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Request IR-8:

- (a) What is the current status of Big Falls Unit 6 and whether it is operating at its expected capacity?
- (b) Please provide a list of all work completed on Big Falls Unit 6 since 2023, along with the associated cost and completion duration.

Response IR-8:

- (a) Currently, Big Falls Unit 6 is disassembled and out of service awaiting rotor pole refurbishment.

Prior to coming offline for rotor pole assessment, Big Falls Unit 6 was operating at full MW capacity. VAR output was temporarily limited as part of overheating troubleshooting to reduce heat.

- (b) Since 2023, the following major work has been completed on Big Falls Unit 6:

- CI C0056921 HYD BIF 6 Turbine Bearing Replacement
The turbine bearing replacement project was carried out between January and June 2023 at a total cost of \$389,558. The work included replacing the upper and lower guide bearings, cleaning the shaft journal and sump, and completing unit alignment to restore the mechanical integrity of Big Falls Unit 6.
- CI C0059785 HYD BIF 6 Exciter Refurbishment
The exciter refurbishment project was carried out between July 2023 and December 2024 at a total cost of \$282,122. The work involved refurbishing exciter

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1 components, including brush holders and control systems, and completing
2 commissioning activities to improve the reliability of the excitation system.

3
4 • Operational Work

5 Operational work was carried out between 2023 and 2025 at an approximate cost
6 of \$13,000. This work included slip ring and brush maintenance, troubleshooting
7 issues with the excitation system and breaker operations, and making minor
8 component adjustments. These activities helped support unit reliability but did not
9 resolve the underlying rotor insulation degradation.

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Request IR-9:

Please provide the following information about CI C0059785 HYD BIF 6 Electrical and Controls Upgrade (\$717,995) and CI C0056921 HYD BIF 6 Turbine Bearing Replacement (\$389,558) noted in the application.

(a) Was the unit offline during this refurbishment?

(b) Please provide the estimated time it took to complete this repair.

(c) When was the repair completed?

Response IR-9:

CI C0059785 HYD BIF 6 Electrical and Controls Upgrade was included in the 2024 ACE Plan as a project less than \$1 million. While the scoping and cost development was being completed in late 2023/early 2024, the project title was revised to align better with the intent of the CI to HYD BIF 6 Exciter Refurbishment and will be referenced by the new project title going forward. In addition to this title change, the total spend for this project was reduced to \$282,122, as outlined in IR-8.

(a) Yes, the unit was offline during both refurbishments.

(b) For CI C0056921, the unit was offline from late January 2023 to late June 2023, a total of 5 months. In July 2023, the unit came offline to replace the exciter. The exciter was sent out for refurbishment under CI C0059785 and was completed in approximately 17 months.

(c) Refurbishments were completed for CI C0056921 in June 2023. Refurbishments were completed for CI C0059785 in December 2024.

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Request IR-10:

In response to IR-2(b), the utility provided power produced by Big Falls 6 for the past several years. NS Power noted 2,366 MWh in 2023, 619 MWh in 2024, and 5,618 MWh in 2025 up to August. The energy produced by Big Falls Unit 6 was 6.39% in 2023, 2.56% in 2024, and 26.32% compared to Big Falls Unit 5, which is the same size as Unit 6.

(a) Please explain why Unit 6's generation has been so low compared to Unit 5 since 2023.

(b) Will this project return unit 6 to its operating capacity, similar to production in 2022?

(i) If not:

1. Does the utility have any plans for Unit 6 to reach its operating capacity, similar to its production in 2022?

2. How does the utility assess the economics of continued work on this unit if it will only produce a fraction of its operating capacity?

(c) What is the economic impact of the significant low energy production at Big Falls 6 compared to Unit 5?

Response IR-10:

(a) Big Falls Unit 6 was out of service for most of 2023, 2024, and 2025. As a result, Big Falls Unit 6's generation has been low compared to Unit 5 for that time period. Please refer to IR-8 (b) for further detail on these projects requiring unit outages.

(b) Yes, the unit was operating at rated MW capacity in early 2025 and is expected to do the same following the completion of this project. Additional testing of the stator will take

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place in early 2026 to assess the condition of the stator to ensure no further impact to reliability could be due to this asset.

- (c) The economic impact of the lower production at Big Falls Unit 6 compared to Big Falls Unit 5 is dependent on a number of factors, most importantly the amount of water / rain available in any given year. While Big Falls Unit 6 is unavailable, Unit 5 has been utilized more, whereas they typically would be swapped to have equal run time. For this reason, a direct comparison to Big Falls 5 is misleading as Unit 5 has been operating at a higher than regular run time with Unit 6's unavailability. For example, 2023 production total for Big Falls Plant (39,377 MWh) was 74% of 2022 and 92% of 2021 generation, even though Big Falls Unit 6 was essentially unavailable for that time period.

Year	Big Falls 5 (MWh)	Big Falls 6 (MWh)	Combined Generation (MWh)
2021	25,848	16,660	42,508
2022	25,249	27,884	53,133
2023	37,011	2,366	39,377

Seasonally (generally April to September), the Mersey River Hydro system adjusts production from all 12 units available (2 per plant) for generation down to 6 units (1 per plant - 'half river') based on water levels. During this time, the unavailability of Unit 6 would minimally impact economics. When other plants on the river would swap units on half river operation for equal run time, Unit 5 has continued to operate. Therefore, its energy production numbers are inflated due to Unit 6 not being available. In 2025, lower precipitation totals further reduced the need for both units for an extended part of the year, meaning the outage did not significantly affect overall operations.

Economic impact arises only when inflows exceed the available turbine capacity and water is spilled over the Big Falls spillway. In those conditions, Unit 6's outage can result in lost generation equal to the water that otherwise would have been converted to electricity by

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1 Unit 6. Based on the unit's rated capability and typical conversion efficiencies, the
2 maximum potential impact during sustained full river flow is estimated at approximately
3 \$10,000 / day of lost generation at Big Falls, subject to actual inflow and dispatch
4 conditions across the Mersey Hydro System. This estimate reflects the upper bound during
5 periods when spill occurs; when there is no spill, the economic impact is negligible because
6 water is fully utilized elsewhere in the system.

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Request IR-11:

In response to IR-3(a) and IR-4(c), NS Power stated that this generator has been offline for various operational issues and projects over the last several years and risk to the overall health of the generator is managed based on Asset Management principles, using information received through routine inspections, targeted assessments and feedback from Operations.

(a) Since 2023, please provide for each year a copy of the asset management assessments, along with all inspections and feedback, clearly showing that in 2023 only two rotor poles required refurbishment, while all other rotor poles required refurbishment only in 2025.

(b) Why did the utility not perform the refurbishment on the poles earlier, especially when the unit was offline for other projects?

Response IR-11:

(a) In 2023, the unit was undergoing a turbine bearing refurbishment project (CI C0056921). During disassembly for this project, it was noted that 2 rotor poles had been damaged. For this reason, these 2 refurbishments were necessary in order to return the unit to service. Visual inspections and insulation tests were completed at that time and did not identify any concerns. No documented assessments were completed at that time on the remaining poles, as no others had been damaged or showed indication of issues. This was a bearing refurbishment project therefore addressing electrical assets was not a part of this scope.

(b) The internal degradation is not visibly apparent and was not identified until it came offline in April 2025.