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October 12, 2021

Board of Commissioners of Public Utilities  
Prince Charles Building  
120 Torbay Road, P.O. Box 21040  
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon  
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

**Re: Unit 3 Boiler Tube Failure  
Allowance for Unforeseen Items Notification**

### **Background**

The Holyrood Thermal Generating Station ("Holyrood TGS") is a thermal generating station providing a capacity of 490 MW on the Island Interconnected System. The Holyrood TGS consists of three thermal generating units; Units 1 and 2, each providing a capacity of 170 MW, and Unit 3, providing a capacity of 150 MW. Each thermal generating unit is supplied with steam generated by a dedicated boiler for each unit. Each boiler contains boiler tubes which carry high pressure steam throughout the boiler.

### **Unit 3 Boiler Tube Failure**

On September 11, 2021, while Newfoundland and Labrador Hydro ("Hydro") was in the process of returning Holyrood Unit 3 to service following a planned maintenance outage, the unit experienced a failure of boiler tube #5 on the unit's east waterwall. To fully understand the scope of the issue and determine steps for refurbishment, a specialized inspection probe had to be manufactured and delivered from the United States. Upon removal of the failed section for metallurgical analysis, it was determined that the mechanism of failure was corrosion fatigue of the boiler tube. Following the failure, Hydro initiated a targeted level 2 condition assessment of waterwall tubes based on the original equipment manufacturer recommendations.

Approximately 60 tube sections, totaling 180 feet of tube, have been removed to allow a specialized probe to be inserted to perform inspections. A specialized boiler tube inspection company has been engaged to complete these inspections. Following inspection of the boiler tubes, each tube removed must be replaced in kind. The number of tubes to be replaced may increase as a result of the findings from the inspection. Unit 3 cannot be returned to service until the refurbishment is complete and this unit is critical to the provision of reliable service for the upcoming winter season.

Hydro anticipates that the remaining inspections and replacement of the boiler tubes will take approximately 6–8 weeks to complete, and is currently targeting mid-November to return Unit 3 to service. This expenditure is estimated to cost \$1,800,000.

Ms. C. Blundon  
Public Utilities Board

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Should you have any questions, please contact the undersigned.

Yours truly,

**NEWFOUNDLAND AND LABRADOR HYDRO**



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Shirley A. Walsh  
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ecc: **Board of Commissioners of Public Utilities**  
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