

May 8, 2017

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: Newfoundland Power Inc. – 2017 Capital Budget Supplemental Application – Purchase and Construction of Improvements and Additions to Rose Blanche Hydroelectric Plant – Requests for Information**

Enclosed please find the original and plus nine (9) copies of NLH-NP-001 to NLH-NP-008 in relation to the above noted matter.

Should you have any questions, please contact the undersigned.

Yours truly,

**NEWFOUNDLAND AND LABRADOR HYDRO**

  
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Geoffrey P. Young  
Corporate Secretary & General Counsel

GPY/bds

cc: Gerard Hayes – Newfoundland Power

Dennis Browne, Q.C. – Consumer Advocate

**IN THE MATTER OF** the *Public Utilities Act*, (the "Act"); and

**IN THE MATTER OF** an Application by Newfoundland Power Inc. (the "Applicant") for: approval to proceed with the construction and purchase of certain improvements and additions to its property pursuant to Section 41(3) of the Act.

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**NEWFOUNDLAND AND LABRADOR HYDRO**  
**Requests for Information**  
**NLH-NP-001 to NLH-NP-008**

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NLH-NP-001 In the report "Rose Blanche Hydro Plant Turbine No. 1 Refurbishment", in Schedule C, Section 1.2, page 1, it is written *"On December 14, 2016, maintenance personnel were dispatched to the Plant to reset the unit following a trip due to high bearing temperature. The high bearing temperature resulted from the oil pump operating in DC mode as opposed to the normal AC mode."* Footnote 3 to this statement notes *"The DC mode is a backup mode in the event of failure of the AC power supply. It preserves oil flow to the bearings to prevent damage, and the lower than normal oil flow triggers a unit shutdown when the bearing temperature rises as a result."*

Is it known what caused the failure of the AC system that resulted in the unit running on the DC pump? Why doesn't the unit trip off line when the ac pump fails in order to prevent overheating, instead of waiting for the system to overheat before tripping?

NLH-NP-002 In the report "Rose Blanche Hydro Plant Turbine No. 1 Refurbishment", in Schedule C, Section 1.3, page 2, it is written *"In March 2016, the T1 runner had been subjected to an event where the runner had come in contact with the bottom seal ring. At that time, the T1 unit was operating in air when cooling water was lost to the runner band seal areas due to blockage in the cooling water supply line. This resulted in overheating and expansion of the components."*

Was there instrumentation in place that should have picked up the reduction in cooling water flow and caused the unit to trip before the seal and runner fused? If so, why did it not trip the unit?

NLH-NP-003 Was the runner removed at the time of the March 2016 incident? If so, was the keyway deformation noted at that time?

NLH-NP-004 Has an inspection of the bearings and journals been completed in order to verify that there is no damage after these events?

NLH-NP-005 Was the interference fit of the new bronze lower stationary seal the same or greater than the previous stainless steel seal?

NLH-NP-006 In the report "Rose Blanche Hydro Plant Turbine No. 1 Refurbishment", in Schedule C, Section 2.3, page 4, it is written *"To prevent future overheating of the mechanical components of the runner assembly, a new cooling water system supplying the seal areas, complete with dedicated flow switches, will be installed. In addition, a more sensitive non-contact shaft vibration monitoring system will be installed for improved protection of the unit."*


Will the new dedicated flow switches provide adequate protection to prevent the damage caused by the failure/blockage of the cooling water line from happening again?

NLH-NP-007 In the report "Rose Blanche Hydro Plant Turbine No. 1 Refurbishment", in Schedule C, Section 2.3, page 4, it is written *"To prevent future overheating of the mechanical components of the runner assembly, a new cooling water system supplying the seal areas, complete with dedicated flow switches, will be installed. In addition, a more sensitive non-contact shaft vibration monitoring system will be installed for improved protection of the unit."*

Should the existing vibration monitoring system have tripped the unit before damage to the shaft was incurred? If not, why did it not.

NLH-NP-008 Does the preventive maintenance of the unit involve completing shaft alignment measurements? If so, when was the last alignment completed and were the results within acceptable machine tolerances?

**DATED** at St. John's, in the Province of Newfoundland and Labrador this 8<sup>th</sup> day of May 2017.



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Attention: Board Secretary

TO: Newfoundland Power Inc.  
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Attention: Gerard Hayes, Senior Legal Counsel

TO: Dennis Browne, Q.C., Consumer Advocate  
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