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TO: NYPA BOARD OF TRUSTEES  
FROM: EDWARD WELZ, CHIEF OPERATING OFFICER  
DATE: JULY 11, 2014  
SUBJECT: MONTHLY REPORT FOR THE BOARD OF TRUSTEES

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This report covers performance of the Operations group in June 2014.

## **Operations**

### *Plant Performance*

Systemwide net generation<sup>1</sup> was 2,196,604 MWh (megawatt-hours<sup>2</sup>) for June which is above the projected net generation of 2,057,787 MWh. For the year, net generation was 12,595,988 MWh which is below the projected target of 12,721,266 MWh.

The fleet availability factor<sup>3</sup> was 91.30 percent in June, and was 89.62 percent for the year. Generation Market Readiness factor<sup>4</sup> was 99.94 percent in June, which is better than the monthly target of 99.40 percent. Year-to-date Generation Market Readiness factor was at 99.83 percent, which is above the annual target of 99.40 percent.

There were no significant forced outages<sup>5</sup> in June.

Generation Net Revenue in June was \$27.3 million with a loss of revenue of \$5,400. For the year, net revenue was \$230.2 million while revenue loss is \$0.79 million.

Niagara River flows in June were above the historical average and are expected to be above normal levels for the year. St. Lawrence River flows for June were above forecast levels and are expected to be above historical levels for the year.

### *Transmission Performance*

Transmission reliability<sup>[i]</sup> in June was 98.31 percent, which was below the target of 99.54 percent. Year-to-date transmission reliability is 97.44 percent, above the target of 97.24 percent.

There were two significant unplanned transmission events in June to report. The MA-2 was removed from service on emergency for 29 hours to repair broken cross arms. The emergent Y-49 cable repair outage, taking 96 hours, had a significant impact on the monthly performance and was primarily responsible for the missed target.

### *Safety*

The NYPA DART (Days Away, Restricted or Transferred) Rate for June is 0.77. For the year, the DART Rate is 1.38 compared to the target of 0.78.

The Operations DART Rate for June is 1.17. For the year, the DART Rate is 2.02 compared to the target of 1.08.

There was one lost time incident in June that met the DART criteria. For the year, there have been 11 injuries that resulted in lost time and met the DART criteria.

### *Environmental*

There were six reportable incidents in June.

1. At the Vischer Ferry Small Hydro Plant, tree debris caught in a trash rake caused an oil spill into the river. All but a few ounces were contained.
2. The Astoria 500MW Unit 7A PEECC Bart unit developed a low pressure leak at the controller. About 12 pounds of R-22 refrigerant was released into the environment.
3. A release of 291 pounds of R-22 refrigerant occurred at the Clark Energy Center on Chillers 1 to 3.
4. Auto Transformer No. 2 at the St. Lawrence Switchyard discharged oil onto the ground.
5. Two oil spills occurred among NYPA's fleet vehicles:
  - a. At Massena, a tractor experienced a leak on its hydraulic line releasing 5 to 10 gallons of oil.
  - b. At Niagara, a hydraulic line on a slope mower failed which resulted in a leak of 2 gallons of oil.

For the year, there have been eighteen (18) incidents. The annual target is 32 incidents.

## *Life Extension and Modernization Programs*

### Transmission LEM

T-LEM is a multiyear program that will upgrade the Authority's existing transmission system to maintain availability, increase reliability, and ensure regulatory compliance. The Program encompasses Authority transmission assets in the Central, Northern, and Western Regions. The Program is estimated to cost \$726 million and is comprised of several projects:

- St. Lawrence Breaker & Relay Replacement:
  - STL Breaker Installation: O'Connell Electric has mobilized and commenced trenching and conduit installation.
  - STL Breaker Procurement: Fabrication of the circuit breakers is ongoing. First breaker shipment delivered 6/26.
  - 100MVAR Capacitor Banks: Delivery expected at the end of July.
- CEC Autotransformer/Reactor Refurbishment:
  - Reactor 1A completed.
  - Reactor 1X refurbishment in progress. One additional reactor will be refurbished in Fall 2014.
  - On April 23, while ABB was placing vacuum on Auto-Transformer 1X, the tank wall failed resulting in external and internal damage. ABB is currently preparing to ship it to the factory for repair, although NYPA has informed ABB that it will not accept a repair and has requested that a new unit be supplied.
- Massena Substation Reactor Refurbishment:
  - Two reactors are scheduled to be refurbished during the July – October 2015 period.
- NIA, BG & CEC Relay Replacements:
  - The project team continues to design, procure equipment and install relays.
- Massena Substation Autotransformer Replacement:
  - The spare autotransformer was energized on 6/13/14.
  - Three additional auto-transformers have arrived at the Port of Erie; the remaining three units are currently being transported from the factory in the Netherlands.
  - Since the NYISO has indicated that summer line outages should be avoided, installation of the first three auto-transformers are planned for the Fall 2014 and the second three Fall 2015.
  - A contract was awarded to O'Connell Electric for site prep of Banks #1&2.
- Tower Modeling:
  - Tower modeling of the weathering steel structures and grillage was completed.

- Tower Painting:
  - Tower painting proposals were received and are being evaluated for work at STL starting in 2015.
- STL, CEC & BG Switchyard LEM & STL Substation LEM:
  - The project team has assessed switchyard and substation equipment and determined the priority of equipment replacements.
  - Project Plans have been issued for review.
- NIA Switchyard LEM
  - A partial CEAR for the NIA Switchyard LEM was approved at the May Trustee meeting.
  - Design is in progress. RFQs for long lead equipment have been issued and bids received; review of proposals is in progress.
- PV-20 Submarine Cable Replacement:
  - Preliminary engineering activities are ongoing by CHA in collaboration with VELCO.
  - Cable specification has been issued and is undergoing final review by VELCO & NYPA.

#### LPGP LEM

The assembly of the third turbine runner is nearing completion and the assembly of the fourth has begun at Mitsubishi Hitachi Power Systems America's (MHPS's) facility located in Japan. Casting of components for the fifth turbine have been completed by MHPS's sub-contractor, Litostroj, located in Slovenia and are in transit to MHPS's facility in Japan for assembly. The fabrication of the sixth turbine at MHPS's two new facilities has commenced: Japan Steel Works, located in Japan, is fabricating the runner crown and band; and, Voestalpine, located in Austria, is fabricating the blades. The seven blades at Voestalpine were inspected and had acceptable test results. The insolvency proceedings regarding the Litostroj foundry are still pending; MHPS is considering the fabrication of the next runner components by Voestalpine and will be requesting for the fabrication release in the very near future in order to maintain schedule, quality and to reduce cost escalations by having runners fabricated in advance of the unit outage schedule.

As previously reported during the post-unit upgrade mechanical testing on Unit 11, several deficiencies were discovered and the testing was not completed. The main issues related to the overheating of the rotor pole connections, unit vibrations at speed no load, and shaft miss-alignment have all been addressed. Unit 11 is presently being re-assembled and the mechanical testing will resume by the end of July. The third unit outage (Unit 7) is scheduled to start August 11th. Fabrication of two additional sets of spare shafts is also well underway, with one of the sets of shafts being expedited in order to have it available in time for Unit 7 reassembly, if required. The LPGP LEM program is scheduled to be completed in 2020.

## *Technical Compliance – NERC Reliability Standards*

### Enforcement Actions – Northeast Power Coordinating Council (NPCC)

NYPA has three (3) minimal risk possible violations being processed pursuant to NYPA's participation in a NERC-sponsored enforcement pilot program (see Reliability Assurance Initiative (RAI) section below). Staff expects these violations to be designated as "compliance exceptions" in July, which means they will not be subject to enforcement and filing with NERC and FERC.

### Internal Investigation of Possible Violations

In June, two (2) new investigations were initiated and four (4) investigations were closed. There are currently three (3) open investigations. The four (4) investigations that were closed resulted in the identification of two (2) new possible violations which are candidates for processing under the NERC-sponsored enforcement pilot program.

### New Bulk Electric System (BES) Definition

As stated in earlier reports, the Federal Energy Regulatory Commission (FERC) approved the new Bulk Electric System (BES) definition and that NYPA will have over 40 newly identified BES elements that will be subject to the NERC reliability standards in July 2016.

Under this new definition NYPA may be required to register as a Transmission Operator (TOP) and/or a Transmission Planner (TP). In June, NYPA continued its participation in meetings with the NYISO and the other NY Transmission Owners to assess new state-wide functional registration and compliance management impacts and actions pursuant to the new BES definition. NYPA staff also met with NPCC staff to discuss NYPA's position on these matters.

NYPA staff continued discussions with LIPA to reach an agreement that clarifies the roles and responsibilities for compliance management for the Transmission Owner (TO) standards related to assets LIPA operates and maintains for NYPA in southeast New York ( a similar agreement was executed with Con Edison earlier). NYPA also continued to meet separately with National Grid and New York State Electric and Gas to address projected gaps in compliance for the Transmission Owner (TO) standards for newly identified NYPA BES assets located within their substations. NYPA's discussions with these NY Transmission Owners also focused on reaching agreement, before April 2016, for managing compliance with the Version 5 Critical Infrastructure Protection (CIP) cyber security standards for assets owned by NYPA, but operated and maintained by others.

## Critical Infrastructure Protection (CIP) Standards - Version 5

In June, NYPA staff continued to monitor regulatory developments and implement a plan for demonstrating compliance with Version 5 of NERC's Critical Infrastructure Protection (CIP) reliability standards for cyber security. In a recent development, FERC directed NERC to revisit some of the requirements in Version 5 that will result in a Version 6 for some of the CIP standards. These new reliability standards will have substantive impacts on NYPA's operations-related cyber security compliance program.

NYPA's effort to identify and classify its 'high' and 'medium' impact Cyber Systems is progressing and nearing conclusion. The results will be used to confirm the scope and costs of the implementation plan NYPA must execute to demonstrate compliance with the revised standards. In parallel, a Request for Proposal for the physical security modifications required under the new standards was developed and will be issued shortly. The results of the bids will be used as input to a Capital Expenditure Request that will be presented to the Board of Trustees in 2014. Expenditure estimates for implementation of the revised standards have been included in the Operations budget plan for 2014-2016.

### Physical Security Standard

As a result of recently distributed information about an April 2013 coordinated physical attack on a Pacific Gas and Electric Corporation substation, several US Senators requested FERC and NERC to consider whether NERC should establish and enforce standards for physical security for critical electric facilities. As a result, FERC directed NERC to develop a new physical security standard (CIP-014) that is expected to be approved by FERC in 2014.

In anticipation of FERC's approval of this standard, NYPA is assessing the applicability and impacts to NYPA's facilities and is regularly updating management. Pursuant to the applicability criteria in the standard several of NYPA's transmission stations and substations may be subject to the standard. The next step is to identify the stations and substations through system modeling studies that if rendered inoperable or damaged as a result of a physical attack, could result in instability uncontrolled separation, or cascading within an Interconnection. This analysis is being conducted in consultation with the New York Independent System Operator (NYISO). Those facilities that are identified from the modeling studies will be subject to other requirements including a vulnerability assessment and a documented security plan that must be reviewed and updated every 30 months.

## NERC Reliability Assurance Initiative (RAI)

NYPA has been actively supporting NERC and NPCC in moving this important NERC program forward. NYPA continues to participate in two pilot programs to test new compliance monitoring and enforcement tools. These pilot programs are being conducted in several regions across the country to establish the basis for a more risk-based, continent-wide compliance monitoring process. One is focusing on methods for assessing a company's risk and internal controls for managing compliance and one is focusing on new tools for processing minimal risk violations of the standards.

During the period, NYPA agreed to extend its participation in the RAI pilot program for Aggregation of Minimal Risk Issues for another six (6) months into October 2014. NYPA delivered presentations on its participation in this pilot program at the May 2014 NPCC Compliance and Standards Workshop and in a NERC-sponsored webinar in June 2014. NYPA received very positive feedback from the regulator for its participation in this pilot program.

## Energy Resource Management

### *NYISO Markets*

In June, Energy Resource Management (ERM) bid 2.53 million MWh of NYPA generation into the NYISO markets, netting \$55.7 million in power supplier payments to the Authority. Year-to-date net power supplier payments are \$509.6 million.

### *Fuel Planning & Operations*

In June, NYPA's Fuels Group transacted \$23.6 million in natural gas and oil purchases, compared with \$26.6 million in June 2013. Year-to-date natural gas and oil purchases are \$252.1 million, compared with \$182.6 million at this point in 2013. The total \$69.5 million increase is mainly due to the higher cost of fuel and/or fuel consumption at the Astoria Energy II Plant (\$28.4 million), 500-MW Combined Cycle Plant (\$36.8 million), and Richard M. Flynn Power Plant (\$10.7 million), which was offset by a decrease at the Small Clean Power Plants (-\$6.4 million).

### *Regional Greenhouse Gas Initiative*

Auction 24 of the Regional Greenhouse Gas Initiative was held on June 4th, 2014. Auction 24 cleared at \$5.02 and NYPA was awarded 2.4 million allowances. This covers the majority of NYPA's compliance obligation for 2014, leaving approximately 1 million allowances to be procured before the end of the year. Since inception, NYPA has purchased over 18.2 million RGGI allowances for a total cost of nearly \$50.2 million, averaging \$2.76 per allowance.

## GLOSSARY

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<sup>1</sup> **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.

<sup>2</sup> **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.

<sup>3</sup> **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).

<sup>4</sup> **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.

<sup>5</sup> **Significant Unplanned Generation Events** – Those events (forced or emergency outages of individual generator units) of duration greater than 72 hours, or have a total repair cost of greater than \$75,000, or result in greater than \$50,000 of lost revenues.

<sup>6</sup> **Transmission Reliability** - A measurement of the impact of forced and scheduled outages on the statewide system's ability to transmit power.

<sup>7</sup> **Significant Unplanned Transmission Events** – Those events (forced or emergency outages of individual transmission lines) which directly affect the reliability of the state's transmission network, or affect the availability of any component of the state's transmission network for greater than 8 hours, or that have a repair cost greater than \$75,000.