attached to each bond:

1. The surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change, or other modification of the Contract Documents. Any addition, alteration, change, extension of time, or other modification of the Contract Documents, or a forbearance on the part of either the Owner or the Contractor to the other shall not release the surety of its obligations hereunder, and notice to the surety of such matters is hereby waived.
2. The surety agrees that it is obligated under the bonds to any successor, grantee, or assignee of the Owner.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the right to make a claim for breach of warranty, but not the right to require correction by the Contractor. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 Upon completion of any Work under or pursuant to this Section 12.2, the one (1)-year correction period in connection with the Work requiring correction shall be renewed and recommence solely with respect to any repairs and replacement to any part of the Work or other property that is damaged by the defective Work.
§ 12.2.3 The Contractor shall remove from the Project site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract Documents shall be governed by, and construed and enforced in accordance with, the laws of the State of New York without giving effect to the principles of conflicts of law thereof. Jurisdiction shall be in Rensselaer County, New York.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals required by building codes or applicable laws or regulations or required by Owner or its Lender.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense. the cost of testing services related to remedial operations performed to correct deficiencies in the Work, shall be borne by the Contractor.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

§ 13.8 GENERAL PROVISIONS

§ 13.8.1 Wherever possible, each provision of this Agreement shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of this Agreement, or portion thereof, is prohibited by law or found invalid under any law, only such provision or portion thereof shall be ineffective, without in any manner invalidating or affecting the remaining provisions of this Agreement or valid portions of such provision, which are hereby deemed severable.

§ 13.8.2 Any specific requirement in the Contract Documents that imposes the responsibilities or obligations of the Contractor onto a Subcontractor is added for emphasis and is also hereby deemed to include a Subcontractor of any

tier. The omission of a reference to a Subcontractor in connection with any of the Contractor's responsibilities or obligations shall not be construed to diminish, abrogate, or limit any responsibilities or obligations of a Subcontractor of any tier under the Contract Documents or the applicable subcontract.

§ 13.8.3 The provisions of the Contract Documents shall not be changed, amended, waived, or otherwise modified without the Owner's approval. No person is authorized on behalf of the Owner to orally change, amend, waive, or otherwise modify the terms of the Contract Documents. Any change, waiver, approval, or consent granted to the Contractor shall be limited to the specific matters approved by the Owner, and shall not relieve the Contractor of any other duties and obligations under the Contract Documents.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped.

.3 Because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven (7) days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven (7) additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the Project site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

(Paragraphs deleted)

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 Upon such termination, the Contractor shall recover as its sole remedy payment for Work (including the corresponding percentage of Contractor's fee earned) properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Owner's instructions. The Contractor hereby waives and forfeits all other claims for payment and damages, including, without limitation, anticipated profits. The Owner shall be credited for (i) payments previously made to the Contractor for the terminated portion of the Work, (ii) amounts owed to the Owner by the Contractor, and (iii) the value of the materials, supplies, equipment, or other items paid for by Owner and retained by Contractor at Contractor's election after first offering same to Owner.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Notwithstanding the foregoing, the claimant shall use its best efforts to furnish any notice of a Claim as expeditiously as possible and shall cooperate with the Architect and the party against whom the Claim is made in an effort to mitigate the alleged or potential damages, delay, or other adverse consequences arising out of the condition that is the cause of such Claim.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for decision. The Initial Decision Maker shall be selected by the Owner and Contractor as needed and as may change from time-to-time. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data

will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

ARTICLE 16 CONFIDENTIAL INFORMATION

§ 16.1 Certain information exchanged by the Owner and the Contractor in the course of the performance of the Contractor's services for the Project pursuant to the Contract Documents shall constitute confidential information ("Confidential Information") and shall be subject to the provisions of this Article 16.

§ 16.2 The following shall constitute Confidential Information: (i) any tangible non-public information that is treated as confidential by the providing party and which the providing party identifies as Confidential Information either in the Contract Documents or orally or in writing at the time the information is provided and (ii) information that, by its nature, is generally understood to be confidential information by both parties. All information, documents, or materials located at or around the Project site not specifically given to the Contractor shall be automatically deemed to be Confidential Information. It is understood that the Owner will be designating the following as Confidential Information: (a) information that constitutes Confidential Information in the NYISO Open Access Transmission Tariff, including the NYISO Code of Conduct that is attachment F to the NYISO Open Access Transmission Tariff as

may be revised from time to time; (b) information that constitutes Confidential Information in the NYISO's Market Administration and Control Area Services Tariff, or Confidential Information or Protected Information by the NYISO Market Monitoring Plan, contained in the NYISO's Market Administration and Control Area Services Tariff all as may be revised from time to time; and (c) any information that is Critical Energy Infrastructure Information ("CEII") as defined in federal regulations and in orders of the Federal Energy Regulatory Commission, and including notes, analysis, or documentation (in any form or medium) that incorporates CEII and documents, all of which shall constitute Confidential Information of the NYISO to the extent they explicitly contain CEII, or from which CEII can again be derived.

§ 16.3 Notwithstanding the provisions of Section 16.2 hereof, the following shall not constitute Confidential Information: (i) information that at the time it is provided by the providing party is already known by the receiving party through no wrongful act of the receiving party or through no wrongful act of the person that provided it to the receiving party to the knowledge of the receiving party; (ii) information that has become generally known to the public through no wrongful act of the receiving party; (iii) information that has been approved for public release by written authorization of the providing party; or (iv) information that has been independently developed by the receiving party without the use, directly or indirectly, of any Confidential Information received from the providing party; or (v) information acquired by the receiving party from a third party which is not, to the receiving party's knowledge, under an obligation of confidence with respect to such information; or (vi) information that is or becomes publicly available through no breach of the provisions of this Article 16.

§ 16.4 The Owner and the Contractor shall take reasonable measures to protect Confidential Information of the providing party from disclosure and shall not disclose Confidential Information of the providing party to an entity or person that is not a party to thContract Documents except (i) as otherwise may be explicitly provided in the Contract Documents, (ii) as authorized in writing by the providing party, or (iii) as required by a governmental entity with jurisdictional authority, provided that the obligations hereunder are satisfied. Such measures shall include, but shall not be limited to: (a) taking at least the same precautions as the Owner or the Contractor would take to protect its own Confidential Information and (b) using, reproducing, and distributing Confidential Information only insofar as is necessary to the performance the Contract Documents and/or for the Owner's use of the Instruments of Service delivered pursuant to the Contract Documents.

§ 16.5 The parties may disclose Confidential Information of the providing party to those employees and subcontractors of the receiving party who need it in connection with the party's performance of its respective obligations under the Contract Documents. In addition, disclosure by the Contractor at Owner's direction or by the Owner for the performance of other services for Owner is permitted. All employees, independent contractors, and agents of the Owner or the Contractor receiving Confidential Information of the other party must agree in writing to be bound by the provisions of this Article 16.

§ 16.6 Notwithstanding the provisions of Section 16.4 hereof, the Owner and the Contractor may disclose Confidential Information in compliance with an order or subpoena of a court or governmental entity with jurisdictional authority after, unless otherwise prohibited by law, promptly giving written notice of such order, subpoena, or legal requirement to the providing party. In the event that receiving party is required to disclose Confidential Information in compliance with an order, subpoena, or legal requirement, it shall disclose only such Confidential Information as, in the written advice of its legal counsel, it is required to disclose. Neither the Owner nor the Contractor shall be held liable for any damages resulting from its disclosure of Confidential Information pursuant to this Section 16.6.

§ 16.7 The Owner and the Contractor shall each notify the providing party immediately upon the discovery of any use or disclosure of Confidential Information that is not in conformance with the provisions of this Article 16 and, in such event, shall each cooperate to prevent further use or disclosure not in conformance with the provisions of this Article 16.

§ 16.8 The obligations set forth in this Article 16 shall survive the expiration or earlier termination or cancellation of the Contract Documents.

(Paragraphs deleted)

Attachment XVI.

Table of Costs to Ratepayers

NYISO
DEBT SERVICE COSTS FOR PROPOSED CONSTRUCTION FACILITY
ESTIMATED COST IMPACTS TO PARTICIPANTS AND CONSUMERS

ESTIMATED IMPACT ON NYISO MARKET PARTICIPANTS	2011	2012	2013	2014	2015	Over Loan Life	
Estimated Annual Debt Service Cost (principal & interest), in $ millions	$ 0.1	$ 1.0	$ 2.3	$ 4.0	$ 4.1		
Estimated Rate Schedule 1 MWh Throughput, in millions of MWh *	167.7	169.9	172.3	173.2	174.2		
Equals: Annual Rate Schedule 1 Impact in $/MWh	$ 0.00	$ 0.01	$ 0.01	$ 0.02	$ 0.02		
Times: Estimated Rate Schedule 1 allocation for net purchasers	75%	75%	75%	75%	75%		
Equals: Estimated Annual Rate Schedule 1 Impact in $/MWh for net purchasers	**$ 0.00**	**$ 0.00**	**$ 0.01**	**$ 0.02**	**$ 0.02**		*Measured in $/MWh*

** Estimated Rate Schedule 1 MWh Throughput for 2011 - 2013 is based on projections updated by NYISO during August 2010. 2014 - 2015 estimated Rate Schedule 1 Throughput was calculated using escalation factors from the 2010 NYISO Gold Book.*

ESTIMATED IMPACT ON NY RESIDENTIAL CONSUMERS **	2011	2012	2013	2014	2015	Over Loan Life	
Average Residential Annual Consumption (wholesale kWh)	7,480	7,480	7,480	7,480	7,480		
Annual Rate Schedule 1 Impact in $/MWh for net purchasers (~75% allocation)	$ 0.00	$ 0.00	$ 0.01	$ 0.02	$ 0.02		
Equals: Estimated Annual Impact on NY Residential Consumers	**$ 0.00**	**$ 0.03**	**$ 0.07**	**$ 0.13**	**$ 0.13**	**$ 2.42**	*Measured in $*

*** Consumption estimates based on 2009 retail sales figures from the EIA plus estimated distribution losses*

ESTIMATED IMPACT ON NY COMMERCIAL & INDUSTRIAL CONSUMERS **	2011	2012	2013	2014	2015	Over Loan Life	
Average C&I Annual Consumption (wholesale kWh)	90,819	90,819	90,819	90,819	90,819		
Annual Rate Schedule 1 Impact in $/MWh for net purchasers (~75% allocation)	$ 0.00	$ 0.00	$ 0.01	$ 0.02	$ 0.02		
Equals: Estimated Annual Impact on NY Commercial & Industrial Consumers	**$ 0.04**	**$ 0.40**	**$ 0.91**	**$ 1.57**	**$ 1.60**	**$ 29.38**	*Measured in $*

*** Consumption estimates based on 2009 retail sales figures from the EIA plus estimated distribution losses*