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TO: NYPA BOARD OF TRUSTEES
FROM: EDWARD WELZ, CHIEF OPERATING OFFICER
DATE: APRIL 12, 2012
SUBJECT: MONTHLY REPORT FOR THE BOARD OF TRUSTEES

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

Power Supply

Plant Performance

Systemwide net generation¹ was 2,275,470 megawatt-hours² (MWh) in March 2012, compared to projected net generation of 2,317,025 MWh. Year-to-date net generation is 7,176,023 MWh, compared to the target of 6,924,202 MWh.

The fleet availability factor³ was 96.2 percent in March 2012, and 96.7 percent for the year. Generation market readiness factor⁴ was 99.8 percent in March, compared with the monthly target of 99.4 percent. Year-to-date generation market readiness factor was also at 99.8 percent.

In March, there was one significant unplanned generation event⁵. A fire occurred at Hellgate GT Unit 1 on March 7. Repairs are currently underway and the unit is expected to return to service on April 14.

Generation net revenue in March was \$8.3 million with a loss of revenue of \$0.01 million for the month. Year-to-date Generation net revenue was \$41.1 million and lost opportunity cost was \$0.03 million.

Niagara River flows in March 2012 were 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 March 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 March was 98.26 percent, which was above the target of 95.55 percent. Year-to-date transmission reliability is 98.65 percent, above the target of 97.12 percent. The cancelation of a long term outage of the L33P Line had a significant positive impact on performance for this month. The original outage had been scheduled through May so the positive trend is likely to continue into the coming months.

There was one significant unplanned transmission event in March that was initiated by the catastrophic failure of a Moses breaker. Three lines were tripped during the event but only the outage of the MA-1 line counted against the Reliability metric. A total of 353 hours had already been scheduled for the MA-1 Line so the effect of 200 forced hours on performance was minimal.

Environmental

There were five reportable event for March 2012. For the year, there have been 8 reportable incidents. The annual target for 2012 is 29.

Transmission Initiative

No change.

Relicensing – Niagara Power Project

Construction activities continued on the Motor Island Habitat Improvement Project, a related contract was issued for plant cultivation and installation after excavation is completed.

Outdoor construction resumed at Reservoir State Park recreation improvement project with the erection and functional testing of light poles for softball diamond no. 1. Indoor construction is complete except for minor punch list items.

Construction resumed at the Whirlpool and Schoellkopf Overlooks recreation improvement projects with paving material deliveries and installation of stone sub-base.

Construction resumed at the Upper Niagara Intakes Observation Area recreation improvement site with the installation of steel framing at three fisherman's shelters and for an information kiosk.

Relicensing – St. Lawrence-FDR Power Project

US Army Corps of Engineers permit for the construction of the Nichols Island Habitat Improvement Project has been received. Procurement process has begun for this project which will commence in the Fall of 2012.

Construction has begun on the Little Sucker Brook Habitat Improvement Project which will begin in the Spring of 2012.

Habitat Improvement Project monitoring activities have started at various locations due to the unusual early spring weather – some spawning activities are at least 3 weeks earlier than our past experience

The 2011-2012 shoreline erosion stabilization program is nearly complete with only site restoration activities remaining.

Relicensing – Blenheim-Gilboa Project

Existing project information data collection efforts are continuing through the systematic search of hardcopy records located at various archives at the BG project. The information is being reviewed and sorted for relevancy. The results will be used in the preparation of the Preliminary Application Document (PAD) which will be filed with FERC to begin the formal relicensing process.

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^[1] (LEM) program. The unit returned to service on April 2, 2012 ahead of the projected return to service of April 18, 2012. The outage for the last unit (Unit 20) is scheduled to begin on April 9, 2012 with an expected return to service on December 21, 2012. 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 be completed by April 27, 2012. Contractors have mobilized to the site and the GSU installation is underway. Welsbach Electric completed the replacement of the Feeder 3 potheads at the Switchyard and at LPGP. The Unit 11 Performance Testing is scheduled to begin on May 1, 2012 as planned. 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 March, 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 closure documents are being reviewed by the Northeast Power Coordinating Council (NPCC). NYPA will soon enter into settlement discussions with NPCC and a penalty is expected.
- b. **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 has prepared the mitigation plan and will submit it to NPCC in early April 2012.
- c. **CIP-004-3 R4 - Cyber Security - Personnel and Training:** (NERC Violation ID: NPCC2012-200459) NYPA self-reported to NPCC a potential violation of requirement R4 of CIP-004-3 on March 12, 2012. NYPA staff has prepared the mitigation plan and will submit it to NPCC in early April 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. In March NYPA completed the first step in the NPCC BES Transition Plan, which was to prepare a list of newly identified BES assets. NYPA's lists for both generation and transmission assets was submitted on March 28, 2012. NYPA identified 35 additional transmission assets that will be subject to NERC Reliability Standards, approximately a 25% increase in the total number of BES assets.

The team established by the New York Independent System Operator (NYISO) and the New York Transmission Owners (NYTOs) met twice in March to continue its work to 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 Transmission Operator (TOP) and/or a Transmission Planner (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 March, 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). The next status update must be submitted to NERC via NPCC in July 2012. The assessment has revealed that there are about 200 line clearance discrepancies in NYPA's 1,400 miles of transmission lines; about 60 of which are on lines rated as high priority. Staff is in the process of field verifying the remote sensing findings and is developing a mitigation plan to eliminate the discrepancies on the high priority lines by the end of 2012. The field verification work may confirm that there are fewer discrepancies requiring mitigation. NYPA plans to meet with the NYISO in May to confirm the mitigation plans for the high priority lines.

NYPA's request of NPCC to de-register as a Load Serving Entity (LSE) for the ALCOA load in the Northern Region is still open. In March, NYPA received a letter from NPCC confirming an agreement that resolution of NYPA's request will be postponed until the new BES definition is adopted by FERC; sometime in late 2012 or early 2013. The letter states that NPCC will defer all LSE Audits or Spot Checks of NYPA for its LSE function and that it will suspend NYPA's requirement to self-certify compliance to the applicable LSE standards under NPCC's 2011-2012 Reporting Schedule until the BES definition is adopted and implemented.

In March, NYPA initiated an independent assessment to determine whether the organization is adequately staffed for managing reliability standards compliance going forward. In March, over 50 interviews of executives and staff were conducted. The assessment is expected to be completed in May and the results will be integrated with a larger organizational review of the Operations Business Unit.

In March, NYPA continued an independent assessment of Critical Cyber Asset user access rights management pursuant to the Critical Infrastructure Protection (CIP) Standard CIP-004-3 – Cyber Security – Personnel and Training. This assessment was initiated in response to several self-reported violations of this standard. The assessment is expected to produce recommendations for some changes in organizational structure, processes, and tools that will reduce the potential for future violations of this standard. The assessment is expected to be concluded in May.

Research & Technology Development (R&TD)

The Generator Testing and Modeling project was completed. The objective of this project was to create generator models which are used to comply with NERC / NPCC / NYISO standards. These standards require generator operators to submit models that accurately represent their generation system and settings. Tests were conducted on the St. Lawrence, Niagara, Astoria 500-MW and In-City generators to study the dynamic performance and derive models. System Planning performed contingency studies and reviewed the models for accuracy. These models were then submitted to NYISO for inclusion in Northeast Power Coordinating Council's (NPCC) power system database.

In response to a request from Transmission, R&TD is initiating a three year transmission line wind-induced vibration evaluation project, which will install two transmission line vibration recorders on the NR2 (Niagara-Rochester) line. This project will evaluate the impact of wind-induced vibration fatigue on the transmission line.

Staff met with USi and EPRI to discuss the status of the Y49 cable failure analysis. USi informed NYPA that some tests were performed but all test results were preliminary at this time. Pending completion of the preliminary work, an actual dissection of the failed cable is planned. NYPA intends to provide additional cable samples from a spare reel so that USi can test for any manufacturing defects.

Discussions were conducted with St. Lawrence site staff and Computer Applications group regarding the installation of a wireless communication system at Massena substation for six on-line Kelman Gas Analyzers on autobanks. This wireless communication system is being installed since there is no fiber / copper communication available near the autobanks and the cost of installing new fiber is much higher due to trench work and road crossing/cutting.

Staff worked with Niagara personnel and a GE Bently representative to visually inspect and perform an inventory of sensors that were received from GE Bently for the condition monitoring system that will be installed as part of the LPGP LEM project. These sensors will be installed at each of the twelve hydro generators at LPGP and include air gap sensors (to provide distance information between the rotor and stator) and proximator sensors (to provide vibration and rotational speed information of the shaft).

Tests of the Convertible Static Compensator took place. These tests consisted of exercising all the different modes of operation of the device to make sure it operates adequately under every mode.

R&TD is working with In-City plant staff to remove and ship additional Trench bushings to EPRI's Lenox lab for testing. The first test was completed in October 2011 and the results are under investigation.

The Niagara ADCP flow measurement platform's final inspection certificate was received and forwarded to Code Compliance.

Staff visited the Harlem River Substation along with an EPRI representative to scope out possible locations for installing infrared cameras to monitor Authority assets on line for out of the ordinary thermal activities.

R&TD staff hosted the final project meeting for the CEATI project entitled "New York State Power Grid Geomagnetic Storm and E3-HEMP Threat - Vulnerability Assessments." The meeting attended by representatives from NYPA, Con Edison, Central Hudson, and National Grid, as well as the contractor, John Kappenman. CEATI representatives participated via teleconferencing. A presentation of the results and the

simulation data was made. Results of this project will help to determine the vulnerability of NYPA's transmission system to geomagnetic storms.

Staff attended the North American Synchronphasor Initiative (NASPI) meeting, which focused on synchronphasor research. Researchers mainly from universities and research organizations, as well as utilities and vendors made presentations about current research projects they are performing in this area. The topics ranged from applications of existing technologies to the development of new techniques and algorithms. R&TD actively participated in three presentations in cooperation with Rensselaer Polytechnic Institute and Georgia Tech: two were related to the NYSERDA Synchronphasor project and one related to the Georgia Tech DoE funded project on Dynamic State Estimation and Generator Parameter Identification.

Energy Resource Management

NYISO Markets

In March, Energy Resource Management (ERM) bid more than 2.3 million MWh of NYPA generation into the NYISO markets, netting \$31 million in power supplier payments to the Authority. Year-to-date net power supplier payments are \$127.3 million.

Fuel Planning & Operations

In March, NYPA's Fuels Group transacted \$8.2 million in natural gas and oil purchases, compared with \$18.8 million in March 2011. Year-to-date natural gas and oil purchases are \$54.1 million, compared with \$70.7 million at this point in 2011. The total \$16.6 million decrease is mainly due to the cost of fuel at the 500-MW Combined Cycle Plant (-\$12.6 million for fuel cost and -\$10.3 for March outage), Small Clean Power Plants (-\$5.6million) and the Richard M. Flynn Power Plant (-\$7.7 million), which was offset by the start up of the Astoria Energy II Plant (+\$19.6 million) in July of 2011.

Regional Greenhouse Gas Initiative

On March 14th, Auction 15 of the Regional Greenhouse Gas Initiative⁶ was held. During the auction, RGGI allowances cleared at the recently CPI-adjusted auction price floor of \$1.93/ton for Vintage 2012. NYPA bid on and was awarded 2,510,000 tons allowances during this first quarter auction of 2012. Due to a high expectation for this auction to clear at the price floor, NYPA bid on a conservative estimate of the required allowances needed to meet NYPA's allowance requirement for all plants in 2012, with intentions to not over purchase. Since the inception of this program, NYPA has spent \$25 million on 11million RGGI allowances, or \$2.28/ton on average. Since it is only the first auction in 2012, NYPA has spent \$1.93/ton on average for Vintage 2012 allowances.

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.

⁶ **Regional Greenhouse Gas Initiative (RGGI)** – A cooperative effort by Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. These nine states have capped CO₂ emissions from the power sector, and will require a 10 percent reduction in these emissions by 2018. RGGI is composed of individual CO₂ Budget Trading Programs in each of the nine participating states. Regulated power plants can use a CO₂ allowance issued by any of the nine participating states to demonstrate compliance with the state program governing their facility. Taken together, the nine individual state programs function as a single regional compliance market for carbon emissions, the first mandatory, market-based CO₂ emissions reduction program in the United States. New Jersey was a tenth state within the RGGI program but New Jersey's governor pulled the state out of the program in 2011.

^[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.