

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF THE PUBLIC UTILITIES ACT

- and -

IN THE MATTER OF an application by **NOVA SCOTIA POWER INCORPORATED** for approval of an **Authorization to Overspend** in the amount of \$8,201,086 on capital application project CI 50518 – HYD Ruth Falls Main Dam Refurbishment Project, increasing the Company’s request for Board approval of a total project capital cost of \$15,445,508

BEFORE: Steven M. Murphy, MBA, P.Eng., Member

APPLICANT: **NOVA SCOTIA POWER INCORPORATED**

FINAL SUBMISSIONS: April 8, 2025

DECISION DATE: **June 18, 2025**

DECISION: The Authorization to Overspend application will be held in abeyance until NS Power receives the *Fisheries Act* Authorization from the Department of Fisheries and Oceans. Once the *Fisheries Act* Authorization is obtained, NS Power can file an amended application, which must be accompanied by a Net Present Value analysis comparing the preferred refurbishment option to the decommissioning option.

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1.0 INTRODUCTION

[1] On October 11, 2024, Nova Scotia Power Incorporated (NS Power) filed an Authorization to Overspend (ATO) application for Board approval in the amount of \$8,201,086. This ATO is related to CI Number 50518 - HYD Ruth Falls Main Dam Refurbishment Project, originally approved by the Board in NS Power's 2019 Annual Capital Expenditure (ACE) Plan, Matter M08984 in the amount of \$7,244,422. NS Power now estimates the project will cost \$15,445,508; a 113.2% cost increase compared to the original amount approved by the Board.

[2] The Board determined that this matter would be conducted by way of a paper hearing and issued a Hearing Order on October 21, 2024, setting out a timeline for Information Requests (IRs), filing of evidence and written submissions. Notices of Intervention were received from the Small Business Advocate (SBA), the Consumer Advocate (CA) and the Industrial Group.

[3] On December 3, 2024, NS Power responded to IRs from the SBA, CA, Industrial Group, Board staff, and Board Counsel consultants, Midgard Consulting Inc. (Midgard). Evidence was filed by Midgard on December 17, 2024, which was subsequently amended and filed on January 13, 2025. NS Power submitted its Reply Evidence on March 18, 2025. Written closing submissions were filed on March 25, 2025, and NS Power filed its reply submissions on April 8, 2025.

[4] This matter began as a filing with the Nova Scotia Utility and Review Board (NSUARB). On April 1, 2025, on proclamation of the *Energy and Regulatory Boards Act*, S.N.S. 2024, c. 2, Sch. A, the Utility and Review Board was succeeded by the Nova Scotia Energy Board for all applications related to electric utilities.

1.1 Project Background

[5] In 2015, NS Power engaged Kleinschmidt as a consultant to assess the design adequacy of NS Power's Sheet Harbour Hydro System's water retaining structures. The assessment evaluated the structures' stability under normal conditions, ice loading, inflow design flood (IDF) scenarios, and post-earthquake conditions, as well as their ability to safely pass design floods. Drainage from the Sheet Harbour Hydro System flows into Marshall Falls Reservoir, which serves as the primary storage reservoir for two downstream hydroelectric generating stations at Malay Falls and Ruth Falls. In April 2016 Kleinschmidt submitted its report titled "2015 Sheet Harbour Hydro System Dam Safety Review" to NS Power.

[6] The current ATO application is related to the Ruth Falls hydroelectric system, which contains three generating units with a total capacity of 7.2 MW. The physical structure of the Ruth Falls Dam includes the main and wing dams, each standing 32.8 feet high, as well as a spillway spanning 1,190 feet. The dam's power canal is 8,000 feet long, with an exposed area of 30,795m².

[7] The Kleinschmidt report highlighted deficiencies in the Ruth Falls main dam that required corrective action. As such, NS Power created a project to address the deficiencies, and requested Board approval of the project in the 2019 ACE Plan for \$7.2 million. This approval was subsequently granted by the Board. The current ATO application reflects an approximate \$8.2 million increase from the originally approved amount, primarily due to increased environmental permitting requirements, an extended construction timeline, and expenses associated with archaeology and Mi'kmaq engagement.

2.0 EVIDENCE AND SUBMISSIONS

[8] One of the three primary reasons identified by NS Power in the ATO application for the project cost variance is related to additional environmental permitting requirements. Out of the total \$8.2 million ATO request, the Utility noted that

... \$4.4 million are directly attributable to the additional work required to obtain the necessary environmental permits from Fisheries and Oceans Canada (DFO), Nova Scotia Department of Environment and Climate Change (NSECC), as well as an authorization in accordance with Transport Canada's Navigation Protection Program to temporarily lower the Ruth Falls Reservoir by approximately 18 feet while constructing the new dam.

[Exhibit N-1, p. 2]

[9] In February 2018, the Federal government introduced Bill C-68, *An Act to amend the Fisheries Act and other Acts in consequence*. Bill C-68 underwent three readings between February 6, 2018, and June 20, 2018 before it was given Royal Assent in June 2019. The changes were extensive. NS Power noted that the requirement to obtain a *Fisheries Act* Authorization (FAA) from the federal Department of Fisheries and Oceans (DFO) for the Ruth Falls projects resulted from these changes to the *Fisheries Act*.

[10] In its 2019 ACE plan, NS Power submitted the Ruth Falls main dam project cost for Board approval. At that time the Company had not yet obtained any of the required project regulatory permits, as the project was still in the preliminary design phase. This approach is not uncommon, as these permits are typically obtained after preliminary engineering is complete for a selected project option.

[11] In December 2019, NS Power submitted a review request to DFO for its proposed Ruth Falls main dam refurbishment work. In March 2020, the Utility received a response from DFO outlining significant additional work required based on DFO's conclusion that the proposed activities were likely to harm fish and fish habitat,

necessitating an FAA under the new *Fisheries Act*. In response, NS Power submitted an FAA application to DFO in June 2020.

[12] The Utility subsequently received four “incomplete” submission letters from DFO between August 2020 and September 2023, each requesting additional information from NS Power. According to NS Power, each letter contained requests and requirements that had not been requested in earlier DFO correspondence. NS Power’s most recent FAA submission was on February 28, 2025, following DFO’s latest email from June 2024. As of the date of this decision, the Board is not aware whether NS Power has obtained an FAA for this project.

[13] NS Power stated that the original Ruth Falls main dam project cost estimate was developed based on the permitting requirements known at the time of the 2019 ACE plan submission. The 2019 ACE Plan was filed with the Board on November 29, 2018, and was subsequently approved on May 1, 2019, before the modernized *Fisheries Act* received Royal Assent in June 2019. NS Power stated, therefore, that the need for an FAA was unforeseen at the time of its 2019 ACE application. As such, the Company asserts that the need for an FAA, driven by the 2019 amendments to the *Fisheries Act* and changing regulatory expectations, added substantial costs to the project.

[14] Another reason cited by NS Power in the ATO application for the project cost variance relates to the extended construction timeline. The extended construction timeline is mainly a result of the work required to address additional environmental permitting needs. NS Power noted that the project costs included in the 2019 ACE Plan were established in 2018. However, as a result of the additional permitting requirements,

construction is now deferred to 2025 and 2026. In the ATO application, out of the total \$8.2 million ATO request, the Utility noted that:

As a result of the additional work required to address environmental permitting requirements, the construction timeline was extended leading to increased project costs of approximately \$2 million.

[Exhibit N-1, p. 3]

The cost increase associated with the extended construction timeline includes both increased labour and materials expenses.

[15] The final reason noted by NS Power in the ATO application for the project cost variance is related to archaeology and Mi'kmaq engagement. Out of the total \$8.2 million ATO request, the Utility identified costs of approximately \$0.4 million for this issue.

[16] In its 2019 ACE Plan application, NS Power allocated \$2,256 for project archaeological costs. In the ATO application, NS Power has increased that cost to \$250,361. NS Power attributes the increase to the reservoir's high potential for impacting archaeological resources. This was not identified in the 2019 ACE Plan and only recognized after the completion of a desktop Archaeological Resource Impact Assessment for the Ruth Falls headpond in 2023.

[17] In this ATO application, NS Power also increased Mi'kmaq engagement costs for the project from \$76,002 (per the 2019 ACE Plan) to \$228,107. The Utility noted that the increased cost is:

...required to cover additional monthly KMKNO capacity payments as a result of the project's extended timeline and service of the Mi'kmaq observer as a result of evolving expectations.

[Exhibit N-3, CA RIR-13(b), pp. 2-3]

[18] The remaining \$1.4 million variance in the current ATO application is attributed to contractor administrative overheads (labour, contractor), Allowance for Funds Used During Construction and contingency. NS Power increased the project

contingency amount from the \$842,715 amount identified in the 2019 ACE Plan to \$1,342,714. The Utility noted that the original contingency amount remains unchanged, however additional contingency has been added to cover uncertainty around the amount of habitat offsetting costs required by DFO, which has yet to be confirmed and has the potential to vary significantly.

[19] Midgard evaluated NS Power's ATO application in the context that in requesting the ATO, NS Power must show that it acted prudently and with due diligence and that the project remains economically justified and in the best interests of customers. Midgard's evidence provided its analysis and conclusions for each cost variance category listed by NS Power, including environmental permitting requirements, extended construction timeline and archaeology and Mi'kmaq engagement. In addition, Midgard also provided its analysis on overspending amounts by cost category along with project economics consideration.

[20] Midgard reviewed NS Power's December 2019 submission to DFO for the proposed Ruth Falls main dam refurbishment project. Midgard confirmed that the work scope outline in the submission aligned with the scope of work proposed in the 2019 ACE application. Midgard further concluded that:

...the changing context of the Fisheries Act and resulting consequences on NS Power's Project execution process has imposed significant costs on NS Power, and ultimately on its ratepayers.

[Exhibit N-8, pp. 13-14]

In Midgard's opinion, the related project cost increases represent an appropriate investment to secure compliance with the amended *Fisheries Act*.

[21] Midgard also found that the project labor cost increases related to the extended construction timeline are reasonable. Further, while Midgard found that the

Utility did not provide clear information distinguishing material cost increases due to the extended construction timeline and additional scope, Midgard ultimately concluded that:

...the overall increase in material costs (93%) is in line with the overall cost increase for the Project as a whole (113%) and therefore does not on its face appear unreasonable.

[Exhibit N-9, p. 33]

[22] Midgard noted that NS Power provided explanations about why the appropriate project archaeological cost was not included in the original 2019 ACE Plan application. Midgard's analysis indicated that at the time of the 2019 ACE Plan submission, NS Power suggested it was not aware of the high potential for archaeological resources in the headpond. Further, while the Utility acknowledged that excluding these costs was an oversight, it suggested that even if they had been included, they would have been immaterial relative to the overall project cost.

[23] In Table 6 of its Evidence, Midgard compared the estimated Ruth Falls project archaeological costs to NS Power's recent archaeological costs on other Utility capital projects. Midgard concluded that the archaeological costs estimated in the Ruth Falls ATO are not overstated and are in line with previously estimated amounts for the Tusket Main Dam and Gaspereau Main Dam projects. Furthermore, Midgard stated that a failure by NS Power to account for \$248,105 in the original 2019 ACE Plan would not have materially affected the outcome of a decision on this capital expenditure. However, given NS Power's recent experience with similar dam refurbishment projects, it is Midgard's opinion that at the time of the 2019 ACE Plan submission, NS Power should have been aware that archaeological costs for the Project would be several orders of magnitude higher than its estimated figure of \$2,256.

[24] As it relates to estimated Mi'kmaq engagement costs for the project, Midgard noted that NS Power should have known at the time of its 2019 ACE Plan submission that its archaeological costs were underestimated, which could be considered to include the need for a Mi'kmaq observer of that archaeological work. However, Midgard also stated that the magnitude of these costs is unlikely to have materially affected the outcome of the original decision.

[25] Midgard also analyzed potential variability in NS Power's estimated project contingency amount, considering significant potential variance in fish habitat offsetting requirements. Midgard supports NS Power's inclusion of an additional \$500,000 contingency for offsetting requirements as a prudent measure to address regulatory uncertainty. Midgard also concluded that the proposed increases in project-related administrative overheads and Allowance for Funds Used During Construction appear valid and reasonable.

[26] In the 2019 ACE Plan, NS Power presented five options to address refurbishment of the Ruth Falls main dam, spillway and sluiceway. The Utility selected the option that was \$500,000 less expensive than the others. This option, known as Option 4, involves removing the existing stoplog bays and installing rubber dams on the left portion of the dam, looking downstream, and installing an uncontrolled overflow spillway and rubber dams on the right portion of the dam. The existing sluiceway gates, located in the central portion of the dam, are to be replaced with screw stem vertical lift gates. In the current ATO application, NS Power did not re-examine the options for suitability and cost, and continued to indicate that Option 4 is the preferred solution for the project.

[27] In response to Board staff IR-7(a), NS Power asserted that it did not need to re-evaluate the dam refurbishment options as part of the ATO application:

Re-evaluation was not necessary as all five options considered would have the same cost increases as a result of increases in costs associated with environmental permitting. A Fisheries Act Authorization with the same conditions would be required regardless of the option selected. All five options would also see increases in costs as a result of the deferral of construction and the construction cost differences between the five options remains the same.

[Exhibit N-6, Response to Board Staff IR-7(a)]

In addition, each of the options considered by NS Power requires the drawdown of the headpond, which is the main driver of increased permitting requirements and related costs. Due to constructability and safety related concerns, NS Power did not consider any refurbishment options that would negate the need for a drawdown.

[28] NS Power also noted the following:

The Company has not considered selling or decommissioning the Ruth Falls Generating Station. Ruth Falls is included in small hydro capacity and is a part of the path to achieve 2030 legislated requirements.

[Exhibit N-4, Industrial Group RIR-4(b)]

The Company further stated that its 2020 Integrated Resource Plan (IRP) supports the continued capital sustaining investments in its small hydro systems over the 25-year planning horizon.

[29] Midgard analyzed NS Power's IR responses about why it did not re-evaluate the other refurbishment options as part of the ATO application. Midgard provided the following conclusion:

NS Power's justification for not considering an alternative that did not require drawdown of the headpond appears reasonable. Therefore, the "repair or replace" alternatives considered by NS Power are appropriate.

However, despite Project costs increasing by 113% and \$8.2M, NS Power has not re-evaluated its decision to not consider a decommissioning option. Midgard understands the stated justifications for this (that the Project is a part of NS Power's plans to meet its legislated requirements and its IRP), however presumably this assertion is not true at any cost. As such, Midgard would suggest that the NSUARB should have been afforded the ability as part of this proceeding to evaluate whether a decommission option would be in the best interest of NS Power's ratepayers. Given the extreme decommissioning cost options that have been presented in other recent proceedings it is likely that such an option

would not be considered economic by NS Power. Again, Midgard suggests that is a decision and outcome that should be put before the NSUARB for review and approval.
[Emphasis in original]

[Exhibit N-9, pp. 54-55]

[30] Midgard also highlighted other potential project cost increases that should be considered. Specifically, Midgard raised concerns that the project remains exposed to potential further cost increases associated with environmental compensation, archaeological risks, and geotechnical risks. Midgard noted that these have the potential to cause additional project cost overages beyond the contingency allowances and Class 1 cost estimate error bounds currently forming NS Power's project cost estimate.

[31] Midgard noted that for environmental compensation considerations, the potential habitat offsetting requested by DFO in its June 6, 2024, email could be as high as 57,500 m². Based on feedback from DFO, NS Power revised the project offsetting requirement from the original 2,700 m² to 20,000 m². Using a rate of \$25/m², the Utility allocated a budget of \$500,000 for offsetting and added an additional \$500,000 as contingency. This adjustment allows for a total offsetting of 40,000 m², should additional offsetting be required. However, Midgard noted that NS Power's own estimate of the unit cost of offsetting works was higher than the unit rate of \$25/m² used in the ATO application. The \$25/m² rate was, in fact, suggested by DFO since this rate was used by NS Power on a previous project. Midgard noted that it is not clear why NS Power now believes that the unit rate suggested by DFO is more appropriate for the Project than its original estimate.

[32] Midgard also stated that the updated archaeological cost budgeted in the ATO application aligns with the allocations originally estimated for NS Power's Tuskett

and Gaspereau projects. However, the ultimate expenditures for Tusket and Gaspereau amounted to 5.8 times and 33.7 times their initial estimates, respectively.

[33] Midgard noted that geotechnical issues have only been explored to a limited extent on the project to date. Midgard highlighted that geotechnical issues are the main factor behind millions of dollars in cost overruns for the Tusket Falls main dam project.

[34] In its Reply Evidence, NS Power provided information related to the additional project work scope items. It noted that some cost categories were introduced in the ATO application that were not present in the original application's Detailed Cost Estimate. These changes resulted from updated price bids, and an improved understanding of cost allocation thereby dividing expenses into material and contractors on a 40/60 ratio. The Utility also presented a cost-saving table showing a \$556,000 reduction from the original material cost estimate. This savings was achieved in 2019 by procuring material through a Request for Proposal process and selecting the lowest proposal.

[35] With regards to updated archaeological cost estimates, NS Power stated that Midgard did not present any evidence indicating that current estimates are too low, other than noting that NS Power underestimated the costs in its original application. In fact, NS Power noted Midgard's statement that the current archaeological cost estimates are not overstated and are in line with costs for other projects. NS Power also noted that the revised costs are a result of ongoing collaboration with the Mi'kmaq of Nova Scotia on hydro capital refurbishment projects, changing expectations for archaeological protection both from the Mi'kmaq and NS Communities Culture, Tourism and Heritage,

and lessons learned from recent hydro capital refurbishment projects that included an extended drawdown.

[36] In response to Midgard's evidence related to further potential cost increases for the project, NS Power noted the following:

- The revised habitat offsetting plan aligns with the guidance provided in DFO's email dated June 6, 2024. An updated submission was subsequently made on February 28, 2025. Furthermore, NS Power noted that it understands DFO will re-initiate Crown Consultation with the Mi'kmaq on NS Power's updated submission prior to issuing the FAA for the project. NS Power stated that it continues to engage with the Mi'kmaq on the updated information to address interest and concern separately from the Crown Consultation process.
- With respect to archaeological costs, NS Power said that it has been working collaboratively with Mi'kmaq representatives and the NS Department of Communities, Culture, Tourism and Heritage to develop an archaeological plan for the drawdown and has provided this plan to DFO and the Mi'kmaq.
- With respect to geotechnical issues, the Utility stated that no excavation work is planned for modification to the east dam abutment. While some excavation work will be necessary to the downstream retaining wall at the west abutment, NS Power stated that its engineering design consultant determined that a geotechnical investigation program would not provide additional information to inform the design.

[37] NS Power's Reply Evidence also addressed Midgard's concerns that the option of decommissioning the Ruth Falls main dam was not considered. This option

would encompass all essential activities required to remove the hydro system and return the watershed to a natural flow pattern. NS Power submitted its Hydro Asset Study to the Board in 2018 detailing decommissioning costs, broken out into four primary categories: physical removal, environmental, sedimentation and archaeology.

[38] The Company's Reply Evidence provided an estimated decommissioning cost for the Ruth Falls main dam of \$81.6 million, based on the 2018 Hydro Asset Study. Based on more recent work completed by the Utility, the estimated decommissioning cost has increased to \$84.5 million. NS Power indicated that any decommissioning activities would occur over an 11-year period from 2025 to 2035. It also provided a decommissioning cost breakdown into 12 categories, accompanied by an explanation of how the related costs were estimated.

[39] In summary, NS Power's Reply Evidence stated there has been no evidence put forth by parties to indicate the Company's proposed refurbishment project is not the lowest cost alternative for customers. The Utility noted that while the costs associated with the project have increased since the time of the original application, the updated costs are prudent and are required to put the asset into service.

[40] In its submissions, the SBA acknowledged the challenge of providing a reasonable project cost estimate, but noted that in its 2019 ACE Plan, NS Power should have raised the potential cost impact that could arise due to changes in the *Fisheries Act*. The SBA expressed concerns about the uncertainty surrounding DFO's outstanding approval of an FAA and its potential impact on further delays and increased project costs. The SBA, therefore, requested that NS Power provide ongoing project status updates

and submit an updated ATO once the Utility has received full approval from the DFO to proceed.

[41] The SBA also raised concerns about the inadequate allocation of funds for archaeological work in the original application, considering NS Power's past experience with cost overruns in this category. The SBA requested additional justification from the Utility explaining why it believes the allocation of costs in this ATO is sufficient, given NS Power's own acknowledgment that the archaeological work for the project remains incomplete. Finally, the SBA submitted that cost must also be a primary factor in the consideration of the decommissioning option. To gain a clearer understanding of the potential costs and benefits of decommissioning, the SBA submitted that NS Power be required to file an updated Hydro Asset Plan in the near future.

[42] The CA submitted that the project costs appear reasonable, but highlighted NS Power's under-accounting for the archeological expense at the time of the original 2019 ACE Plan. He recommended that the Board direct NS Power to undertake a review of its budgeting processes for archeological work in view of the evolving regulatory environment and the need to fully consult and engage with Indigenous peoples. Further, the CA raised concerns about the decommissioning option, noting that neither the Board nor intervenors have had an opportunity to question the factual assertions upon which NS Power's claim about decommissioning are based. The CA noted that NS Power's conclusion about the decommissioning option should not be reached without careful examination by the Board and the parties. As such, the CA recommended that the Board direct NS Power to include a decommissioning option in any future application regarding similar facilities.

[43] In its submissions, the Industrial Group disagreed with NS Power that it could not have anticipated the *Fisheries Act* Authorization costs at the time of the original 2019 ACE Plan. The Industrial Group went further and suggested that NS Power was imprudent in preparing its original application and in advancing the capital project forward. The Industrial Group noted that Bill C-68 related to the modernized *Fisheries Act* was introduced on February 6, 2018, and completed its third reading on June 20, 2018. The original application for this project was submitted in November 2018. Although the Industrial Group acknowledged that Royal Assent for Bill C-68 was granted in June 2019, it argued that NS Power should have accounted for these changes and their potential cost implications when evaluating the project's economic justification. In addition, the Industrial Group referenced Midgard's response to Industrial Group IR-8 that, at the time, there was significant published public information relating to the potential changes to the *Fisheries Act* and that the Board and stakeholders should have similarly been made aware of these impending changes and their implications for the project application.

[44] The Industrial Group also submitted that NS Power did not act diligently in advancing project permit applications to the Nova Scotia Department of Environment and Climate Change (NSECC) and DFO. It asserted that a significant project delay occurred, in part due to NS Power's lack of diligence. The Industrial Group highlighted that NSECC's approval ultimately took 4.5 years to obtain. The Industrial Group asserted that this delay was partly due to the NS Power providing incomplete information during submissions, failing to anticipate issues unless raised by NSECC, and shifting project execution to a phased approach, which necessitated multiple filings and extended the timeline. Furthermore, the Industrial Group noted that NS Power submitted an FAA for this project

over a year after the Board's approval. More recently, NS Power submitted an updated approval package to DFO in February 2025.

[45] The Industrial Group stated that

Viewing the evidence as a whole, NSPI acted imprudently by not including the costs of the FAA within its initial application. Either it made a deliberate decision to not include those costs thereby under-representing the costs of the project, or was willfully blind to the impact of the *Fisheries Act* provisions and amendments. Either way, the impact of this imprudence should not rest with ratepayers.

[Industrial Group Closing Submission, p. 12]

[46] The Industrial Group's submissions also disputed NS Power's claim that project cost increases associated with environmental permitting affected all five refurbishment options equally. It stated that NS Power failed to complete any updated economic analysis of the project and declined to do so through the IR process. This is despite receiving questions from the CA, SBA, Board staff and the Industrial Group regarding the economic assessment of Option 4 being the lowest cost option.

[47] The Industrial Group agreed with Midgard's findings that, although the current estimated project archeological costs now align with the original estimates from other hydro capital projects at Gaspereau and Tusket, there is a risk of a significant future increase in archaeological costs, as the initial estimates for Gaspereau and Tusket were considerably underestimated. Given the risk of a significant increase in archeological costs, the Industrial Group underscored the need for an economic assessment and perhaps even an alternative that is more cost-effective while offering longer-term benefits.

[48] The Industrial Group also agreed with Midgard that decommissioning information ought to be considered to assess whether the proposed refurbishment project and related ATO is the best option for ratepayers. It noted that NS Power provided an estimate for decommissioning only in its Reply Evidence, and only after Midgard emphasized the importance of the Board reviewing the decommissioning option. The

Industrial Group stated that NS Power's decommissioning estimate of \$84.5 million provided limited details on how this was calculated, and given the time when this was produced, there has been no opportunity for IRs.

[49] The Industrial Group argued there is insufficient evidence to show that the project remains in the best interest of ratepayers. As such, the Industrial Group recommended that the ATO not be approved as filed, particularly given that the FAA permit has not yet been obtained and that there may be additional related requirements. Instead, the Industrial Group suggested that NS Power could resubmit the application once a more thorough analysis of the alternatives can be assessed. Alternatively, the Board could place the application in abeyance, pending submission of additional information.

[50] In its reply submissions, NS Power agreed with the CA's recommendation to review its budgeting process for archaeological work. Going forward, the Company said it will consider its broader hydro fleet and lessons learned concerning the potential for requirements and costs to change significantly in relation to archaeology.

[51] NS Power's reply submissions also addressed the CA's recommendation for NS Power to include a decommissioning option in any future application regarding similar facilities. NS Power stated that it considered decommissioning on a preliminary basis at the time of the 2019 ACE Plan, but the initial cost estimates for this option were considerably higher than other options. Therefore, NS Power determined that decommissioning costs would be orders of magnitude higher than the potential five refurbishment options. Nonetheless, NS Power recognizes the interest that parties have regarding the evaluation of decommissioning options in various hydro proceedings. As

such the Utility committed to providing decommissioning costs in future hydro applications, as applicable.

[52] With regards to the Industrial Group's submissions about NS Power's prudence in conducting this project, NS Power submitted that there is a base assumption of prudence, which can then be challenged by intervenors through the submission of evidence on reasonable grounds, at which point the burden shifts back to NS Power to establish prudence within their Reply Evidence. Furthermore, the Company noted that if the parties need specific evidence or essential information to be analyzed and considered in an application, they should request it during the IR process or submit relevant evidence rather than introducing the issue for the first time in their submissions.

[53] NS Power's reply submissions also addressed the Industrial Group's concern about whether Option 4 continues to be the most cost-effective project choice for customers. It noted that:

... Option 4 was the lowest cost option because it required the installation of screw stem vertical lift gates only on the central portion of the dam, which included three gates in total. This can be compared to Options 1 through 3, which required replacement of either half or all of the stoplog bays with screw stem vertical lift gates. For context, there are 33 stoplog bays in total at the Ruth Falls site. Option 4 also presented the lower cost option when compared to Option 5, which involved a complete dam replacement. When making the ATO application, NS Power determined that Option 4 remains the lowest cost option for customers, as the other four options would experience greater exposure to escalating costs of materials due to the higher number of bays being replaced by steel gates.

[NS Power Reply to Closing Submission, pp. 5-6]

[54] NS Power further stated that the "do nothing option" may have avoided additional costs associated with the revised DFO requirements. However, it was not originally acceptable and remains unacceptable due to the dam safety concerns. In addition, the Company noted that the extra work required for the project is not the result of changes to the original project scope, purpose, or construction methods. Instead, the

new scope items are related entirely to DFO requirements, so changes to the project cost and timeline would apply to all refurbishment options, as drawdown is the primary driver of the environmental permitting requirements.

[55] NS Power also submitted that it acted prudently in submitting the original refurbishment application in the 2019 ACE Plan for Board approval to address safety concerns. It emphasized that the *Fisheries Act* amendments were granted Royal Assent seven months after the application's submission, making it unreasonable to factor the pending legislation into estimates without fully understanding its impact. It noted that DFO had to adjust to the new legislation requirements, and the shifting nature of those adaptations created a moving target for the Utility. This, in turn, influenced the timeline for solution development and ultimately increased the project costs. NS Power also referenced Midgard's report, affirming that Midgard's review of the evidence suggests that in general the Utility was responding appropriately and promptly to NSECC and DFO requests.

[56] NS Power also submitted that DFO requirements for FAA permits would apply to both the refurbishment and decommissioning projects. It further emphasized that the high-level decommissioning cost estimate of \$84.5 million is 5.5 times the refurbishment cost of \$15.45 million post-ATO and does not account for the expenses related to the generation loss. In addition, the Utility noted that Appendix A to NS Power's Reply Evidence describes where the decommissioning estimates originated.

[57] With regards to archaeological cost estimates, NS Power acknowledged that while the expenses allocated in the original application were low, they were reasonable given the expected scope of archaeological work at the time. The Company

submitted that the costs outlined in the ATO application reflect an updated approach, incorporating revised estimates.

[58] In considering the Industrial Group's recommendation to deny the ATO approval, NS Power explained that DFO have confirmed that NS Power's February 28, 2025, submission addresses the outstanding information requested in its correspondence to NS Power in June 2024, and the FAA application is proceeding with continuing consultation with the Mi'kmaq of Nova Scotia. In addition, the Utility noted that delaying the ATO process to accommodate the conclusion of the FAA permit process could present additional risks to fish management and public safety.

[59] With respect to the SBA's submissions, NS Power stated that it will commit to providing decommissioning costs in future hydro applications, as applicable. It also stated that within its upcoming Depreciation Study it will update two aspects of the 2018 Hydro Asset Study: a Hydro System Decommissioning Study Update and a Hydro Asset Archaeological Program 2024 Revised Costing Report. The Utility also agreed to submit an updated Ruth Falls project plan addressing DFO requirements and to provide an update to the Board upon receiving the project's FAA approval.

[60] In response to the SBA's submission that the ATO application should potentially be paused, the Utility acknowledged the SBA's concern and advised that part of the reasoning behind the timing of this application was to allow the Company to achieve sufficient progress regarding the requirements of DFO and the resulting updated project cost.

3.0 ANALYSIS AND FINDINGS

3.1 Prudency

[61] In this ATO application, NS Power stated that following submission of its 2019 ACE Plan for Board approval, the Company was required to obtain an FAA from DFO. Specifically, NS Power submitted a request for DFO review in December 2019, after which, in March 2020, DFO determined that an FAA would be required. Midgard supported this assertion, finding that NS Power was acting reasonably in expecting that, at the time of its original ACE Plan filing, an FAA would not have been required. In addition, in response to the Industrial Group's IR-3(b), NS Power stated that it did not reapply for Board approval of an ATO until cost certainty as impacted by increased environmental regulatory requirements, was achieved.

[62] Section 10 of NS Power's Capital Expenditure Justification Criteria (CEJC) outlines the requirements for an ATO approval. While it grants the Utility the discretion to determine when to request Board approval, it explicitly states that an updated economic analysis, if applicable, is one of the documents that must be filed with the ATO application. Further, the burden of proof for approval of the ATO rests with NS Power, which must produce sufficient evidence that it has acted prudently in its application and execution of the capital project, and that the proposed project is in the best interest of ratepayers.

[63] In reviewing the timing of the 2019 ACE Plan proceeding and evolution of the modernized *Fisheries Act*, the Board agrees with Midgard that it was reasonable for NS Power's 2019 ACE Plan to expect that an FAA would not be required for the Ruth Falls main dam refurbishment project. As such, the Board finds that there was no imprudence related to unaccounted FAA related costs in NS Power's original 2019 application for the project.

[64] The Board also agrees with Midgard that NS Power was acting reasonably and prudently in its interactions with NSECC and DFO in working through the FAA process. This process has taken a long time, and as of the date of this decision, NS Power has not confirmed with the Board that the final FAA has been obtained. Nonetheless, while it may be true that the delay in receiving the FAA is partly due to NS Power providing incomplete information to NSECC and DFO in its submissions, the Board finds that this is not the result of the Company acting imprudently. The Board's review of the record in this proceeding finds that the delay is primarily related to changing DFO requirements over time, as DFO itself had to adapt to how the new *Fisheries Act* was to be applied. As NS Power noted, this continued uncertainty after the legislation came into effect presented a 'moving target', which drove the timeline for solution development and ultimately increased the project cost. The Board, therefore, finds that NS Power acted prudently in waiting to file its ATO application.

3.2 Preferred Refurbishment Option

[65] In approving NS Power's 2019 ACE Plan, the Board agreed with NS Power that Option 4 was the preferred and most economic refurbishment alternative for the project. As noted above, NS Power's CEJC explicitly states that an updated economic analysis, if applicable, is one of the documents that must be filed with the ATO application. In this case, NS Power did not update its 2019 economic analysis comparing the costs of the five dam refurbishment options considered by the Company. NS Power claimed that it did not need to provide this update, as it asserted that all five options would have the same cost increases resulting from the FAA and the extended construction timeline. The Company also stated due to constructability and safety related concerns, it did not consider any refurbishment options that would negate the need for a drawdown.

[66] Midgard concluded that NS Power's justification for not considering an alternative that did not require drawdown of the headpond appears reasonable. As such, Midgard found that refurbishment alternatives considered by NS Power are appropriate. Further, while arguments have been presented, no other parties in this proceeding have presented evidence to undermine NS Power's reasoning and rationale for not updating its economic analysis of the dam refurbishment options. The Board, therefore, accepts NS Power's reasons for not requiring an updated economic model for the refurbishment options. The Board also finds that Option 4 remains the preferred refurbishment option to address dam safety concerns.

3.3 Approval of Refurbishment Project Costs

[67] The Board recognizes that the current ATO application represents a significant cost increase compared to the original Board-approved project cost. However, Midgard concluded that project cost increases related to environmental permitting and the FAA represent an appropriate investment to secure compliance with the amended *Fisheries Act*. Midgard also found that the estimated project labour cost increases related to the extended construction timeline are reasonable. Further, while Midgard noted that the Utility did not provide clear information distinguishing material cost increases, it found that the estimated project materials cost increases resulting from the extended construction timeline were not unreasonable.

[68] This notwithstanding, Midgard identified three key risk areas still affecting the project: environmental compensation costs, archaeological costs, and geotechnical costs. These risks were also highlighted by the intervenors in their submissions. As noted by Midgard, these factors could potentially add millions of dollars to the total project cost, surpassing the contingency allocation of \$1.34 million in the application. In its Reply

Evidence, NS Power's stated that it is addressing these risk factors through engagement and collaboration with environmental regulators and external stakeholders. While the Board is encouraged by these efforts, it acknowledges that the Utility has little control over the actions and requirements of those regulators and stakeholders.

[69] Additionally, NS Power has allocated \$500,000 in its contingency to cover uncertainty around the amount of habitat offsetting costs required by DFO. However, this cost was developed using a rate of \$25/m² suggested by DFO instead of NS Power's own originally proposed higher rate. The Utility has not provided any clarification on why it did not use its own figures. Further, the ATO application allows for total offsetting of 40,000 m² at a unit rate of \$25/m². If this unit rate is replaced by the Utility's initially higher estimate, the project would face a significant increase in cost based on this risk alone. This also does not account for the cost risk associated with the potential for a higher required offset area amount, as referenced in DFO's June 6, 2024, email.

[70] As mentioned above, as of the date of this decision, the Board is not aware whether the FAA has been granted for this project. The Utility stated that communication received from DFO on February 28, 2025, confirmed that the outstanding issues identified in its June 2024 email have been addressed. However, NS Power's reply submission noted that before the FAA is issued, DFO must consult further with the Mi'kmaq of Nova Scotia regarding potential points of interest and concern related to NS Power's most recent submission. In the Board's opinion, without the FAA in hand, the project remains exposed to potential cost increases, as this issue has been a key factor to date in significant cost escalations.

[71] The Board has, therefore, decided to hold the current ATO application in abeyance until the final project FAA is received from DFO. Once the FAA has been obtained by NS Power, the Company can file an amended ATO application. The Board expects the amended application to include an updated detailed project cost estimate resulting from finalization of the FAA process. The updated estimate must include explanations describing the reasons for any line-item cost changes compared to the detailed estimate provided in the current ATO application. When the amended ATO application is filed, the Board will establish a new timeline for the proceeding.

[72] The Board recognizes NS Power's concern that delaying the ATO approval process to accommodate the conclusion of the FAA permit process could present additional risks to fish management and public safety. However, the Board notes that NS Power has successfully managed these concerns since the completion of the dam safety review in 2015 and since the submission of the Company's original DFO submission in 2019. The Board expects NS Power to continue to manage these risks, which remain NS Power's responsibility.

[73] In response to a recommendation from the CA, the Board also notes NS Power's agreement to review its budgeting process for archaeological work in light of the evolving regulatory environment and its engagement with the Mi'kmaq of Nova Scotia. As such, when the Utility prepares future capital applications for Board approval, the Board will expect NS Power to consider its broader hydro fleet and lessons learned on prior capital projects related to archaeological impacts, requirements and costs. This consideration must be addressed in NS Power's line-item cost estimates for

archaeological and Mi'kmaq engagement, complete with explanations about how the lessons learned were used to develop those cost estimates.

3.4 Decommissioning Cost

[74] When the Ruth Falls project was included in the 2019 ACE Plan, NS Power had two choices to address safety concerns arising from the related dam safety review: either decommission the dam or refurbish it. At that time, NS Power did not consider the decommissioning option because it completed a preliminary assessment that determined the related cost would be significantly higher than the refurbishment cost, based on NS Power's experience with other hydro projects. In addition, the Company would need to secure 7.2 MW of renewable, dispatchable power, to replace the power lost by decommissioning Ruth Falls.

[75] The Ruth Falls Dam was constructed in 1925. This refurbishment project will extend the potential decommissioning of the dam by an estimated life of 50 years and will continue to allow the Ruth Falls generating facility to provide 7.2 MW of renewable and dispatchable power. However, to fully utilize the benefits of the generator throughout the extended lifespan of the dam, further sustaining capital investment will be required for other major facility components, such as turbines and generators. These investments will cover replacements or refurbishments. The facility will also continue to incur ongoing operating expenses.

[76] The benefits of a 7.2 MW renewable and dispatchable generation source and the resolution of safety concerns through decommissioning or refurbishment are distinct matters. If procuring a 7.2 MW generation source with similar grid benefits and decommissioning the dam was found to be more cost effective than refurbishing the dam

and utilizing its 7.2 MW hydro generation, then that approach would have served the best interest of ratepayers.

[77] The Board's approval of the Ruth Falls main dam refurbishment project in May 2019 effectively accepted NS Power's underlying proposition that refurbishment was the preferred project to address safety concerns, extend the dam's life by an estimated 50 years, and facilitate the continued use of Ruth Falls 7.2 MW of renewable, dispatchable power with continuing sustaining capital investments.

[78] At the time of the Board's approval of the Ruth Falls main dam project in the 2019 ACE Plan, NS Power indicated that decommissioning was considered on a preliminary basis but was not advanced. As such, decommissioning of Ruth Falls was not presented as a potential alternative to the refurbishment project. However, with the current ATO application, the estimated cost for the proposed refurbishment project has increased significantly. This has resulted in parties suggesting that decommissioning may now present a viable alternative. In fact, Midgard suggested that, as part of NS Power's ATO application, the Board should have been afforded the opportunity to evaluate whether the decommissioning option would be in the best interest of ratepayers.

[79] As noted previously in this decision, in response to a recommendation by the CA, NS Power has committed to providing decommissioning costs in future hydro applications, as applicable. Specifically, the Utility stated:

...NS Power recognizes the interest regarding evaluating decommissioning as an option in various hydro proceedings and the need to put that evaluation before the Board for consideration going forward. In light of this, NS Power will commit to providing decommissioning costs in future hydro applications, as applicable.

[NS Power Reply Submissions, pp. 2-3]

[80] In other Matters before the Board (namely the Tusket Main Dam Refurbishment matter, and the Mersey Hydro System Redevelopment project in various

ACE Plan applications), the Board and parties have raised concerns about NS Power's evaluation of hydro system decommissioning options. Given these concerns, and NS Power's recognition of the parties' interest in evaluating decommissioning as an option in various hydro proceedings, the Board would have expected NS Power to provide a comparative Net Present Value (NPV) analysis of the proposed Ruth Falls main dam refurbishment project to the decommissioning option in its ATO application. Instead, NS Power provided a decommissioning cost estimate of \$84.5 million in its Reply Evidence, complete with a listing of the sources of information upon which the cost estimate is based.

[81] NS Power has argued that the decommissioning cost estimate provided in its Reply Evidence provides sufficient detail about the source of each line-item cost estimate and the assumptions used to develop each line-item estimate. However, the Board and intervenors have not been able to test this information in the current proceeding. NS Power also noted that the estimated \$84.5 million cost of decommissioning is roughly 5.5 times higher than the cost of the proposed refurbishment project, even without consideration for lost generation. This estimate appears to represent an NPV estimate of the decommissioning option, although this remains somewhat unclear to the Board. Nevertheless, assuming it is an NPV estimate, there is no indication of when specific capital expenditures over the eleven-year timeframe of the decommissioning option would be made. The lack of this information also limits the ability to test NS Power's cost estimate.

[82] Considering this, the Board is concerned that a fulsome comparison and review of the Ruth Falls decommissioning option has not been included in the current

ATO proceeding. The Board has indicated above that it will hold the current ATO application in abeyance until the FAA is received from DFO. Once the FAA has been obtained by NS Power, the Company can then file an amended ATO application. Therefore, given the Board's noted concerns and NS Power's commitment to providing decommissioning costs in future hydro applications, the Board directs the Company to include a Ruth Falls decommissioning cost analysis in its amended ATO application. This analysis shall include a robust comparative NPV analysis of the proposed Ruth Falls main dam refurbishment project to the decommissioning option. The NPV analysis is to include, but not be limited to, all future sustaining capital, operating and maintenance costs associated with continued operation of the Ruth Falls hydro system. It is also to include costs for replacement generation under the decommissioning scenario.

[83] When the amended ATO application is filed, the Board will establish a new timeline for the proceeding so that the decommissioning vs refurbishment options can be fully tested by the Board and intervenors.

4.0 CONCLUSION


[84] The current ATO application will be held in abeyance until NS Power receives the final project FAA from DFO. Once the FAA has been obtained by NS Power, the Company can then file an amended ATO application with the Board. The Board expects the amended application to include an updated detailed project cost estimate resulting from finalization of the FAA process. The updated estimate is to be complete with explanations describing the reasons for any line-item cost changes compared to the detailed estimate provided in the current ATO application. When the amended ATO application is filed, the Board will establish a new timeline for the proceeding.

[85] The Board directs NS Power to include a Ruth Falls decommissioning cost analysis in its amended ATO application. This analysis shall include a robust comparative NPV analysis of the proposed Ruth Falls main dam refurbishment project to the decommissioning option. The NPV analysis is to include, but not be limited to, all future sustaining capital, operating and maintenance costs associated with continued operation of the Ruth Falls hydro system. It is also to include costs for replacement generation under the decommissioning scenario.

[86] When the Utility prepares future capital applications for Board approval, the Board expects NS Power to consider its broader hydro fleet and lessons learned on prior capital projects related to archaeological impacts, requirements and costs. This consideration shall be addressed in NS Power's line-item cost estimates for archaeological and Mi'kmaq engagement, complete with explanations about how the lessons learned were used to develop those cost estimates.

[87] The Board expects NS Power to provide decommissioning costs and related analyses in future hydro applications, as applicable.

DATED at Halifax, Nova Scotia, this 18th day of June, 2025.



Steven M. Murphy