

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF: THE PUBLIC UTILITIES ACT

- and -

IN THE MATTER OF: AN APPLICATION by NOVA SCOTIA POWER INCORPORATED
to approve CI C0080228 – HYD Hollow Bridge Generator
Refurbishment - \$2,587,170 (U&U)

INFORMATION REQUESTS

To: **Lana Myatt**
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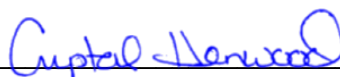
From: Board Staff
Nova Scotia Energy Board

Responses Due: Friday, January 9, 2026

Copies: 1 electronic copy (PDF searchable)

Contact Person: **Somesh Singh, P.Eng.**
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Issued at Halifax, Nova Scotia, this 12th day of December 2025.



Crystal Henwood, Clerk of the Board

Request IR-1:

Page 1 of the application notes that Nova Scotia Power Incorporated (NS Power) operates a comprehensive preventative maintenance program which includes inspections, condition assessments, and targeted maintenance to ensure safe and reliable hydro operations. The Hollow Bridge generator rotor and stator have been in service for decades and maintained under this program. Despite these efforts, an unforeseen stator fault occurred in September 2025, causing significant winding damage and forcing the unit offline. Testing confirmed widespread insulation degradation in both components, making partial repairs impractical.

- a) Please provide the estimated time to complete this repair.
- b) Please provide the power produced by the unit for the past ten years.
- c) Please provide a list of all work completed on Hollow Bridge generator since 2020, along with the associated cost and completion duration.
- d) What is the frequency of maintenance performed on the generator/rotor?
 - i. Who performs this maintenance.
 - ii. Please provide the maintenance documents for the past five years.

Request IR-2:

On PDF page 2 of Attachment 1, the report notes the requirement to maintain a balanced winding, particularly in parallel circuits, to avoid circulating currents. It explains that circulating currents can cause heating, which may lead to failure. The report also highlights that voltage unbalance can occur at the main terminals if a different number of coils per phase exists. The initial inspection identified failures in each of the three phases, which are marked on the drawings as “bad coil”.

On PDF page 4 of Attachment 1, the report states that during testing, the stator winding was found to be highly susceptible to moisture. NS Power installed heaters under the unit to help prevent moisture from interfering with the testing process.

On PDF page 5 of Attachment 1, the report notes that once all testing was completed, a total of 11 coils within the winding had either failed an insulation resistance test or a 11,700 V high-potential test. The report also includes a table showing which of the 24 coils would need to be bypassed in the winding to either remove defective coils from the circuit or restore balance to the winding.

- a) Please confirm whether the maintenance procedure includes testing circulating currents and voltage balances.

- 1 i. If yes, please provide supporting documents for the past five years.
- 2 ii. If not, please explain why, given its significance noted in the attachment.
- 3 b) Please confirm whether the windings were balanced and whether the maintenance
- 4 procedures include tests for this.
- 5 i. If yes, please provide supporting documents for the past five years.
- 6 ii. If not, please explain why, given its significance noted in the attachment.
- 7 c) When was the heater installed to help prevent stator moisture?
- 8 i. What triggered this installation? Please provide supporting documents.
- 9 d) Has the utility been unable to identify issues such as voltage unbalance and winding
- 10 imbalance noted in Attachment 1, which may have led to more damage than
- 11 expected? Please explain.
- 12 e) Do the 24 coils still need to be bypassed in the winding?
- 13 i. If yes, please explain the impact on the overall generator's health and rating.
- 14 f) Please list the specific scope of the project in terms of how many coils per phase are
- 15 being refurbished and how many are bypassed.