



EDWARD WELZ, PE  
Chief Operating Officer

TO: NYPA BOARD OF TRUSTEES  
FROM: EDWARD WELZ, CHIEF OPERATING OFFICER  
DATE: JULY 14, 2015  
SUBJECT: MONTHLY REPORT FOR THE BOARD OF TRUSTEES

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This report covers performance of the Operations group in June 2015.

**Operations**

*Plant Performance*

Systemwide net generation<sup>1</sup> in June was 2,058,059 MWh (megawatt-hours<sup>2</sup>) which is below the projected net generation of 2,303,642 MWh. For the year, net generation was 11,884,766 MWh which is below the projected target of 13,864,221 MWh.

The fleet availability factor<sup>3</sup> in June was 92.00 percent, and was 85.47 percent for the year. Generation Market Readiness factor<sup>4</sup> in June was 98.62 percent, which is lower than the target of 99.40 percent. Year-to-date Generation Market Readiness factor was at 98.37 percent, which is below the annual target of 99.40 percent.

There were two significant forced outage<sup>5</sup> events in June:

1. Pouch GT needed to have the generator rotor rebuilt beginning in May, and returned to service on June 20. This resulted in 858.9 total forced outage hours.
2. The St. Lawrence Plant was derated during the course of the month due to lack of water. This resulted in the equivalent of one day out of service.

Niagara River flows in June were above the historical average and will be above normal levels during the year. St. Lawrence River flows for June were below historical levels but are expected to be above the average flow for the rest of the year.

### *Transmission Performance*

Transmission reliability<sup>[i]</sup> in June was 98.84 percent, which was above the monthly target of 98.60 percent. Year-to-date transmission reliability is 97.28 percent, above the target of 96.15 percent.

There was one significant<sup>[iii]</sup> unplanned transmission outages in June. The GF5-35 line came out on emergency for 13-hours to repair a leak on the CCVT.

### *Safety*

The NYPA DART (Days Away, Restricted or Transferred) Rate for June is 0.00. For the year, the DART Rate is 1.23 compared to the target of 0.78.

The Operations DART Rate for June is 0.00. For the year, the DART Rate is 1.64 compared to the target of 1.08.

There was no lost time incidents in June that met the DART criteria.

For the year, there have been 10 injuries that resulted in lost time and met the DART criteria.

### *Environmental*

There were two reportable incidents in June:

1. At Flynn, a miscommunication with the sampling contractor caused the discharge monitoring sample to be taken at the end of the quarter. This resulted in the plant missing the submittal of the Discharge Monitoring Quarterly Report to the NYSDEC.
2. At Astoria 500MW, the required discharge monitoring samples were not taken due to the plant's forced outage. This resulted in the plant failing to report the Discharge Monitoring Report to the NYSDEC.

For the year, there have been 13 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:** Trustees authorized funding for Phase 1 in the amount of \$67.8 million (total \$110 million) at the December 2012 meeting.
  - Construction continues; PCB 1724 energized.
  - Station Service transformers and 480V switchgear 4A & 4B on order.
- **STL Remote Substations and Switchyard LEM (CPR 558, 1162, and 1163)**
  - Adirondack Sub work will be included in the MA1 rebuild package.
  - Engineering for replacement of Adirondack breakers OCB 102 and 202 completed.
  - Engineering for Station Service Upgrade at Plattsburgh in progress.
  - RFP is being assembled for storm water drainage improvement.
- **NIA Protective Relay Replacement (CPR 209):** Trustees authorized funding for Phase 1 in the amount of \$25.9 million (total \$52 million) at the December 2012 meeting.
  - NIA Packard 195, Packard 194, Bay10 Relay/1NR, Gardenville 180/ Panel 9NR scheduled for 2015:
    - Relay replacement outage in Bay 10 Relay/1NR, Gibson 198 was completed on 5/1/15
    - Replacement of the Packard 194 relay with a 311L is planned for the 3rd quarter 2015
    - Gardenville 180 scheduled for the 4<sup>th</sup> quarter 2015
- **NIA Switchyard LEM:** Trustees authorized funding for Phase 1 in the amount of \$154 million (total \$266.9 million) at the December 2012 meeting.
  - 800MVA Auto-Transformer design/fabrication complete; delivery scheduled for 8/20/2015.
  - Five (5) 115kV Breakers delivered to site on 6/30/2015
  - Award recommendation in progress for 2015/2016 Installation Contract and Miscellaneous Equipment
  - 115kV trenching and conduit installation complete.
  - Fall 2015 outage work including AT4 Replacement – scheduled start 9/7/2015
  - NIA DC Distribution Upgrade: comments on 90% design package received. IFC and specifications for procurement of equipment package to be issued by RCMT- August 2015
- **CEC Switchyard LEM:**
  - CEAR and award for 765 kV circuit breakers approved by Trustees.
  - 345 kV breakers contract awarded
  - IFB package for 2016 construction in progress – due 9/30/2015
  - 765 PT contract awarded
- **CEC Auto-Transformer/Reactor Refurbishment:**
  - All reactors complete; 1A, 1C, 1X, 1B

- Change Order issued to ABB to repair Auto-Transformer 1X to address the damage caused by ABB as well as legacy issues discovered during the inspection. The unit is expected to return to CEC by 3/31/16.
- **Massena Substation Reactor Refurbishment:**
  - Refurbishment of (2) reactors is planned for 2015.
    - Reactor 1X outage: 8/3/15 – 10/2/15.
    - Reactor 1B outage: 10/3/15 - 10/25/15.
- **PV-20 Submarine Cable Replacement:**
  - Bids received for cable removal on 4/30/15 and installation on 5/14/15; review in progress.
- **BG & CEC Relay Replacements:**
  - The project team continues to design, procure equipment, and install relays.
- **Massena Substation Autotransformer Replacement:**
  - All auto-transformers have been delivered to Massena; installation in progress.
  - Bank 2 energized on May 29, 2015; Bank 1 return-to-service will be in 2016
  - Request for additional funding to be presented to the Trustees at July 2015 meeting.
- **Tower Painting:**
  - Painting started in the Northern NY region and is expected to run through November 2015.

### LPGP LEM

The fourth unit outage (Unit 2) commenced on March 25, 2015 and the unit refurbishment work is well underway as scheduled. However, Mitsubishi Hitachi Power Systems Americas (MHPSA) has encountered quality control issues with the new inner head cover that they are fabricating which will delay the unit re-assembly by at least two weeks. MHPSA is preparing a recovery plan in order to try and maintain the schedule and the time allotted for commissioning will also need to be compressed to return the unit to service on November 10, 2015.

MHPSA has decided to change the fabrication of the remaining six head covers from their own facility located in Saskatoon Canada to an independently-owned fabricator, ABS Machining located in Mississauga, Canada, due to ongoing quality and schedule issues. The Saskatoon facility will continue with the fabrication of the fifth and six set of head covers and ABS commenced with the fabrication process in parallel with the Saskatoon facility; this is to ensure that at least one set of head covers is available for the next unit outage (Unit 6) in order to maintain the schedule. In addition, the fabricator of the new servomotors, Voith, recently underwent staff downsizing at their facility located in York, PA and decided to have the remaining seven servomotors fabricated to the same ABS facility mentioned above in order to meet the program schedule and contract terms.

As previously reported, the rotor from Unit 2 has signs of overheating and the Plant will replace the damaged rotor pole components in order to place the rotor back in service.

The fourth runner (to be installed in Unit 2) has been delivered and the fifth and sixth runners are presently being assembled in MHPSA's facility located in Japan (which is typical for all runners). The fabrication of the seventh runner components have been completed by the Litostrój foundry located in Slovenia and arrived at MHPSA's facility for assembly. The components for the eighth runner are in various stages of fabrication at the Litostrój foundry and were inspected in May with acceptable results. As previously reported, the Litostrój facility may be acquired by another fabricator which is still pending.

The fourth set of wicket gates arrived on site and the fabrication of the fifth set of wicket gates is underway. The third set of spare shafts was delivered and the fabrication of three additional spare sets of shafts was released. MHPSA ordered the fourth spare set of shafts from Hyunjin and ordered the fifth and sixth spare set of shafts from a new forging foundry, Taewoong also located in South Korea as previously reported. NYPA's QA and Engineering staff plan on inspecting the first shaft that is being fabricated by the Taewoong facility in July.

The original turbine shaft from Unit 2 was inspected in June and cracks were discovered and it was decided to use the new spare shafts instead. Based upon the discovery of cracks in three out of four original shafts inspected thus far and given the high probability that additional shafts will be in similar condition, all existing shafts on future units going forward will be replaced with new ones. A fabrication release for the remaining additional spare sets of shafts will be forthcoming.

The time frame between the future unit outages has been condensed in order to maintain the completion of the LPGP LEM program in 2020 as originally planned.

### *Technical Compliance – NERC Reliability Standards*

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

During the reporting period, no new possible violations of the North American Electric Reliability Corporation (NERC) Reliability Standards were reported to the NPCC. There is one (1) possible violation being processed under NERC's risk-based enforcement program for self-logging of minimal risk issues.

#### Internal Investigation of Possible Violations

One (1) new investigation was initiated in June. There are seven (7) open investigations.

#### New Bulk Electric System (BES) Definition

As stated in earlier reports, the Federal Energy Regulatory Commission (FERC) approved a new Bulk Electric System (BES) definition. Under the new definition NYPA has nearly 50 newly identified BES elements that will be subject to the NERC reliability standards in July 2016.

In June, a joint NYPA-Alcoa exclusion exception request to the BES definition for the Moses-Alcoa (MAL) 115 kV transmission lines was submitted to NPCC for review and approval. Based on the NERC Rules of Procedure Appendix 5c, it is anticipated that a decision regarding this exception will be available by November 2015. NYPA is also developing an exclusion exception request to the BES definition for the Plattsburgh 115 kV capacitor banks 5 and 6. This exception request is anticipated to be submitted to NPCC in July 2015. Approval of these exception requests will relieve NYPA from having to be registered as a Transmission Operator for its newly identified BES elements. With that outcome, the NYISO will be the Transmission Operator for NYPA's new BES elements.

#### Physical Security Standard (CIP-014-1)

On June 12, 2015, NPCC performed an assessment of NYPA's preparation for complying with the NERC CIP-014 physical security standard. The meeting was held at the Clark Energy Center. NPCC was impressed with NYPA's preparation and steps that have been taken with regard to developing and enhancing the security plans of the facilities that may be subject to the standard. NPCC's summary report concluded that NYPA has applied a logical, common sense approach to achieve a security posture that is aligned with the requirements of the CIP-014 standard.

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

NYPA's CIP Version 5 (V5) Implementation Project team continued to execute the transition plan to achieve compliance with the new standards before the April 1, 2016 enforcement date. In preparation for this outcome, NYPA is scheduled for a CIP V5 transition assessment by NPCC on September 15-17, 2015. The assessment is an opportunity for NYPA to validate its approach and implement any recommendations NPCC might make before the enforcement date.

## Energy Resource Management

### *NYISO Markets*

In June, Energy Resource Management (ERM) bid 2.29 million MWh of NYPA generation into the NYISO markets, netting \$32.2 million in power supplier payments to the Authority. Year-to-date net power supplier payments are \$301.7 million.

### *Fuel Planning & Operations*

In June, NYPA's Fuels Group transacted \$12.4 million in natural gas and oil purchases, compared with \$23.6 million in June 2014. Year-to-date natural gas and oil purchases are \$164.5 million, compared with \$252.2 million at this point in 2014. The total -\$87.7 million decrease is due to the lower cost of fuel and / or fuel consumption at the Astoria Energy II Plant (-\$31.1 million), 500-Mw Combined Cycle Plant (-\$36.0 million), and Richard M. Flynn Power Plant (-\$14.5 million), and Small Clean Power Plants (-\$6.1 million).

### *RGGI*

Auction 28 of the Regional Greenhouse Gas Initiative was held on June 3, 2015. Auction 28 cleared at \$5.50 and NYPA was awarded 1.5 million allowances. To date, NYPA has secured sufficient allowances to cover its compliance obligation for 2015 and the majority of 2016. Since inception, NYPA has purchased nearly 26 million RGGI allowances for a total cost of approximately \$91 million, averaging \$3.51 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.