

123 Main Street
White Plains, NY 10601-3170
914.681.6675
Edward.Welz@nypa.gov



Edward Welz
Chief Operating Officer

TO: NYPA BOARD OF TRUSTEES
FROM: EDWARD WELZ, CHIEF OPERATING OFFICER
DATE: OCTOBER 7, 2014
SUBJECT: MONTHLY REPORT FOR THE BOARD OF TRUSTEES

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

Operations

Plant Performance

Systemwide net generation¹ was 2,103,234 MWh (megawatt-hours²) for September which is above the projected net generation of 1,905,166 MWh. For the year, net generation was 19,214,578 MWh which is above the projected target of 18,914,773 MWh.

The fleet availability factor³ was 93.93 percent in September, and was 90.39 percent for the year. Generation Market Readiness factor⁴ was 99.79 percent in September, which is higher than the monthly target of 99.40 percent. Year-to-date Generation Market Readiness factor was at 99.54 percent, which is above the annual target of 99.40 percent.

There were no significant forced outages⁵ in September.

Generation Net Revenue in September was \$17.4 million with a loss of revenue of \$0.01 million. For the year, net revenue was \$314.2 million while revenue loss is \$0.87 million.

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

Transmission Performance

Transmission reliability⁶ in September was 98.39 percent, which was above the target of 98.20 percent. Year-to-date transmission reliability is 97.98 percent, above the target of 97.71 percent.

There were no significant unplanned transmission events in September to report.

Safety

The NYPA DART (Days Away, Restricted or Transferred) Rate for September is 1.56. For the year, the DART Rate is 1.34 compared to the target of 0.78.

The Operations DART Rate for September is 2.35. For the year, the DART Rate is 1.99 compared to the target of 1.08.

There were two lost time incidents in September that met the DART criteria. For the year, there have been 16 injuries that resulted in lost time and met the DART criteria.

Environmental

There was one reportable incident in September.

1. A release of R-22 refrigerant occurred at the Poletti facility which exceeded the NYDEC reportable quantity of one pound.

For the year, there have been 25 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.
 - **115kV & 230kV Breakers:** First breaker shipment delivered 6/26/14. Next shipment scheduled for mid-October.
 - **Two New 100MVA Cap Banks:** Cap Banks were delivered 8/28/14.
 - **13.8kV & 480V SWGR:** Three bids received and are being evaluated; post bid addendums issued.

- **SAMAC Cutovers:**
 - **Cap Bank Protection:** CH2M submitted final wiring and underground design, comments provided by NYPA. CH to provide IFC drawings mid-September.
 - **Alcoa Cutover:** Breaker 1702 replaced, testing in progress with plan to energize in September. 1708 outage to begin contingent on Bank 5 outage.
 - **SAMAC SCADA Integration:** Meeting with Engineering held 7/14/14 to discuss responsibilities and strategy for moving forward with integrations. STL CSE adding 1700 bay points to new SCADA master. Siemens on-site week of 9/22 to resolve SICAM issues.
 - **Construction Installation:** O'Connell Electric has mobilized and commenced trenching and conduit installation. Circuit breaker installations in progress.
- **NIA Protective Relay Replacement:** Trustees authorized funding for Phase 1 in the amount of \$25.9 million (total \$52 million) at the December 2012 meeting.
 - **PA 27, 301 & 302:** The upgrade schedule for PA-302 was accelerated to occur between 11/3/14 – 12/5/14 instead of 2015.
 - **NIA DC Distribution Upgrade (CPR 553):** Preliminary design in progress by RCM.
 - **NIA Packard 195, Gardenville 180, and Panel 9NR (CPR 209):** Procurement package sent out for bid; proposals have been received and are being evaluated. Plan is for material delivery date of 1/8/15 in time for a 1st or 2nd Quarter 2015 outage for Packard 195, and Gardenville 180 construction. The replacement of the Packard 194 relay with a 311L is planned for the 3rd quarter 2015.
 - **NIA NR2 (CPR 209):** RG&E reported that current planned location for RG&E's Station 255 will need to be revisited because of property owner issues and is now likely scheduled for construction 3rd 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.
 - National Grid to begin Packard 195 re-conductoring in September. NYPA to make connections by end of 2014.
 - Award issued for procurement of a replacement 800MVA auto-transformer to ABB. Electrical Design Review meeting conducted.
 - 115kV and 230kV breaker proposals were received. Award of 115 KV breakers issued. RFQ for 230KV breakers reissued due to substantive changes in requirements.
 - 115kV and 230kV switch proposals received 7/10/14 and are under review.
 - Proposals for CT, PT's and Surge Arrestor received and are being evaluated.

- **CEC Switchyard LEM:**
 - Proposals received for the 765kV/345kV circuit breakers; award of the 765kV circuit breakers is pending the October Trustee meeting. Preparation of CEAR in progress for presentation at the Trustee meeting scheduled for October.
- **CEC Auto-Transformer/Reactor Refurbishment:**
 - Reactor 1A and IX completed.
 - ABB has not reached settlement with their insurance carrier for Auto Transformer 1X which was damaged while placing vacuum on April 23. Based on options provided by ABB, NYPA has selected an option to repair/refurbish transformer using existing LTC and core pending outcome of inspection of damage. The LTC is being evaluated and the auto-transformer is in route to ABB's facility in Varennes, Canada.
 - One additional reactor will be refurbished in Fall 2014.
- **Massena Substation Reactor Refurbishment:**
 - Refurbishment work is deferred to 2015.
- **PV-20 Submarine Cable Replacement:**
 - The cable routing plan and ampacity calculations have been accepted by NYPA & VELCO. The cable specification has been reviewed and pending acceptance. CHA advancing NY permitting under SEQRA.
- **BG & CEC Relay Replacements:**
 - The project team continues to design, procure equipment, and install relays.
- **Massena Substation Autotransformer Replacement:**
 - All six remaining auto-transformers have arrived at the Port of Erie.
 - Since the NYISO has indicated that summer line outages should be avoided, installation of the first three auto-transformers has been deferred; revised schedule is being consolidated with input from NYISO.
 - O'Connell Electric has mobilized to prep the area around the failed #2A unit. Unit 2A has been removed and the containment area rehabilitated.
 - The first set of three transformers will arrive October.
- **Tower Painting:**
 - Painting is planned for 110 towers of STL in 2015. Contract award is being processed.

LPGP LEM

The assembly of the third turbine runner was completed and is in transit scheduled to arrive in Baltimore on October 10th. The assembly of the fourth turbine runner is well underway at Mitsubishi Hitachi Power Systems America's (MHPS's) facility located in Japan. The blades for the fifth turbine arrived at MHPS's facility that were fabricated by their sub-contractor, Litostroj, located in Slovenia. The runner assembly will commence in October. The fabrication of the sixth turbine at MHPS's two new facilities is well underway. Japan Steel Works, located in Japan, is fabricating the runner crown and band which are scheduled to be completed in February 2015. Voestalpine, located in Austria, is fabricating the blades which are being machined and are scheduled to be completed in

October. The remaining six runners were released for fabrication to MHPS which will most likely be fabricated at the Litostroj facility located in Slovenia, confirmation is pending.

The third unit outage (Unit 7) commenced on August 4th a week ahead of the new schedule. The unit disassembly and inspections of the draft tube and turbine liner wall were completed. Unforeseen repairs to the stay ring and stay vanes are underway in an expedited fashion in order to maintain the schedule. The new unit control board and static excitation system equipment was installed and the installation of new cables and conduits commenced; the unit's return to service date is March 20, 2015. The fabrication of the first additional spare set shafts was completed and is in transit and is scheduled to arrive in early October as planned. These spare shafts may be installed in Unit 7 pending the inspection of the original shaft which is underway. The fabrication of the second additional set of shafts is nearly completed and additional shafts may be ordered depending on the inspection results of Unit 7 shafts.. 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)

NYPA has two (2) minimal risk violations being processed pursuant to NYPA's participation in a NERC-sponsored Reliability Assurance Initiative enforcement pilot program. There will not be any penalties associated with these violations.

Internal Investigation of Possible Violations

Since the last report, two (2) new internal investigations were initiated and one (1) investigation was closed. There are currently four (4) open internal investigations.

NPCC Spot Check Audit

On July 29, 2014, NPCC formally notified NYPA that it will be conducting an off-site Spot Check Audit of the PRC-002-NPCC-001 standard for NYPA's Transmission Owner functional registration starting on October 20, 2014. This standard has requirements for the installation, maintenance, and testing of disturbance monitoring equipment. NYPA staff are gathering the evidence required to demonstrate compliance with the standard and will submit it to the NPCC auditor on or before October 20, 2014.

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 has nearly 50 newly identified BES elements that will be subject to the NERC reliability standards in July 2016. In addition, under this new definition, NYPA may be required to register as a Transmission Operator (TOP) and/or a Transmission Planner (TP). 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.

In September, NPCC and NERC approved 75% of NYPA's newly identified BES elements submitted via NERC's *BESnet* software application; the tool NERC developed to identify and monitor new BES assets. The remaining 25% are under review by NPCC. Such information is required of every registered entity in the United States. Related to this requirement, NYPA continues to work closely with Alcoa in the development of a joint exception request to exclude the Moses-Alcoa 115kV transmission lines from the BES.

NYPA staff continued discussions with NY Transmission Owners to reach agreements that clarify the roles and responsibilities for compliance management for the Transmission Owner (TO) standards related to NYPA assets operated and maintained by others. NYPA's discussions with these NY Transmission Owners also focused on reaching agreements, before April 2016, for managing compliance with the Version 5 Critical Infrastructure Protection (CIP) cyber security standards for assets owned by NYPA but that reside in facilities owned by other Transmission Owners.

Critical Infrastructure Protection (CIP) Standards - Version 5

In September, NYPA staff continued to monitor regulatory developments associated with NERC's Critical Infrastructure Protection (CIP) Version 5 reliability standards for cyber security. These new reliability standards will have substantive impacts on NYPA's operations-related cyber security compliance program. In response, a comprehensive CIP Version 5 Compliance Transition Project Plan (Plan) is being developed. The Plan leverages NYPA's existing CIP Version 3 compliance program and includes tasks to expand the program to include the additional Cyber Systems that were identified and classified as 'high' and 'medium' impact Cyber Systems. The Plan will be finalized in September and initiated in October.

In parallel, a Request for Proposal for the physical security modifications for the 'high' and 'medium' impact facilities that are required under the new standards was developed and issued for bid. Pre-bid walk downs of the facilities that will receive the improvements began in September. The results of the bids and the CIP Version 5 transition plan are being 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.

When completed, these efforts will enable NYPA to demonstrate compliance with the new standards by the April 1, 2016 enforcement date.

Lastly, NERC announced the withdrawal of the mandatory survey it intended to release to the industry, as was reported last month, to identify the number of 'low' impact BES Cyber Systems subject to the CIP Version 5 standards.

Physical Security Standard

Recently, FERC directed NERC to develop a new physical security standard (CIP-014-1). It is anticipated that FERC will approve this standard by the end of 2014 and it will become effective six months after approval.

In September, NYPA met with the NYISO to discuss NYPA's plan for assessing the applicability of CIP-014-1 to NYPA's transmission facilities and discuss preliminary results from modeling studies. The NYISO agreed with the preliminary results, which identified five transmission stations/substations that are likely to be subject to other requirements including a vulnerability assessment and a documented security plan that must be reviewed and updated every 30 months. In addition, NYPA is working with the NYISO and NY Transmission Owners to develop a modeling methodology to ensure consistency across New York State in the assessment and identification of transmission facilities applicable under this standard.

NERC Reliability Assurance Initiative

The VP Technical Compliance, R. Crissman, is serving on an RAI Industry Advisory Group, established by NERC, which will provide implementation guidance for this NERC initiative. The objective of the initiative is to establish more risk-based compliance monitoring and enforcement processes for NERC's reliability standards; the implementation is planned to be completed by the end of 2015. Mr. Crissman attended the first meeting of the Advisory Group on September 22. The next meeting is scheduled for October 14.

Energy Resource Management

In September, Energy Resource Management (ERM) bid 2.29 million MWh of NYPA generation into the NYISO markets, netting \$38.0 million in power supplier payments to the Authority. Year-to-date net power supplier payments are \$648.4 million.

Fuel Planning & Operations

In September, NYPA's Fuels Group transacted \$13.6 million in natural gas and oil purchases, compared with \$20.9 million in September 2013. Year-to-date natural gas and oil purchases are \$302.3 million, compared with \$256.5 million at this point in 2013. The total \$45.8 million increase is mainly due to the higher cost of winter fuel and/or fuel consumption at the Astoria Energy II Plant (\$21.5 million), 500-MW Combined Cycle Plant (\$26.5 million), and Richard M. Flynn Power Plant (\$10.4 million), which was offset by a decrease at the Small Clean Power Plants (-\$12.6 million).

Regional Greenhouse Gas Initiative

Auction 25 of the Regional Greenhouse Gas Initiative was held on September 3, 2014. Auction 25 cleared at \$4.88 and NYPA was awarded 1.75 million allowances. This covers the remainder of NYPA's compliance obligation for 2014 and leaves approximately 500,000 allowances available for next year. Since inception, NYPA has purchased nearly 20 million RGGI allowances for a total cost of approximately \$58.7 million, averaging \$2.94 per allowance.

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** – 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.

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

⁷ **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.