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TO: NYPA BOARD OF TRUSTEES
FROM: EDWARD WELZ, ACTING CHIEF OPERATING OFFICER
DATE: MARCH 15, 2011
SUBJECT: MONTHLY REPORT FOR THE BOARD OF TRUSTEES

This report covers performance of the Operations group in February 2012.

Power Supply

Plant Performance

Systemwide net generation¹ was 2,409,841 megawatt-hours² (MWh) in February 2012, compared to projected net generation of 2,196,030 MWh. Year-to-date net generation is 4,899,533 MWh, compared to the target of 4,607,177 MWh.

The fleet availability factor³ was 96.2 percent in February 2012, and 96.1 percent for the year. Generation market readiness factor⁴ was 99.8 percent in February, compared with the monthly target of 99.4 percent. Year-to-date generation market readiness factor was at 99.9 percent.

There were no significant unplanned generation events⁵ in February.

Generation net revenue in February was \$13.8 million with no loss of revenue for the month. Year-to-date Generation net revenue was \$32.8 million and lost opportunity cost was \$0.25 million.

Niagara River flows in February 2012 were well above the historical average. They are expected to be above average for the first part of the year, then fall below average into 2013. St. Lawrence River flows during February 2012 were slightly above forecast. River flows are expected to be above the average historical level for most of 2012.

Transmission Performance

Transmission reliability^[i] in February was 98.77 percent, which was above the target of 97.89 percent. Year-to-date transmission reliability is 98.85 percent, above the target of 97.93 percent.

There were no significant unplanned transmission events in February that affected the transmission reliability measure.

Environmental

There was one reportable event for February 2012. For the year, there have been 3 reportable incidents. The annual target for 2012 is 29.

Relicensing – Niagara Power Project

Construction activities have started on the Motor Island Habitat Improvement Project.

Construction is continuing on the Reservoir State Park recreation improvements including the Winter Pavilion.

Prepared consultation package for the Niagara Working Group of the Niagara Board of Control describing the upcoming Frog Island Habitat Improvement Project demonstrating limited effects of the project on water levels and ice conditions. This is being done prior to submitting a permit application package with the Corps of Engineers.

Relicensing – St. Lawrence-FDR Power Project

Conducted an informational briefing on the results of a siting study and concept plan for the proposed replacement of St. Lawrence Nature Center to the Friends of the Nature Center who operate the facility on behalf of NYPA.

The 2011-2012 shoreline erosion stabilization program is continuing even though mild weather is hampering the progress.

Relicensing – Blenheim-Gilboa Project

Conducted informational briefings on the BG relicensing process and schedule for the US Fish and Wildlife Service and the NYS Dept. of Environmental Conservation in order to obtain resource information for the Pre-Application Document being prepared by NYPA.

Transmission Initiative

With the decision to move ahead with the HTP project, the economic benefits of the Transmission Initiative (“TI”) were substantially reduced and a decision was made to suspend work on the TI into NYC. Studies with National Grid on an HVDC line to a point north of NYC, using PA Consulting and EIG Consulting were completed. Began

work with NYPA System Planners on developing and evaluating reinforcements for the NYS transmission system to address reliability and economic needs, including the importation of additional Canadian hydropower, facilitation and development of renewable energy sources within NYS and replacement of aging transmission infrastructure.

Life Extension and Modernization Programs

St. Lawrence LEM Upgrade

Work on Unit 19 at the St. Lawrence-FDR Power Project, the 15th of the 16 units, began on July 25, 2011, as part of the Project's Life Extension and Modernization^[i] (LEM) program. The unit is expected to return to service on April 18, 2012. The outage for the last unit (Unit 20) is scheduled to begin on April 19, 2012 with an expected return to service on January 11, 2013. The 2013 scheduled completion date for the LEM project remains unchanged.

LPGP LEM

The first feeder outage, pothead replacement and first new GSU transformer (GSU #2) installation was completed on December 2, 2011 (3 units per GSU). The second Feeder 3 outage began March 5, 2012 and will extend until April 27, 2012. Contractor has mobilized at the LPGP site and is prepping the GSU for installation in Feeder #3. Welsbach Electric will be mobilizing at Niagara on or around March 12, 2012 to begin replacement of the Feeder 3 potheads at the Switchyard and at LPGP. Unit Performance Testing contract scheduled to begin in April 2012. The first pump/turbine unit outage is scheduled to begin December 2012 with the program completion scheduled for 2020.

Technical Compliance – NERC Reliability Standards

In February, NYPA staff continued to manage compliance enforcement actions related to several of the NERC Reliability Standards that are applicable to NYPA's NERC registrations. The actions and statuses are briefly stated below:

- a. **PRC-005-1 R2 - Transmission and Generation Protection System Maintenance and Testing:** (NERC Violation ID: NPCC201100236) NYPA self-reported to NPCC a potential violation of the requirement R2 of PRC-005-1 on February 11, 2011. The associated mitigation plan was successfully completed by December 15, 2011 and is currently being reviewed by NPCC. NYPA will soon enter into settlement discussions with NPCC and a penalty is expected.
- b. **PRC-018-1 R6 - Disturbance Monitoring Equipment Installation and Data Reporting:** (NERC Violation ID: NPCC201100237) NYPA self-reported to NPCC a potential violation of requirement R2.1 and R2.2 of PRC-0018-1 on February 11, 2011. The associated mitigation

plan was successfully completed by December 15, 2011. The violation was processed via NERC's Find, Fix, and Track process and filed with FERC on February 29, 2012. There was no penalty assessed.

- c. **CIP-004-3 R2 - Cyber Security - Personnel and Training:** (NERC Violation ID: NPCC2012200446) NYPA self-reported to NPCC a potential violation of requirement R2 of CIP-004-3 on [February 16, 2012](#). NYPA staff is currently preparing the mitigation plan and expects to submit it to NPCC in early March 2012.

The NERC Board of Trustees approved a new Bulk Electric System (BES) definition and a related exception process in January 2012 and then filed them with FERC on January 25, 2012. FERC is expected to adopt the new definition and exception process in late 2012. Subsequently, there will be an 18- to 24-month implementation period at the end of which all NERC registered entities will be expected to demonstrate compliance for the additional generation and transmission assets captured under the new definition. The new definition will have substantive impacts on New York State's electric utilities, including NYPA, because it will require the application of the NERC Reliability Standards to a larger population of generation and transmission assets. In this regard, the Northeast Power Coordinating Council (NPCC) has established a BES Transition Plan that contains actions for assessing the impact of the new BES Definition. The first action is for NERC-registered and non-registered entities that own assets in the NPCC region to prepare a list of newly identified BES assets by March 26, 2012. NYPA has identified 25 additional assets that will be subject to NERC Reliability Standards and will be submitting this information to NPCC before the deadline.

More importantly for NYPA, the adoption of the new BES definition may require NYPA to register as a Transmission Operator (TOP) and/or a Transmission Planner (TP), which will lead to additional compliance responsibilities and accountabilities. Currently, the New York Independent System Operator (NYISO) is the TOP and TP for NYPA's bulk power system elements. Under the new definition, the NYISO is not expected to take these responsibilities for any of the newly identified transmission elements in New York State. The responsibilities are expected to be distributed among the NY Transmission Owners (NYTOs). In response to these projected impacts, the NYISO and the NYTOs established a team in February 2011 to discuss and develop an action plan to address the state-wide impacts of the implementation of the new BES definition. This group has been meeting regularly to clarify the impacts with respect to functional responsibility and compliance accountability for the TOP and TP Standards. The objective is to reach agreement on a registration model that will work for New York State and meet the requirements of NPCC and NERC. The team expects to accomplish its objective before the end of 2012.

In February, NYPA continued to implement its work plan for responding to a 2010 NERC Alert Recommendation that requires NYPA to review its current facility ratings methodology for their solely and jointly owned transmission lines to verify that the methodology used to determine facility ratings is based on actual field conditions (in particular line ground clearances). A status update was provided to NERC via NPCC in

January 2012. The update contained a list of NYPA's transmission lines and the preliminary findings of possible line clearance concerns. As required by NERC, NYPA met with the NYISO on February 7, 2012 to discuss progress and the preliminary findings NYPA had submitted to NPCC. NYPA staff stressed that number of clearance concerns is expected to decrease upon completion of the analysis of the remote sensing data and physical field verifications. The NYISO described the process that they are using with other New York Transmission Owners in mitigating line clearance discrepancies. NYPA will use a similar process to mitigate any line clearance discrepancies for its transmission lines. The NYISO agreed to review the priorities NYPA assigned to its transmission lines (based on NERC's criteria) and provide NYPA with recommended adjustments in the priorities. Results of the NYISO review identified that some lines NYPA rated as High priority could be moved to Medium priority which provides NYPA additional time to resolve any discrepancies for those lines. NYPA agreed to prepare a field verification schedule and review it with the NYISO. The field verification work is needed to confirm the results from the analysis of the remote sensing data before undertaking any required mitigation work. NYPA staff expects to meet again in May 2012 with the NYISO to review the field verification schedule. NYPA included funds in its 2012 budget to mitigate line clearance concerns for its High priority lines, if such actions are necessary. The next status update must be submitted to NERC via NPCC in July 2012.

NYPA staff continues to have discussion with NPCC regarding its request to de-register as a Load Serving Entity (LSE) for the ALCOA load in the Northern Region. As a result of recent discussions, NPCC agreed that resolution of NYPA's request should be postponed until the new BES definition is adopted by FERC; sometime in late 2012 or early 2013. Based on the new BES Definition, the 115kv lines providing service to ALCOA may not be considered BES assets, either as a definition exclusion or based on an exception request. If these 115kv lines are determined not to be BES assets, then NPCC does not believe that the ALCOA load requires the designation of an LSE entity and will deregister NYPA as an LSE. Given this position, NPCC stated that it will defer all LSE Audits or Spot Checks of NYPA for its LSE function until such time that this issue is resolved. In addition, NPCC agreed that it would suspend NYPA's requirement to self-certify compliance to the applicable LSE standards under NPCC's 2011-2012 Reporting Schedule.

Research & Technology Development (R&TD)

The Research to Apply Common Information Model for Transmission Planning, Phase 2 project was completed. This project addressed the issue of developing a framework for analyzing the quality of Common Information Model (CIM) Extensible Markup Language (XML) file. The Operations Planning group extensively uses Physical Operational Margin (POM) software. This work has been incorporated into POM and is available for use. This capability could significantly facilitate an easy translation of real-time system models, used by the NYPA Energy Management System, to planning simulation models used by Transmission and Operations Planning.

The Recommissioning and Testing of the Transient Network Analyzer (TNA) System for the Convertible Static Compensator (CSC) project was completed. The original TNA that was used to model and simulate in real-time the CSC during its design, development, construction, and testing was revived and set up at the North Carolina State University campus. The device is operable and can be used for benchmarking purposes to develop a digital, real-time digital simulator (RTDS) model of the CSC. In addition, a digital model of the CSC was developed and tested. Such a model can be used for further upgrades or modifications of the device. This work will allow NYPA to be able to use the TNA and the newly developed digital model for future work and benchmarking related to the CSC.

Staff worked with E-max, vendor for Sequence of Event Recorders (SER) at NYPA, to develop a new add-on for IEEE C37.118 communication software on existing SERs for transmitting breaker status signals. Implementation of this software will avoid expensive work in design, engineering, and labor for connecting all breaker status signals to Digital Fault Recorders (DFR) and Phasor Measurement Units at all NYPA substations.

Staff worked with Asset Management to correct a couple of minor problems on the Y49 cathodic protection system. R&TD intends to monitor the changes and discuss further actions with Asset Management. In addition, discussions were held regarding transfer of the maintenance of this system to Asset Management staff.

Working with EPRI and a group of New York State utilities, R&TD is conducting studies related to the impact of geomagnetically induced currents on New York State grid power equipment.

A presentation entitled “Geo-magnetic disturbances (GMD) and their Effects on the Electric Power Grid” was made at the meeting of the Erie-Niagara chapter of New York State Society of Professional Engineers. The presentation elaborated on GMD phenomena, analyzed potential problems that can occur due to geomagnetically induced currents (GIC), present available monitoring techniques, and prevention and mitigation measures. GMDs are caused by the interaction of solar winds with the earth's magnetic field and can potentially disrupt the operation of electric power systems by injecting GIC into the power grid.

Energy Resource Management

NYISO Markets

In February, Energy Resource Management (ERM) bid more than 2.5 million MWh of NYPA generation into the NYISO markets, netting \$39.8 million in power supplier payments to the Authority. Year-to-date net power supplier payments are \$96.2 million.

Fuel Planning & Operations

In February, NYPA's Fuels Group transacted \$18.9 million in natural gas and oil purchases, compared with \$20.8 million in February 2011. Year-to-date natural gas and

oil purchases are \$46.0 million, compared with \$52.0 million at this point in 2011. The total \$6.0 million decrease is mainly due to the cost of fuel at the 500-MW Combined Cycle Plant (-\$12.6 million), Small Clean Power Plants (-\$3.2 million) and the Richard M. Flynn Power Plant (-\$6.1 million), which was offset by the start up of the Astoria Energy II Plant (+\$15.9 million) in July of 2011.

GLOSSARY

¹ **Net Generation** – The energy generated in a given time period by a power plant or group of plants, less the amount used at the plants themselves (station service) or for pumping in a pumped storage facility. Preliminary data in the COO report is provided by Accounting and subject to revision.

² **Megawatt-hour (MWh)** – The amount of electricity needed to light ten thousand 100-watt light bulbs for one hour. A megawatt is equal to 1,000 kilowatts and can power about 800 homes, based on national averages.

³ **Availability Factor** – The Available Hours of a generating unit over the Period Hours (hours in a reporting period when the unit was in an active state). Available Hours are the sum of Service Hours (hours of generation), Reserve Shutdown Hours (hours a unit was not running but was available) and Pump Hours (hours a pumped storage unit was pumping water instead of generating power).

⁴ **Generation Market Readiness Factor** – The availability of generating facilities for bidding into the New York Independent System Operator (NYISO) market. It factors in available hours and forced outage hours that drive the results.

⁵ **Significant Unplanned Generation Events** – Forced or emergency outages of individual generator units of duration greater than 72 hours, or with a total repair cost of greater than \$75,000, or resulting in greater than \$50,000 of lost revenues.

[i] **Transmission Reliability** – A measurement of the impact of forced and scheduled outages on the statewide system's ability to transmit power.

[ii] **Life Extension and Modernization Program** — A major undertaking in which all the turbines at the St. Lawrence-Franklin D. Roosevelt project are being replaced and the generators and other components significantly refurbished. The program is intended to ensure that the project operates at maximum efficiency far into the future.