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TO: NYPA BOARD OF TRUSTEES
FROM: EDWARD WELZ, CHIEF OPERATING OFFICER
DATE: FEBRUARY 10, 2015
SUBJECT: MONTHLY REPORT FOR THE BOARD OF TRUSTEES

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

Operations

Plant Performance

Systemwide net generation¹ in January was 2,154,277 MWh (megawatt-hours²) year-to-date which is below the projected net generation of 2,361,248 MWh.

The fleet availability factor³ in January was 89.47 percent year-to-date. Generation Market Readiness factor⁴ in January was 99.89 percent year-to-date, which is higher than the target of 99.40 percent.

There was one significant forced outage⁵ in January:

1. Gilboa Unit 3 remains in a forced outage from December 5, 2014 because of cracks discovered in the main rotor ledge.

Generation Net Revenue in January was \$33.6 million with no loss revenue year-to-date.

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

Transmission Performance

Transmission reliability⁶ in January was 97.21 percent, which was above the target of 97.06 percent year-to-date.

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

Safety

The NYPA DART (Days Away, Restricted or Transferred) Rate for January is 1.70, compared to the year-to-date target of 0.78.

The Operations DART Rate for January is 1.70, to the year-to-date target of 1.08.

There were two lost time incidents in January that met the DART criteria.

Environmental

There was one reportable incident in January:

1. At Niagara, a release of 15 gallons of glycol resulted from a hole in a side cooler on Breaker B-1. It was discovered when investigating a low coolant indication.

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.
 - Removing demo cables from control tunnel.
 - Pulling cables for PCB 1724 from SAMAC building to control tunnel in preparation for PCB 1724 install.
 - Installing cable tray and conduit in Service Building basement for new 480V system.
 - Draining oil from OCB 1702, 1708 and 1714 bushings in preparation for removing them from site next week.
- **STL Remote Substations and Switchyard LEM (CPR 558, 1162, and 1163)**
 - 2017 Construction Start – Plattsburgh.
 - Adirondack Sub work will be included in the MA1 rebuild package.
 - Engineering for replacement of Adirondack breakers OCB 102 and 202 in progress.
 - Engineering for Station Service Upgrade at Plattsburgh in progress. Switchgear removal to be completed before relay replacement work can take place.
 - Relaying/Metering/Communications/SCADA conceptual design for Plattsburgh discussed 12/8. Follow up meeting with site scheduled for January.
 - Schedule for Remote Substation BARR/LEM work under development.
 - CT/VT metering units for MA1&2 in procurement. Final round of technical clarifications underway.
- **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.
 - **NIA Packard 195, Gardenville 180, and Panel 9NR (CPR 209):** The replacement of the Packard 194 relay with a 311L is planned for the 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.
 - **NIA DC Distribution Upgrade:** Preliminary design completed. RCMT will issue 60% drawings on 1/23/15 and 90% drawings on 5/15/15.
 - 800MVA auto-transformer design/fabrication is in process.
 - 115kV circuit breaker contract awarded; kick off meeting was held on 1/16/15
 - 230kV circuit breaker proposals are being evaluated.

- 115kV trenching and conduit installation is in progress.
- Engineering for Tubular Bus, Disconnect Switches, and MODS by RCMT in progress.
- **CEC Switchyard LEM:**
 - CEAR and award for 765 kV circuit breakers approved by Trustees.
 - 345 kV circuit breakers and 765 kV potential transformers award in progress.
 - Kick Off meeting with ABB for 765 KV Circuit Breakers was held on 1/20/2015.
- **CEC Auto-Transformer/Reactor Refurbishment:**
 - Reactor 1A, 1C, 1X completed.
 - Reactor 1B scheduled for Spring 2015.
 - Meeting conducted with ABB on January 22, 2015 to review detailed report following damage to auto-transformer 1X; NYPA has decided to proceed with the repair to address the damage caused by ABB as well as legacy issues discovered during the inspection.
- **Massena Substation Reactor Refurbishment:**
 - Refurbishment of (2) reactors is planned for 2015.
- **PV-20 Submarine Cable Replacement:**
 - Final review of bid package is in progress by NYPA and VELCO.
- **BG & CEC Relay Replacements:**
 - The project team continues to design, procure equipment, and install relays.
- **Massena Substation Autotransformer Replacement:**
 - (2) auto-transformers have been delivered to Massena with the remaining (4) being planned for delivery in late February – March 2015; installation in progress.
 - Continued working on marshaling cabinet enclosure for Bank 2 and conduits.
 - Bank 2 is planned to return-to-service in April 10, 2015; Bank 1 return-to-service will be in 2016.
- **Tower Painting:**
 - Contract awarded to Tower Maintenance.
 - Estimated start is April 2015 running through November 2015.
 - Kick-off meeting conducted January 21, 2015.

LPGP LEM

The third unit outage (Unit 7) commenced on August 4, 2014 and is presently being re-assembled. The “dry commissioning” of the new unit control, static excitation and relay protection systems are well underway. The unit’s return to service date is March 20, 2015 as scheduled. The fourth unit outage (Unit 2) is scheduled to commence on April 1, 2015 and return to service on November 10, 2015.

The fourth runner was inspected and is scheduled to be delivered in July 2015. The fifth runner components arrived at MHP SA’s facility located in Japan and assembly commenced and is scheduled to be completed in December 2015.

The fabrication of the sixth runner components are occurring at two new facilities: Japan Steel Works (JSW) located in Japan and Voestalpine located in Austria. The seven blades for the sixth runner as fabricated by Voestalpine arrived at MHPSA's facility located in Japan. The fabrication of the crown and band are nearing completion at JSW's facility and are scheduled to be shipped to MHPSA's facility at the end of February. The seventh runner components are in various stages of fabrication at the Litostroj foundry located in Slovenia and a blade for the eighth runner has been poured by Litostroj.

The fourth set of wicket gates are in transit to the port of New Jersey from China. The fabrication of the fifth set of wicket gates is underway and the sixth set of gates has been released. The third set of spare shafts was delivered and we are in the process of releasing three additional spare sets of shafts as previously reported.

The second unit that was refurbished/updated last year, Unit 5, recently experienced unexpected power oscillations when in generation mode. Engineering is presently investigating the equipment programming parameters in SCADA and the unit's new governor and excitation systems in order to prevent future power oscillations.

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)

In January NPCC Enforcement Staff closed its review of the three (3) minimal risk violations being processed pursuant to NYPA's participation in a NERC-sponsored Reliability Assurance Initiative (RAI) pilot program for self-logging. NPCC determined that these instances of noncompliance posed minimal risk to the reliability of the Bulk Power System and have been properly mitigated. NPCC processed one (1) of the violations as a Compliance Exception and decided not to take any additional action on the other two. There will not be any penalties associated with these violations.

Internal Investigation of Possible Violations

Since the last report, one new internal investigation was initiated and one was closed. There are currently five (5) open internal investigations.

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. 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 January, NYPA engaged the NYISO in discussions regarding NYPA's request of the NYISO to add some of NYPA's newly identified BES elements to its list of controlled assets for Transmission Operator (TOP) compliance purposes. NYPA is

taking a position that since it does not operate most of its newly identified BES assets, in a NERC functional model sense, that it will not be registered as a TOP. The NYISO agreed to add approximately 60% of NYPA's new BES assets, mainly newly identified 345 kV elements (e.g. those associated with the Y49 transmission line) to its list of controlled assets for TOP compliance purposes. The NYISO requested that NYPA continue discussions with other Transmission Owners (TOs) regarding TOP compliance for the remaining NYPA BES assets.

NYPA continues to work closely with Alcoa in the development of a joint exception request to exclude the Moses-Alcoa 115 kV transmission lines from the BES. In January, RSC staff and consultants met with Alcoa staff at the Alcoa headquarters in Tennessee to review supporting documentation for the exclusion exception request. It is anticipated the exclusion exception request will be submitted to NPCC for evaluation in April 2015.

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 organizations 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 others.

Critical Infrastructure Protection (CIP) Standards - Version 5

The Transition Team continues to focus on the critical milestones. Primary among these are the validation of the initial Bulk Electric System (BES) Facilities and their associated BES Cyber Systems (BCS) categorizations. This key deliverable impacts the implementation of other high priority tasks needed to assure NERC CIP V5+ compliance by April 1, 2016.

With the cancellation of the January 2015 Board of Trustees meeting, the CIP Version 5+ Capital Expenditure Authorization Request (CEAR) for NERC CIP V5+ implementation will be presented at the next meeting for approval. Approval was received to issue a letter of Intent to the successful bidder to commence the engineering tasks in February. The CIP Version 5+ expenditure estimates for implementation are included in the Operations budget plan for 2015-2016.

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

Physical Security Standard

FERC approved the new physical security standard (CIP-014-1 – Physical Security) on November 20, 2014 and it will become effective October 1, 2015.

In January, NYPA attended NYISO Transmission Planner (TP) meetings to help facilitate the development of a modeling methodology to ensure consistency across New York State in the assessment and identification of transmission facilities that will be subject to this standard. 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.

Energy Resource Management

NYISO Markets

In January, Energy Resource Management (ERM) bid 2.46 million MWh of NYPA generation into the NYISO markets, netting \$60.9 million year-to-date in power supplier payments to the Authority.

Fuel Planning & Operations

In January, NYPA's Fuels Group transacted \$45.7 million in natural gas and oil purchases, compared with \$75.6 million in January 2014. The total -\$29.9 million decrease is due to the lower cost of fuel at the Astoria Energy II Plant (-\$9.6 million), 500-Mw Combined Cycle Plant (-\$10.9 million), and Richard M. Flynn Power Plant (-\$6.8 million), and Small Clean Power Plants (-\$2.6 million).

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.