

May 23, 2016

**FERC Project No. 2572
Article 402**

Kimberly S. Bose, Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL-11.2
888 First Street, N.E.
Washington, D.C. 20426

RE: Flow Excursion at Ripogenus Project due to McKay Station Outage

Dear Secretary Bose:

Great Lakes Hydro America, LLC (GLHA), licensee for the Ripogenus Project (FERC Project No. 2572-ME) in Maine, is writing to report a reduction in outflow from the Project's McKay Station to the West Branch of the Penobscot River for less than two hours on May 13, 2016. As described below, after discovering the excursion, GLHA promptly dispatched crews to open two crest gates at Ripogenus Dam (the "Dam") and remedied the triggering transmission line pole cross arm failure. Further remedial measures to prevent recurrence are also being undertaken, as described below.

Background

Article 402 of the Project license contains the following outage flow requirement:

"Outage flows (during failure of generating units at McKay Station) of 400 cfs, with scheduled minimum flows to be resumed as quickly and practically as possible by releases from Ripogenus dam if necessary, but in no event in more than three days following the initial outage".

Article 402 further states that minimum flows at the Project may be temporarily modified if required by operating emergencies beyond the control of the licensee, with subsequent notification to FERC within 10 days of the flow modification.

Description of the Excursion

On Friday, May 13, 2016, at 12:32 hours, a pole cross arm on the Ripogenus transmission line failed. The line failure tripped McKay Station to cease operating, thereby reducing its outflow to the West Branch of the Penobscot River to approximately 240 cfs. McKay Station has a minimum flow system designed to ensure continued outflow of 400 cfs during a station outage, but that system partially malfunctioned and activated only two of the three units.

GLHA promptly responded by sending a crew to the Dam. After checking downstream areas to ensure public safety, and sounding the siren per the gate opening protocol, the GLHA crew opened two crest gates at the Dam, thereby reestablishing river flows of approximately 2,400 cfs by 14:20 hours. As a result, the minimum flow dropped below the required minimum 400 cfs outage flow level for a total of 1 hour and 48 minutes. McKay Station currently remains down for transmission line repairs.

Root Cause and Steps Taken to Prevent Reoccurrence

McKay Station Minimum Flow System – Following station outages and excursions caused by partial malfunctions of McKay Station's minimum flow system last year (reported on June 23, 2015 and August 24, 2015), GLHA kept a sluice gate open at the Dam to ensure that the minimum flow was passed during any subsequent station outages, while GLHA identified and corrected the cause(s) of the partial malfunctions. By letter to the Commission dated January 7, 2016, GLHA detailed that it had closed the gate on December 22, 2015, after fully implementing and testing several corrective measures to remediate the minimum flow system.

This current minimum flow excursion occurred when the minimum flow braking system on Unit #1 did not hold when the station tripped. Although this braking system functioned properly during the December 2015 testing, GLHA believes that a higher current impoundment level (about 8 feet higher than in December) contributed to the May 13 malfunction, due to the increased forces needed to stop the unit under the greater head.

To prevent reoccurrence, GLHA intends to add a second braking system to Unit #1 (and Unit #2), and then to retest the system under higher impoundment levels and then, as an additional safeguard, under conditions that exceed normal operating parameters. The second braking system should increase the clamping force on these units. In the meantime, GLHA will keep a sluice gate at the Dam open until GLHA is confident that the minimum flow system functions properly and will maintain the required 400 cfs flow during any subsequent station outages.

Transmission Line – The June 13, 2015, August 13, 2015, and now May 13, 2016 outages at the Project each were caused by cross arm failures on the Ripogenus transmission line. As reported on August 24, 2015, GLHA recently maintained this transmission line by taking a 10-day outage last fall to replace components identified during a recent inspection. During this 2015 maintenance, GLHA focused on public safety, and thus prioritized the replacement of poles and cross arm components at all road crossings.

To prevent reoccurrence, GLHA will, as part of its long-term maintenance strategy for this transmission line, replace more poles and cross arm components in 2016 and future years, as periodic inspections necessitate. The May 13th cross arm failure was not at or near a road crossing, but GLHA's ongoing inspection and maintenance schedule will reduce the likelihood of additional transmission line failures over the line's entire length.

Conclusion

The excursion detailed in this report resulted from both an unscheduled interruption in generation at McKay Station (due to a transmission line failure) and a malfunction of the station's minimum flow system (which is intended to provide a 400 cfs outage flow during outages). GLHA promptly implemented the appropriate measures to timely respond, thus minimizing the duration of the excursion. As an interim measure, GLHA is also keeping a crest gate open at the Dam, to ensure that minimum flows are passed until GLHA is confident that the minimum flow system functions properly and will maintain the required flow during station outages. GLHA plans to update the Commission after the additional corrective measures are implemented and tested.

GLHA is not aware of any adverse impacts to fish or wildlife resources or water quality in the Penobscot River as the result of this flow disruption, and no additional incidents (safety, dam safety, public safety, security) resulted from this event. Resource agenciesⁱ did not provide any comments or concerns after being notified of this minimum flow excursion on May 13th.

Please feel free to contact me at (207-723-4341, x118) if you have any questions or comments.

Sincerely,



Kevin Bernier
Senior Compliance Specialist

cc: A. Zarrella, K. Maloney, J. Trudell, T. Wynn; GLHA
K. Howatt, M. O'Connor; MDEP
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ⁱ Maine Department of Inland Fisheries and Wildlife; Maine Department of Environmental Protection; United States Fish and Wildlife Service

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