

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF THE PUBLIC UTILITIES ACT

- and -

IN THE MATTER OF AN APPLICATION by NOVA SCOTIA POWER INCORPORATED
for accounting treatment and net book value recovery relating to the retirement of the
Annapolis Tidal Generation Station

BEFORE: Roland A. Deveau, Q.C., Vice Chair
Steven M. Murphy, MBA, P.Eng., Member
Richard J. Melanson, LL.B., Member

APPLICANT: **NOVA SCOTIA POWER INCORPORATED**
Blake Williams, Counsel
Eric MacRae, Counsel

INTERVENORS: **CONSUMER ADVOCATE**
William J. Mahody, Q.C.
Emily J. Mason, Counsel

SMALL BUSINESS ADVOCATE
E.A. Nelson Blackburn, Q.C.
Melissa P. MacAdam, Counsel

INDUSTRIAL GROUP
Nancy G. Rubin, Q.C.

**ANNAPOLIS CLIMATE & ECOLOGICAL RESEARCH
CENTRE COALITION (ACERC)**
Bill MacDonald, Chairman

TOWN OF ANNAPOLIS ROYAL
Amery Boyer, Mayor
Sandi Millett Campbell, Chief Administrative Officer

BOARD COUNSEL: S. Bruce Outhouse, Q.C.

HEARING DATE(S): September 13, 2021

FINAL SUBMISSIONS: October 19, 2021

DECISION DATE: January 13, 2022

DECISION: The Board is unable to conclude at this point that the Generating Station is not used and not useful. The application will be held in abeyance.

TABLE OF CONTENTS

1.0 SUMMARY 4

2.0 BACKGROUND 5

 2.1 Description of Generating Station/Property 6

 2.2 History of Operation Leading to Application 7

3.0 ANALYSIS AND FINDINGS 9

 3.1 Should the Generating Station receive accounting treatment as Not Used
 and Not Useful? 9

 3.1.1 Accounting Policy 6350 9

 3.1.2 Analysis of options 17

 3.1.2.1 Decision Analysis Model 18

 3.1.2.2 Project Alternatives 21

 3.1.2.3 NS Power Decision Analysis Results 28

 3.1.2.4 Review of Decision Analysis by Board Counsel
 Consultants 29

 3.1.2.4.1 Review by Midgard 30

 3.1.2.4.2 Review by MS Consulting 33

 3.1.3 DFO issue 36

 3.1.4 Findings 42

 3.2 Confidentiality of data relating to options 49

4.0 CONCLUSION 55

1.0 SUMMARY

[1] Nova Scotia Power Incorporated (NS Power or Company) has operated the Annapolis Tidal Generating Station since the mid-1980s. At the time of its commissioning a few years earlier, the Generating Station was originally anticipated to be a short-term research initiative led by the Federal Government to test tidal barrage technology and determine the viability for further development of this technology in the Bay of Fundy.

[2] NS Power has experienced operational and maintenance issues with the Generating Station over the past few years and applied to the Board for approval to treat the Station as "Not Used and Not Useful" in accordance with its approved Accounting Policy 6350. It also requested approval to amortize the undepreciated value and remaining Construction Work in Progress (CWIP) of the Station (in the total approximate amount of \$27.7 million) over the 10-year period between 2021 and 2030 in accordance with the same Accounting Policy.

[3] The thrust of this application, if approved, would effectively take the Generating Station out of service and its remaining undepreciated value would be recovered from ratepayers over 10 years. However, NS Power is not applying to decommission the Station at this time. Rather, it intends to submit a capital work order later, after it has determined the costs to decommission the Station.

[4] The Board is not satisfied that the Company has provided sufficient evidence to establish that decommissioning of the Generating Station is the least cost alternative available to NS Power. As such, the Board is not in a position, at this time, to find that the accounting treatment under Accounting Policy 6350 should be approved. The Board has provided guidance in the form of additional information which could assist in its determination. The Board is of the view that the best manner of proceeding is to

reconsider the request for the accounting treatment in conjunction with a decommissioning application, with all potential options being adequately addressed. That said, NS Power is free to consider if it has sufficient evidence to reopen its application prior to that time. In any event, the Company is to report on the status of the matter by January 31, 2023. The Board, therefore, holds the application in abeyance.

2.0 BACKGROUND

[5] On February 19, 2021, NS Power applied to the Board as follows:

- With respect to the Accounting Treatment of the Station, NS Power requests approval to treat the Station as Not Used and Not Useful in accordance with approved Accounting Policy 6350.
- With respect to the undepreciated value of the assets and in adherence to the regulatory principles of rate stability and inter-generational equity, NS Power requests Board approval to amortize the undepreciated value and remaining Construction Work in Progress (CWIP) of the Station over the 10-year period between 2021 and 2030 in accordance with approved Accounting Policy 6350.

[Exhibit N-1, p. 4]

[6] However, NS Power is not applying to decommission the Station at this time. It proposes to wait to file such an application after it has better determined the decommissioning costs. In its application, it stated:

Consistent with approved accounting policies, NS Power intends to submit a decommissioning capital work order for approval of the capital costs associated with decommissioning the Station. In order to refine the decommissioning scope and develop Class III estimates, NS Power will engage in an appropriate stakeholder engagement process and complete an Environmental Assessment which will involve a review of the proposed decommissioning scope to ensure environmental impacts are mitigated. NS Power will also engage with the Province of Nova Scotia and other stakeholders to coordinate the return of operation and maintenance responsibilities of certain causeway assets to the Province.

[Exhibit N-1, pp. 40-41]

2.1 Description of Generating Station/Property

[7] The Province of Nova Scotia (Province) built a causeway across the Annapolis River in 1960. It was designed to control water flow and protect agricultural lands along the river. This was done to alleviate issues arising from the deterioration of the dyke system which had previously been the main method of protecting these lands. Sluice gates were designed to control water flows and storm surges impacted by the high tides in the Annapolis Basin. They could also be used to enable hydro power generation. This led to the selection of the Annapolis River causeway as a location to test tidal power generation.

[8] The Generating Station was built as part of a research initiative involving Tidal Power Corporation, the Province, and the Federal Ministry of Energy, Mines and Resources. It was commissioned in 1984 for what was intended to be a short-term pilot project. At the time, it was one of only three tidal barrage hydro generating stations in the world.

[9] Tidal Power and the Province entered into an agreement about the operation of the Generating Station in 1984. Tidal Power took title to the lands upon which the Generating Station assets were located. Tidal Power also agreed to be responsible for the operation and maintenance of the sluice gates, although the Province retained ownership of these assets. Upon abandonment of the Generating Station, title to the lands and responsibility for operating and maintaining the sluice gates would revert to the Province.

[10] In 1984, Nova Scotia Power Corporation, the Crown-owned electric utility, applied to the Board of Commissioners of Public Utilities (the Board's predecessor) for approval of the purchase of the Generating Station. Approval was granted on July 24,

1985. NS Power acquired the Generating Station in 1992, by virtue of the vesting of assets provisions in the *Nova Scotia Power Privatization Act*, S.N.S. 1992, c. 8.

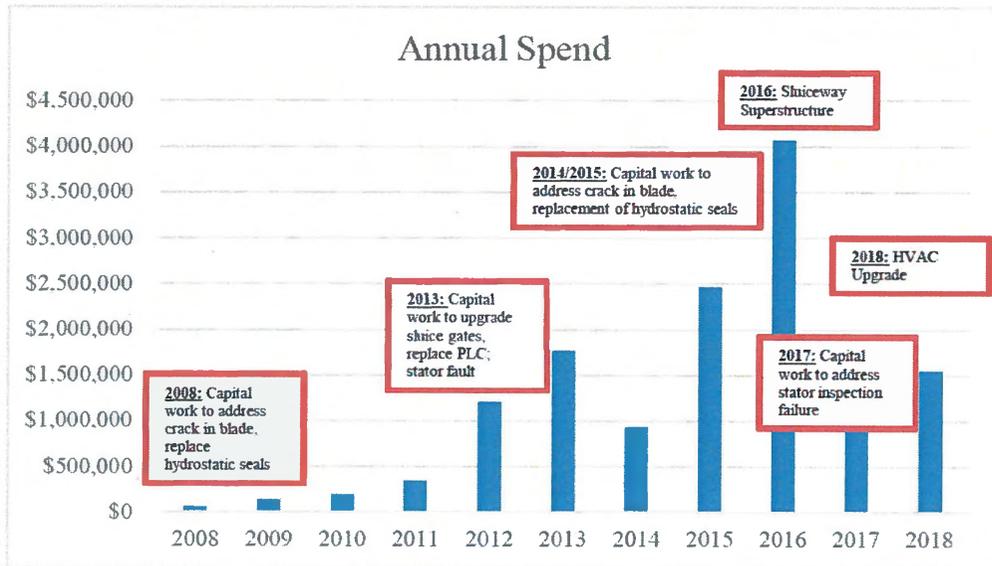
[11] Although the site was selected because of the existing causeway and sluice gates infrastructure, there was little land to work with. This led to a compact and unique design. The major components of the Generating Station are:

- The powerhouse where the major power generating assets are located, including the turbine and generator; the wicket gates and distribution ring; servomotors and weights; the draft tube housing the turbine and generator; and mechanical and electrical auxiliary components.
- Two fishways located adjacent to the powerhouse and the sluice gates.
- Sluice gates which are used to regulate water flow for power generation.
- A control room building used by staff to monitor and control the operation of the Generating Station. It also houses a viewing area for tourists and a tourist information centre operated by the Municipality of the County of Annapolis.

2.2 History of Operation Leading to Application

[12] The Generating Station was intended to be a pilot project with a short lifespan. As of 2019, it had been in operation for about 34 years. Perhaps not surprisingly, as time has gone by, the capital costs required to keep the Generating Station operational have been increasing. Since 2008, there have been significant capital expenditures made to address numerous failed components of the Generating Station, as depicted in Figure 2 in the application:

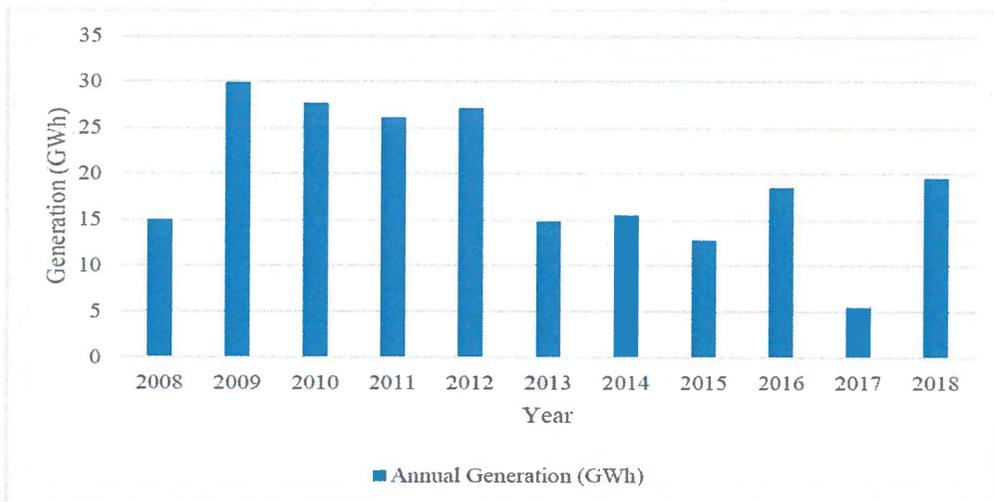
Figure 2: Annual Capital Expenditure 2008-2018



[Exhibit N-1, p. 10]

[13] NS Power indicated that while capital costs have been increasing, annual generation has been decreasing. This was partly due to the Generating Station being out of service while major overhauls were being completed. The foregoing is graphically depicted in Figure 3 found in the application:

Figure 3: Annapolis Annual Generation from 2002-2018



[Exhibit N-1, p. 11]

[14] NS Power advised that the combination of increasing sustaining capital cost requirements and decreasing output led the Company to initiate an analysis to investigate whether continued operation of the Generating Station was in the best interests of ratepayers. The Company's review began in early 2018. On January 15, 2019, while this investigation was ongoing, the Generating Station's exciter failed. The exciter is a required component of the generator which provides a magnetizing current for the electromagnets. The Generating Station has not produced any power since this event. Also, on April 1, 2019, following the exciter's failure, Fisheries and Oceans Canada issued a notice to the Company indicating NS Power would need an authorization under the *Fisheries Act* to continue operating the Generating Station. The foregoing sequence of events led NS Power to conclude the station should not be returned to service.

3.0 ANALYSIS AND FINDINGS

3.1 Should the Generating Station receive accounting treatment as Not Used and Not Useful?

3.1.1 Accounting Policy 6350

[15] The basis of this application is NS Power's request for the use of the Company's Accounting Policy 6350 - Assets Not Used and Useful. The Board finds it instructive to first consider the main choices for NS Power in classifying and retiring its capital assets.

[16] Capital assets that are currently providing service to the public and are intended for use on a continuing basis are recorded as assets that will benefit future periods. Depreciation and amortization are methods of charging asset costs to fiscal

periods over their useful life¹, which reduce future net earnings. At the time of NS Power's application to the Board, the Annapolis Tidal Generating Station and associated assets were being treated as used and useful, which allows NS Power to include the assets in rate base, earning the allowed return, and to collect an annual depreciation expense, recovered through rates. The unrecovered net book value of these assets at the time of NS Power's application was approximately \$25.8 million (excluding \$1.9 million in CWIP), being depreciated at a rate of 2.02% per year, resulting in an annual depreciation expense of approximately \$800,000².

[17] NS Power has two accounting policies related to the retirement of capital assets: 6420 – Retirement and Disposal of Capital Assets, and 6350 – Assets Not Used and Useful.

[18] Accounting Policy 6420 provides in part:

Policy

08 Assets that are not used and not expected to be used in the foreseeable future should be retired from plant in service.

Procedures

09 For retirements of property, plant and equipment other than land, the original cost is charged to accumulated depreciation, with no immediate gain or loss recognized.

[19] NS Power stated that the intent of Policy 6420 is for routine asset retirements, where assets that are not used and not expected to be used in the foreseeable future are retired from plant in service. The Board notes that in the case of generating stations, it would expect that this accounting policy would be used only when a station came to the end of its useful life in the normal course, and within an expected

¹ NS Power Accounting Policy – Capitalization of Cost - 6000

² NS Power Application for Annapolis Tidal Generation Station Retirement (M10013), February 22, 2021, page 37

time frame. This accounting policy notes factors causing assets to lose their ability to provide service include reaching the end of their useful lives, irreparable equipment failure, and technological obsolescence.

[20] Using Policy 6420, original cost amounts being charged to accumulated depreciation remain in accumulated depreciation until the next depreciation study. The Board expects that a future depreciation study brought forward by NS Power would analyze the capital assets retired since the last study³, and result in recommendations for changes to depreciation rates based on actual retirement experience.

[21] The second asset retirement Accounting Policy 6350 – Assets Not Used and Useful, states that “Assets that are not both used and useful should be classified in one of the following categories: a) Not used and not useful; b) Not used but useful for standby purposes; or c) Not used but useful for future service.”⁴ The Board notes that Policy 6350 was reviewed in detail in a prior Board proceeding (Matter M09229), NS Power’s Revised Accounting Policies.

[22] In its Decision in that matter dated May 5, 2020, the Board stated that “NS Power agreed that while Policy 6350 does not expressly state significant unforeseen or extra-ordinary events are to be considered in line with this policy, it has consistently been interpreted by both NS Power and the Board as requiring this consideration.” NS Power filed the current application under Accounting Policy 6350.

[23] The first category of Policy 6350, “Not used and not useful” is described as assets that meet both criteria of not currently providing service to the consuming public, and that they are not expected to provide a benefit to customers in the foreseeable future:

³ M03665, NS Power 2010 Depreciation Study, October 29, 2010

⁴ NS Power Accounting Policy – Assets Not Used and Useful - 6350

Policy (Not used and not useful)

- 07 Where an asset is neither used nor useful, there is no current or future benefit against which the undepreciated cost of the asset can be matched. Therefore, the undepreciated cost should be written off in the period in which an asset is determined to be not used and useful.

[24] The effect of a write-off under this category is the removal of the undepreciated net book value from rate base at the time when the asset is determined no longer used and useful. This removal also results in the cessation of depreciation expense, as that asset is no longer on the Company's books. Where the write-off is significant, NS Power can apply to the Board for approval to amortize the undepreciated cost of the asset on a straight-line basis, over five years or over a reasonable period. The Board notes that this category is the one under which NS Power has made this application for the Annapolis Tidal Generating Station assets.

[25] The second category, "Not used but useful for standby purposes" is described in the policy as assets that do not currently provide service to the consuming public but are available for service and are required to maintain standby capacity:

Policy (Not used but useful for standby purposes)

- 11 An asset that is not used but is useful as a standby facility is to be treated the same as an asset that is used and useful. The asset is to be depreciated over its expected useful life. The undepreciated cost of the asset is to be included in rate base, and the related cost of capital recognized as an expense of the period in which it is incurred.

[26] Given the evidence presented by NS Power, the Annapolis Tidal Plant does not appear to be available for service and would therefore not meet the criteria necessary to be included in the category of "Not used but useful for standby purposes."

[27] The third and final category under this accounting policy are assets that are "Not used but useful for future service." This is described in the policy as assets which do not currently provide service to the consuming public but are expected to be used and

useful in providing service in the future or to form part of the normal level of standby capacity in the future:

Policy (Not used but useful for future service)

- 13 Assets not currently used, but expected to be used in providing service in the future will provide value to customers at a future date. Accordingly, the cost of the asset is to be matched to the future periods in which the asset will provide value to customers.
- 14 To the extent that the cost of the asset plus any other costs of maintaining the asset until it is placed (or returned) to service exceed its expected future value, the excess cost is similar to the cost of an asset that is neither used nor useful. Where it is expected that there will be an impairment loss of the long-lived asset when returned to service, the excess is to be written off and recovered from customers in the period in which the excess is identified. However, to enhance rate stability, where the excess is significant, it may be deferred and amortized over a five year period or over a reasonable period subject to the approval of the UARB.
- 15 Depreciation on these assets is deferred until they are returned to service. The unamortized cost of the assets (net of any write offs) is to remain in rate base.

[28] NS Power has expressed that “The Station is now considered to have run to failure and will be decommissioned,”⁵ solidifying their intention to retire the station. However, the Board notes that if the Annapolis Tidal Generating Station assets were expected to provide future use and classified under this category, the unrecovered net book value of these assets of approximately \$27.7 million would remain in rate base, earning the allowed return, and the recovery of depreciation expense would be deferred until such time that NS Power returned these assets to service.

[29] To summarize the impact of these policies, which cannot be read in isolation but instead, as two potential paths, Policy 6420 is used in the normal course of business for retirements, where the asset is merely rolled back into accumulated depreciation and rate base is unaffected, while Policy 6350 is used when assets are not both used and useful and may be written off, effectively removing them from rate base. The Board notes

⁵ NS Power Application for Annapolis Tidal Generation Station Retirement (M10013), February 22, 2021, page 15

that it considers it best practice to ensure that no large amounts of redundant assets are sitting in rate base. One-off situations outside of the normal course of business, such as the retirement of a full generating station before the planned end of its useful life, are truly what the Policy 6350 is made to address.

[30] Board Counsel consultant, Grant Thornton, was engaged to analyze the proposed accounting treatment of the Annapolis Tidal Generating Station assets. In their evidence dated June 30, 2021, Grant Thornton stated:

In the Application, NSPI states that the undepreciated costs qualify under Accounting Policy 6350 as being Not Used and Not Useful. The accounting implications of the retirement are ultimately dependent upon the results of the DA [Decision Analysis]. Our observations on the DA model and the conclusions reached by the DA are provided in Appendix A. If, based upon our recommendations, the conclusion of the DA was to change, the accounting implications would have to be revisited accordingly. For example, if the conclusion of the DA was to pursue life extension and modernization as the lowest cost option, Accounting Policy 6350 would no longer be applicable as the assets would no longer be considered Not Used and Not Useful.

[Exhibit N-9, p. 3]

[31] The closing submissions by both the Industrial Group and the Consumer Advocate stated that as it has been sufficiently demonstrated that the generating station is not currently being used, the crux of the application is the determination of future usefulness. This was addressed during cross-examination of the NS Power panel by Board Counsel in the hearing on September 13, 2021.

Q. So, I want to turn to page 4 of the application. So, in the middle of page 4, lines 12 to 13, you're setting out the first thing that you're -- that NSPI is asking for. And it says:

"With respect to the accounting treatment of the station, Nova Scotia Power requests approval to treat the station as not used and not useful in accordance with approved Accounting Policy 6350"

Correct?

A. (Sidebottom) Correct.

Q. Now, I don't think there's any dispute at all about the fact that the station isn't being used, and it hasn't been since January 2019. So, it's clear that we're talking about an asset that's not used.

The substantive issue, at least in my mind, is whether the plant is useful, and will be useful going forward. Do you agree?

A. (Sidebottom) I agree.

Q. And it seems to me, at least, that in order to approve NSPI's request to treat the station as not used and not useful that NSPI must satisfy the Board, it must satisfactorily demonstrate that retirement and decommissioning of the station is the best solution for customers. Is that correct?

A. (Sidebottom) That's correct, yes.

[Transcript, pp. 85-86]

[32] The closing submissions of the Small Business Advocate, the Industrial Group, the Consumer Advocate, and the Town of Annapolis Royal all expressed concerns relating to NS Power's assertion that the retirement of the Generating Station is the lowest cost option to customers. All four stakeholders noted that they do not agree that NS Power has put forth a sufficiently comprehensive analysis to convince them that there is no viable future use of the assets in question for public utility purposes.

[33] In the past, NS Power has come forward with complete applications for the retirement of generating stations which include both the recovery of net book value and decommissioning costs of a facility⁶. However, this application is only looking at recovery of the net book value of the Annapolis Tidal Generating Station assets, with the approval for the decommissioning and the recovery of related costs deferred to a subsequent application.

[34] NS Power has put forth this application with an expectation that there will be two distinct decisions made on the Annapolis Tidal Generating Station assets. The first decision is predicated on the assumption that the costs are sufficiently accurate to perform a Decision Analysis (defined later) and rely on the output representing

⁶ NS Power response to Board IR-33, June 9, 2021, Glace Bay Generating Station

decommissioning as the lowest cost option for customers. The second is the treatment of the decommissioning costs once NS Power has performed Class 3 design work to refine the estimate and file a subsequent application, a process which NS Power has stated will take approximately 1-2 years⁷.

[35] In the hearing, NS Power confirmed that the future process of performing the Class 3 design would better inform the Company of the full costing details of retirement and decommissioning. NS Power stated that if, at that future time, the Decision Analysis resulted in a determination of the Life Extension and Modernization (LEM) or another alternative being found to be the lowest cost option, NS Power would then plan to reclassify that asset back to used and useful⁸.

[36] John Reed of Concentric Energy Advisors, NS Power's consultant, spoke to this point, stating that he does not view the decision of advancing the accounting treatment as being carved in stone. He stated that in the event further work to better define the cost of decommissioning was to change substantially (resulting in the LEM being the lower cost alternative), then NS Power could revisit the accounting treatment and transfer the plant into one held for future use. Board Counsel questioned Mr. Reed further on the subject:

Q. All right. And I just want to ask a question about how you see that working. In other words, the application, at least, is looking for that accelerated amortization to commence this year and be extended over the next 10 years. And I think the application for the -- if there is an application for retirement and decommissioning, that that may be a couple of years down the road, a year or two down the road.

So, if you were to implement the decision as requested, and collect two years of amortization, how would that egg be unscrambled in terms of customers?

A. (Reed) Again, perhaps I can start. The decision to implement this year and to extend for two years, to use your example, would cause approximately five million of the

⁷ NS Power Application for Annapolis Tidal Generation Station Retirement (M10013), February 22, 2021, page 4

⁸ Hearing Transcript, September 13, 2021, page 61

27 to 28 million of book value to be written off over that period of time, leaving, presumably, 22 to 23 million remaining book value for this asset.

So, maybe, if it was determined at a future date, that that remaining balance at that time, the 22 to 23 million, should be returned to account of client, held for future use, that's the way, in my view, the mechanics would work. But you still have recovery of that client balance, but that would be recovered through the subsequent operation of the unit following life extension, if again, in the unlikely case that were to be the least cost option.

[Transcript, pp. 88-89]

[37] In the hearing, Mr. Reed explained why he believed that the timing of this application was appropriate. He stated that Accounting Policy 6350 contemplates the Company bringing forth an application to determine the appropriate treatment of the asset when that asset is no longer considered to be used and useful. He also noted the need to minimize the intergenerational equity issue relating to the length of time between the benefits being received from an asset (pre-2019), and who in the future will be paying for the remaining cost, stating the need to promptly present an application to accelerate the cost recovery of that asset.

3.1.2 Analysis of options

[38] Increasing annual capital investment, decreasing annual generation, and the overall condition of the Annapolis Tidal Generating Station after 34 years of operation have prompted NS Power to evaluate whether the lowest cost option for customers is continued investment in the station or decommissioning. Before undertaking this evaluation, the Company determined that a broad range of potential costs would need to be considered for any station re-investment option. This determination was based on the uniqueness of the existing station's design and the lack of similar existing facilities in the power generation industry. The Company believes this results in a level of uncertainty around the capital costs associated with an assessment of continued operation due to a lack of benchmarking and historical comparison. Further, given the fisheries issues

discussed later in Section 3.1.3 of this Decision, NS Power concluded that a wide range of potential costs would also need to be considered for related permitting and operating impacts.

[39] Given the complexity created by these cost uncertainties, NS Power decided that a probabilistic model, which tested a broad range of outcomes and allowed for consideration of multiple variables and probabilities for each alternative, would be the most suitable tool to assess the range of risk associated with each variable and determine the lowest cost alternative for customers on a Net Present Value of Revenue Requirement (NPVRR) basis. The Company has referred to this probabilistic modelling as its “Decision Analysis”:

The Decision Analysis process varies from NS Power’s traditional Economic Analysis Model (EAM) in that the Decision Analysis is probabilistic; incorporating various probabilities and determining the most likely outcome along with a range of outcomes at various probabilities, whereas the EAM is deterministic; incorporating parameter values and initial conditions which fully determine the output of the model.

[Exhibit N-1, p. 16]

3.1.2.1 Decision Analysis Model

[40] Compared to an Economic Analysis Model (EAM), the Decision Analysis requires additional internal and external input and analysis to develop the range of probabilities for each of the key uncertainties. In addition to determining the lowest cost alternative on a NPVRR basis, the Decision Analysis includes a simulation of cost estimates which evaluates the range of potential outcomes associated with the decision and the potential impacts of key variables on the overall Net Present Value (NPV) for each alternative. Each simulation calculates the total range of NPVs of a selected strategy based on the defined inputs, which is represented by the probability curves. The Decision Analysis included the following steps:

1. Determine and review project alternatives.
2. Commission studies. NS Power worked with internal subject matter experts (SMEs) to develop a range of values for scope, timing and costs of key variables for the project alternatives examined in the Decision Analysis. These SMEs had expertise in environmental matters, asset management, hydro operations, stakeholder engagement and power generation planning. The Company also engaged external consultants to complete studies and provide estimates for uncertainties associated with each project alternative.
3. Define probability ranges for key Decision Analysis variables. These key variables included:
 - Capital construction cost;
 - Environmental assessment costs and timeline;
 - Engineering and design costs;
 - Fish shut down periods;
 - Run to failure timeline;
 - Sustaining capital costs;
 - Operating costs;
 - Mi'kmaq engagement capacity costs; and
 - Replacement energy costs.

NS Power indicated that the cost estimates produced for these variables were developed at an Association for Advancement of Cost Engineering (AACE) Class Level 5. Cost estimates produced at that level are generally expected to be accurate to -50% to +100% after inclusion of an appropriate contingency

allowance. Each of these variables was assigned distributions for the Decision Analysis modeling at 10 percent (P10), median (P50) and 90 percent (P90) of the probability range. The P10 and P90 values represent the high and low ends of the range of probable values for any given variable (P90 being the highest probable value, at which only 10 percent of the values would be greater, and P10 being the lowest probable value, at which only 10 percent of the values would be less).

4. Calculate NPVRRs. The calculation of the NPVRR follows NS Power's standard approach to determining project value as provided in the Board-approved Capital Expenditure Justification Criteria (CEJC). The Decision Analysis calculates the NPVRR for a range of values based on the risk profile for each scenario considered.
5. Perform Monte Carlo Simulation. NS Power stated that the Monte Carlo simulation provides a formal means for quantifying model uncertainty. It assigns a probability distribution to each of the key variables using the range of values provided by internal and external experts. The simulation randomly samples values between P10 and P90 for each variable and calculates a range of possible outcomes for the revenue requirement associated with each alternative. In this case, the simulation was repeated 1,000 times for each alternative to ensure sufficient range of resulting costs.
6. Assess results. The assessment of the Decision Analysis results includes two steps. The first step is a comparison of the median (P50) NPVRR for each alternative and determination of the lowest cost option for customers. The

second step includes an evaluation of the probability curves and tornado diagrams produced by the Monte Carlo system to assess the risks created by the uncertainties associated with each alternative. The probability curves developed by the Monte Carlo simulation demonstrate the risk associated with the potential range of NPVRR outcomes for each of the alternatives evaluated in the analysis. Tornado diagrams highlight the key variables that have the potential to have the greatest impact on the outcome of the Decision Analysis for each project alternative. In effect, they provide the relative sensitivity of each key variable on the ultimate NPVRR of each project alternative.

3.1.2.2 Project Alternatives

[41] NS Power's Decision Analysis considered four project alternatives for the Annapolis Tidal Generating Station:

1. Run to Failure and Subsequent Decommissioning;
2. Decommissioning;
3. Life Extension and Modernization; and
4. New Technology.

Run to Failure and Subsequent Decommissioning (RTFD)

[42] One of the options evaluated by NS Power regarding the future of the Generating Station was identified as "Run to Failure and Subsequent Decommissioning". The RTFD alternative was defined as allowing the Generating Station to run until failure occurs, which would be followed by retiring and decommissioning the assets once the station had ceased generating.

[43] In its application, NS Power defined failure as:

...failure of the Station is defined as an unplanned shut down resulting from a failure of a crucial Station component that would require capital investment (in excess of the cumulative annual sustaining capital value over a three year period) in order for the Station to resume generation.

[Exhibit N-1, Figure 6, p. 26]

[44] NS Power's Decision Analysis modelled this RTFD alternative assuming that failure might occur under three possible timing scenarios. Those timeframes were one year, three years, and six years, which corresponded to P10, P50, and P90 values, respectively. Based on that analysis, the RTFD alternative was determined to be the lowest cost option for customers when compared to the other three alternatives, which were the immediate retirement and decommissioning, a Life Extension and Modernization project, and the installation of new technology.

[45] Prior to NS Power completing its review of the modelling and making a final determination, the exciter component of the station generator failed on January 15, 2019. Consequently, NS Power's analysis was amended to assess whether the estimated capital investment of about \$920,000 required to replace the exciter, coupled with additional forecast capital investments to rehabilitate mechanical auxiliary components and the turbine, was greater than the forecasted sustaining capital spending for the RTFD alternative (about \$260,000 annually over three years). NS Power stated that without the exciter, the station can no longer generate. Although the failure occurred sooner than had been expected, NS Power determined that the cost to repair the exciter exceeded the forecasted amount of sustaining capital and confirmed that the Generating Station had run to failure. Given those circumstances, decommissioning was considered to be the next step in the RTFD alternative.

[46] During this proceeding, NS Power was questioned about the exciter failure mode and preventative maintenance. In response to NSUARB IR-2(a) and (b), NS Power stated:

(a) Yes. NS Power conducted an analysis to determine the cause of the exciter failure, though not formal. This analysis concluded that the failure was caused by a failed control card for the exciter which allowed current to pass through the field discharge resistor for longer than is intended by design causing excessive heating and damaging key components beyond repair.

(b) NS Power completed preventative maintenance on the exciter which included operators rounds, inspections, maintenance of the fans and louvres etc. These activities would not have foreshadowed this event as control system card failures are difficult to predict. Assessing condition of control cards is challenging in the industry as there are limited preventative maintenance activities that can accurately assess failure modes. These devices do not normally exhibit physical changes prior to failure. Due to this concern, NS Power had planned to complete a replacement of the exciter in 2018 prior to this failure as outlined in ACE 2018 NSUARB IR-55.

[Exhibit N-6, p. 3]

[47] NS Power was also asked how much longer the station could run until failure if the exciter was replaced. In response to NSUARB IR-15(c), NS Power stated:

(c) The exciter was not the only component of the system that required overhaul/replacement to allow for the reliable operation of the tidal plant. Many auxiliary components are original to the unit and unless the other components referenced in the LEM scope of work were also replaced, a failure would be expected in the near future. As such, NS Power is unable to predict how much longer the station would run until it failed again if the exciter was replaced.

[Exhibit N-6, p. 24]

[48] Regarding NS Power's Decision Analysis of the RTFD alternative, NS Power was asked about its justification for using the three-year period with respect to annual forecast sustaining capital. Its response to NSUARB IR-15(d) was:

(d) The DA identified a 3-year period as the P50 value for the generation life span for the RTFD scenario. Since the tidal plant failed less than one year from the start of the DA timeline, NS Power reasoned that the exciter failure would be considered a "failure event" for this scenario if the cost exceeded the sum of the sustaining capital value for the duration of the original P50 assumption of 3 years.

[Exhibit N-6, p. 24]

[49] During the hearing, further clarity was sought regarding the RTFD alternative and how the exciter failure event impacted the range of alternatives considered in the Decision Analysis. In cross-examination by Board Counsel, the following exchange occurred:

Q. As I understand it, the run to failure and decommissioning is lower than the decommissioning cost by [redacted] because the first of those options had in the model a three-year period in which it would run and produce energy?

A. (Peachey) Yes, that is correct. A good way to look at the scenarios, decommissioning versus RTFD, is that RTFD is essentially decommissioning that is experiencing the benefit of having continued operation until a failure event occurs. Which is why we implemented the sustaining capital threshold as part of that scenario, in order to understand when spending has occurred above which it's in the best interest of customers to proceed with decommissioning.

Q. All right. So, what we're really looking at here, because of the premature failure in terms of what was in the model, isn't what we're looking at the decommissioning option, as opposed to the run to failure and decommissioning?

A. (Peachey) That is correct, yes. Since a run to failure event has occurred, we're essentially moving towards the decommissioning scenario, yes.

[Transcript, pp. 101-102]

[50] These issues were further canvassed by the Board:

Q. Okay. Thank you. I have some questions on the exciter failure and the decision to identify the plant as being [in failure] mode now. But my questions may be moot given what was referenced earlier during Mr. Outhouse's questioning. So, I just want to confirm at this point, it is in fact the [run to] failure decommission options presented to the [Decision] Analysis, is that really off the table at this point? Are we really comparing LEM and new technology to the decommissioning option?

A. (Peachey) Yes. We are comparing yes decommissioning to the other two rebuild scenarios. That's correct.

Q. So, I guess the cost associated with the replacing the exciter and those identified nine hundred and twenty-thousand and Midgard perhaps suggested that was high. And then there's the same threshold cost of two hundred and sixty thousand that Nova Scotia Power developed based on historical costs. Are those at this point really irrelevant to the decision sort of moving forward and you compare -- we're going to compare LEM and new technology to decommissioned. RTFD is off the table?

A. (Peachey) They're relevant in that we had to determine that a run to failure event had occurred before we could determine that decommissioning was the next best option. So, decommissioning is essentially -- or sorry, RTFD is essentially the decommissioning scenario with the added benefit of having continued generation until a failure event had occurred.

But in order for us to understand if a failure event had occurred, we had to put in place a reasonable proxy that would act as threshold value by which any expense or capital cost above that would indicate that the best option would be to move towards decommissioning. And just to revisit that, the proxy that we did use was representative of a sustaining capital cost.

So, it looked at our historic cost and our historic overhaul frequency model that over the 40-year life of the model and took the annual average of that total amount. And so, that's representative of the value to keep the plant operating. Anything above that is essentially characterized by the LEM scenario. What would be required as part of that.

So, at the time when the failure event occurred the plant was operating. So, we did have to -- and understanding that the RTFD scenario was showing us the best interests for customers as part of the decision analysis. That information around the replacement cost of the exciter became very important for us to understand whether or not a failure event had occurred, and that decommissioning was the next best option.

[Transcript, pp. 143-145]

Q. Okay. Thank you. But again, moving forward the options that really should be compared are LEM, new technology and decommissioning?

A. (Peachey) That is correct, now that we understand that a run failure event has occurred decommissioning is the next task forward, and those are the options that we should be comparing, yes. Thank you.

[Transcript, p. 147-148]

[51] This exchange during the hearing confirmed that the RTFD alternative is moot, given NS Power's determination that a run to failure had occurred, thereby shifting the Decision Analysis to focusing on the decommissioning alternative as the proposed course of action in comparison to other options.

Decommissioning

[52] The decommissioning scope modelled in the Decision Analysis assumed full decommissioning of the existing Annapolis Tidal Generating Station. No costs were included for decommissioning of the existing sluice gates, causeway, and fish passages because, pursuant to the Provincial Agreement, those assets would remain intact and operation and maintenance returned to the Province upon abandonment by NS Power. The scope for decommissioning the station includes the following items:

- Installing stop logs (and bulkheads, if required);
- Dewatering the unit;
- Removing the equipment from the powerhouse;
- Filling the powerhouse with rockfill and removing the control room building;
- Removing assets within the control room building;
- Installing telecom equipment to maintain communications with other systems routed through the Annapolis communication point; and
- Removing the substation and transmission line to Hog Island.

This decommissioning scope involves returning the area to its original function before the station was commissioned in 1984, with no water flow through the causeway at the location of the Station.

Life Extension and Modernization (LEM)

[53] The LEM alternative includes a complete overhaul to all components of the powerhouse with the intent of extending the operating life of the station by 40 years. The LEM scope includes:

- Turbine: refurbishment of the sealing system and the bearings as well as a redesign of the turbine blades to reduce the risk of blade cracking;
- Generator: refurbishment of the rotor and stator;
- Electrical auxiliary components: replacement of electrical components, which are now obsolete;

- Mechanical auxiliary components: combination of refurbishment and replacement of mechanical auxiliary components that have reached their end of expected useful life; and
- Sluice gates: eventual upgrades to the mechanical components of the gates.

The LEM alternative also includes the requirement for a *Fisheries Act* Authorization from Fisheries and Oceans Canada (DFO) which would result in additional operating requirements to support fish migration activities. The Decision Analysis model assumes these requirements would involve a range of shut down periods to accommodate migration patterns of fish species.

New Technology

[54] The new technology alternative involves removing the existing turbine and generator and replacing it with a bulb turbine. NS Power considered the bulb turbine was the only technically feasible alternative for new technology because it met the following station requirements set by NS Power in the Decision Analysis:

- The turbine/generator must be horizontal to accommodate barrage type tidal operation;
- The turbine/generator is required to meet the current energy rating of the existing turbine/generator model (20MW); and
- The turbine/generator RPM must match that of the existing turbine/generator, which operates at a lower RPM to minimize impacts to fish while in operation.

The scope associated with the installation of a bulb turbine also includes the replacement of mechanical and electrical auxiliary components for compatibility purposes, and

concrete work to allow the station to meet the size and support requirements of the new turbine.

3.1.2.3 NS Power Decision Analysis Results

[55] NS Power's Decision Analysis calculated that the RTFD project alternative has the lowest median P50 NPVRR value. Decommissioning had the next lowest NPVRR P50 value, followed by the LEM and New Technology option, respectively. The calculated NPVRR of the New Technology option was significantly higher than the other project alternatives. Consequently, NS Power eliminated the New Technology option as a potential project alternative and did not complete any further preliminary engineering for that option. Further, the Monte Carlo simulations completed by the Company produced probability curves that indicate the RTFD and Decommissioning alternatives had a lower potential range of possible NPVRR values than the LEM and New Technology options. NS Power has, therefore, concluded that the RTFD project alternative is the lowest cost option for customers and poses the least risk when the potential range of NPVRR values are considered.

[56] The tornado diagrams produced by NS Power's Decision Analysis indicate that construction capital costs are the largest source of cost risk in each project alternative. This means that according to the Company's Decision Analysis, a change in the construction capital key variable inputs will have the most significant impact on the ultimate revenue requirement for each alternative. The Decision Analysis also shows that costs associated with fish shut down periods are the next largest source of costs in the LEM option. NS Power noted that the fish shut down periods would reduce generation

and have a significant impact on the replacement energy cost and ultimately on revenue requirement.

[57] NS Power retained Robert Griesbach, Director, Energy Consulting at Hatch Ltd., as an independent expert to review the current application. Based on his experience and expertise, Mr. Griesbach expressed the following opinion:

- NS Power's Decision Analysis provided a reasonable approach in assessing the options for the future of the station;
- The internal and external inputs used in the Decision Analysis were appropriate; and
- The conclusion reached by NS Power to retire the Generating Station is reasonable.

3.1.2.4 Review of Decision Analysis by Board Counsel Consultants

[58] Board counsel engaged two expert consultants to review and provide opinion evidence related to NS Power's application. The consultants were Midgard Consulting and Grant Thornton. Midgard's specific focus was a technical analysis of NS Power's assertion that the station is "not used and not useful", the project alternatives analyzed by NS Power after having arrived at the preceding conclusion, and the resulting conclusion that decommissioning the station is the preferred course of action going forward. Grant Thornton was engaged to review the application as it relates to the treatment of the station retirement under NS Power Accounting Policy 6350. Grant Thornton also contracted Matthew Schoenhardt of MS Consulting to review and provide opinion on the Monte Carlo simulation completed by NS Power as part of its Decision Analysis.

3.1.2.4.1 Review by Midgard

[59] With respect to the LEM project alternative presented by NS Power, Midgard found that NS Power acted prudently in its efforts to characterize this option. Midgard noted that NS Power's definition of the alternative as a 40-year life extension appears reasonable. Midgard also indicated that NS Power's estimated cost for the LEM alternative are significant but not unexpected, given the unique challenges posed by the station's design and environment. Nonetheless, given the difference between NS Power's calculated NPVRR of the LEM option versus the RTFD option, Midgard stated:

In light of the significant risk of increase to the RTFD cost estimate, Midgard recommends that NSPI be directed to "keep alive" the LEM alternative to ensure that it remains a viable course of action until decommissioning activities, risks, and costs are better characterized.

[Exhibit N-8, p. 22]

[60] With regards to the New Technology project alternative analyzed by NS Power, Midgard concluded that NS Power acted reasonably in focusing its effort on Kaplan bulb turbines when considering a turbine-generator replacement. Midgard did note, however, that NS Power only sought information from one bulb turbine manufacturer, rather than soliciting information from multiple firms. Midgard indicated that consideration of offerings from multiple manufacturers would have constituted a more appropriate and thorough investigation of the replacement avenues available to NS Power.

[61] Midgard also found it concerning that NS Power's level of study of the New Technology alternative appears to have been cursory. Midgard noted that NS Power's supporting documentation for the New Technology option consists solely of a one-page, high-level estimate provided by the manufacturer, whereas the RTFD, decommissioning and LEM alternatives are supported by multiple appendices comprising larger, more

comprehensive reports. Further, while Midgard acknowledged the need for the use of fish-friendly turbine technology, Midgard found that NS Power's insistence that the only means that this can be achieved is to employ a turbine whose RPM exactly matches the existing turbine (which, it should be noted, the DFO currently believes is harmful to fish) is indicative of "inflexible" and "uncreative thinking" from NS Power. Midgard also suggested that NS Power could have considered a broader range of possibilities for its New Technology alternative. Such consideration may have led to the New Technology option receiving further attention and more detailed analysis by NS Power. Overall, Midgard expressed its opinion that NS Power's process of generating and evaluating available New Technology options available to it was inflexible and cursory. Therefore, Midgard recommended that the Board direct NS Power to more fully and flexibly evaluate station replacement options before committing itself to a decommissioning alternative.

[62] With respect to the decommissioning project alternative, Midgard found that NS Power appears to have taken appropriate first steps towards characterizing that option. However, Midgard expressed concerns with areas of the decommissioning alternative: the risks associated with a decommissioning project, and NS Power's cost estimate included in the Decision Analysis.

[63] Midgard noted that all decommissioning scenario cost estimates include significant lists of exclusions from the expected project scope. As such, Midgard stated:

In this context, NSPI has still justified its claim that "the RTFD and Decommissioning alternatives carry lower overall risk to customers" [Application, pg. 31 of 41] compared to the other alternatives by stating that "the RTFD and Decommissioning scopes are relatively simple in comparison to the scope for both the LEM and New Technology scenarios" [Midgard-RIR 14a]. This statement does not appear to appreciate or incorporate the significant list of risks and unknowns that still surround the RTFD option.

[Exhibit N-8, p. 35]

[64] Midgard also stated that NS Power appears to have an inconsistent approach to accounting for the risk posed by DFO requirements between its alternatives. Specifically, Midgard believes that NS Power has assumed onerous and conservative requirements for the LEM and New Technology alternatives, while it has assumed relatively optimistic related cost requirements for the RTFD and decommissioning alternatives. Midgard noted that this approach appears imbalanced in favour of the RTFD and decommissioning alternatives.

[65] With regards to NS Power's decommissioning cost estimates, Midgard noted that NS Power stated that it had used a conservative decommissioning cost estimate in its Decision Analysis. However, Midgard also noted that of the five decommissioning scenario cost estimates it received, NS Power chose to use the least expensive as the basis of its estimate. Midgard also pointed out that NS Power's decommissioning cost estimate in the current application is significantly less than the station decommissioning cost estimate the Company presented in its 2018 Hydro Asset Study. In NS Power's response to IRs about this issue, Midgard found that NS Power had not adequately explained this difference.

[66] Overall, Midgard believes that NS Power has underestimated the costs and risks associated with the RTFD and decommissioning options. Midgard stated that should any of these risks materialize and result in significant incremental costs, the results of NS Power's Decision Analysis may be materially affected. Midgard also stated that the failure of NS Power's Monte Carlo analysis to incorporate the significant unknowns associated with decommissioning serves to undermine its usefulness in comparing the alternatives provided in the application.

3.1.2.4.2 Review by MS Consulting

[67] MS Consulting stated that the primary purpose of Monte Carlo Economic Analysis (MCEA) is:

... The primary purpose of using MCEA is to compare project alternatives and understand under which scenarios does the ordinal ranking of each alternative change. Once the variables are identified that change the ordinal ranking, investigation of the most significant variables should have priority funding in the next stage so that their ranges can be further refined and/or reduced (i.e., de-risked by progressive project development). Investigating these key variables allows for reduced project development costs.

One method of understanding critical conditions are "tornado diagrams". A tornado diagram runs the economic analysis moving each variable through its maximum and minimum range to determine the impact value on the outcome. This allows a user to see which variables are the most important to the desired outcome.

[Exhibit N-9, Appendix A, p. 6]

[68] MS Consulting does not believe that NS Power effectively completed a key variable investigation as part of the Annapolis Tidal Generating Station Decision Analysis. In particular, MS Consulting stated that there appear to be a number of inconsistencies in variable selection among NS Power's project alternatives. In addition, MS Consulting believes there are a number of clerical discrepancies in the Analysis, as well as several significant omissions. These omissions involve the impact of the station write off and terminal values of the station's assets. MS Consulting also noted that NS Power's Decision Analysis model is a "nominal" model, where all costs and revenues must be escalated. However, MS Consulting found that while project expenses are escalated in NS Power's model, operating expenses and the benefit of avoided expenses (i.e., revenue) are not. MS Consulting believes this is an error that penalizes the LEM and New Technology project alternatives.

[69] MS Consulting also noted that NS Power's application presented cost estimates that are to an AACE Class V level. Generally, this means that the estimates are prepared based on desktop studies where 0% to 2% of the related engineering is

complete. However, MS Consulting indicated that NS Power has completed field inspections and limited quantity take-off measurements for the LEM and Decommissioning options. As a result, MS Consulting believes that many of the engineering deliverables for those options are at an ACEC Class IV level or better, putting the New Technology alternative at a systemic disadvantage in the Decision Analysis. Further, MS Consulting stated that the capital cost ranges provided by NS Power are undefended, inconsistent, larger than typically supported by ACEC principles, and have unreasonable contingency values.

[70] Given the above findings, MS Consulting prepared its own modified Decision Analysis using what it believes are industry best practices and adjusted ranges for the key variables in the Monte Carlo Economic Analysis. The modified model also accounted for the clerical discrepancies and omissions that MS Consulting believes exist in the NS Power model, and adjusted the model from a “nominal” to “real” economic analysis. After preparing its modified model and completing the related analysis, MS Consulting found the preferred solution to be the LEM alternative. In the modified model results, MS Consulting said the LEM solution has the lowest P5, expected, and P95 costs. However, the cost ranges of the LEM project vary more widely in the modified model than the Decommissioning option, and therefore carry greater risk for ratepayers. MS Consulting stated that if certainty around cost ranges is more desirable, the Decommissioning option may still be the preferred option due to lower variability in costs.

[71] Overall, MS Consulting concluded that the Decision Analysis completed by NS Power did not develop all identified project alternatives to the same level of scrutiny and support, which does not align with typical project development principles. In addition,

MS Consulting found that the Decision Analysis contained inconsistencies in key variable selection, resulting in the RTFD option not necessarily being the lowest cost option and in the best interest of customers. These inconsistencies included disproportionate engineering effort on the presented alternatives, lack of investigation into key model variables, and different application of engineering principles for developing cost and contingency ranges. MS Consulting recommended that further refinement and engineering work be undertaken to validate significant assumptions to determine if the conclusion reached by NS Power's Decision Analysis is appropriate. MS Consulting recommended that this work include:

1. Authorize further engineering work to:
 - a. properly investigate the risk of sediment changes;
 - b. confirm the viability of rock filling during decommissioning;
 - c. properly understand fish protection for both the capital and competing operational solutions; and
 - d. properly understand the impact of proposed carbon taxes on NPSI's forecasted Levelized Cost of Power and how this asset can help support the move towards a carbon-neutral power grid.
2. Estimate current portion of capital costs that derive from USD priced goods and services.
3. Confirm parameters for the terminal value analysis.
4. Confirm economic impact on rate payers of early write off of the asset.
5. Complete missing AACE Class V deliverables including: risk register, schedule, project execution plan, stakeholder registry, regulatory and environmental road maps.
6. Complete a proper risk and contingency analysis on all viable options.

[Exhibit N-9, Appendix A, p. 21]

[72] MS Consulting also presented several process related recommendations for the Board aimed at improving the quality of future NS Power applications for Board approval. These include:

1. Develop all project alternatives with equal support during a Class V study;
2. Include Monte Carlo Economic Analysis in the project development process at the Class V stage. Take at least two options into a "modified" Class IV study.

Only develop those variables identified as key in the modified Class IV study to reduce project development costs;

3. Define expectations for submissions along AACE guidelines including a risk register, contingency analysis and schedule;
4. Define expectations for submissions for Monte Carlo Economic Analysis including formulas for all variables to provide transparency and ease of recalculation;
5. Retain or develop sufficient support resources to critique NSPI's submission for economic analysis; and
6. Require a defensible Risk and Contingency analysis completed by a qualified third party for capital cost ranges.

3.1.3 DFO issue

[73] NS Power stated that it was already reviewing the status of the Generating Station when there was a failure of the exciter on January 15, 2019. Moreover, NS Power noted that DFO issued a notice on April 1, 2019, stating that continued operation of the Generating Station would require authorization under the federal *Fisheries Act*. NS Power stated that it "factored these two events into the ongoing review and confirmed that the failure of the exciter constituted a 'run-to-failure' event". After incorporating these issues into its Decision Analysis, the Company ultimately decided that the Generating Station should be retired.

[74] In the lead up to its review of the Generating Station, there were already indications that NS Power may need to address DFO regulatory requirements with respect to its operation of the Station. In 2018, DFO advised NS Power:

...the Department of Fisheries and Oceans (DFO) initiated a Canadian Science Advisory Secretariat (CSAS) study in July 2018 and it was understood by NS Power at the time that the conclusions of the study could result in the requirement for a *Fisheries Act* Authorization in order to allow the Station to continue operation. NS Power determined, as a result, that a range of costs for potential permitting requirements and operating impacts related to fish protection would also need to be considered in the analysis.

[Exhibit N-1, p. 14]

[75] On April 1, 2019, DFO issued a letter to NS Power, stating, in part, as follows:

The operation of the Annapolis [Generating Station] has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act* unless authorized. The operation has also been reviewed to determine whether it is likely to affect listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*, unless authorized.

Based on the review of the available information, the Program has concluded that the following work, undertaking or activity is likely to result in serious harm to fish:

- The death of fish associated with the operation of the Annapolis [Generating Station] located in the Annapolis River estuary, Annapolis County, Nova Scotia.

The operation of the Annapolis [Generating Station] requires an authorization, pursuant to paragraph 35(2) (b) of the *Fisheries Act*. As your proposal will not result in prohibited effects on listed aquatic species at risk, no permit will be required under the *Species at Risk Act* at this time.

Please submit the following information and documentation to apply for a *Fisheries Act* authorization:

- a completed Application for Authorization under Paragraph 35(2) (b) of the *Fisheries Act* Form ...
- the required information and documentation set out in the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations* ...
- an irrevocable letter of credit (for requirements see: ... to cover the cost of implementing the offsetting plan, if you are required to provide one as set out in subsection 3(2) of the Regulations.

Should you be able to modify your operation to reduce the potential impacts to a level where serious harm to fish can be avoided and a *Fisheries Act* authorization would no longer be required. If you choose to modify your operation to avoid the need for authorization, please advise and submit in writing to DFO.

[Exhibit N-1, pp. 253-254]

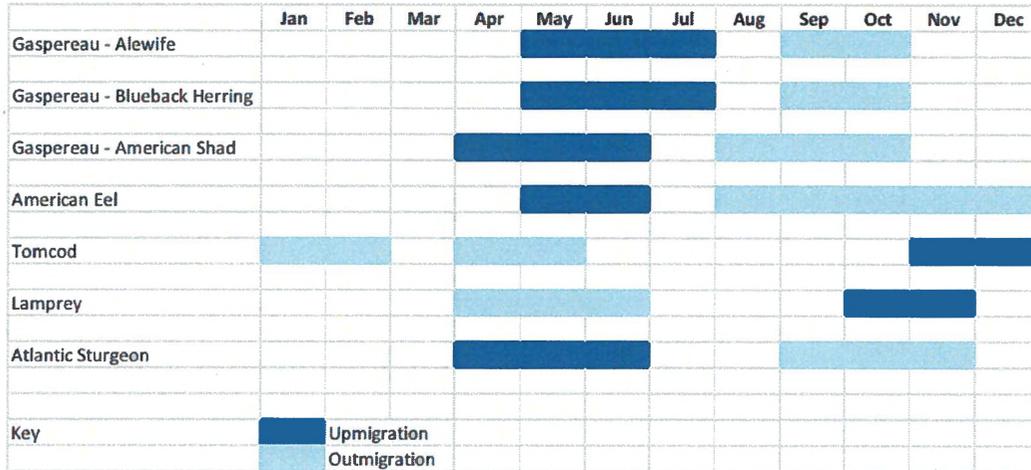
[76] It appears NS Power did not take any action whatsoever in relation to DFO's notice. It did not complete an application or develop any alternative compliance plan; it

did not conduct any studies with respect to the operation of the Generating Station and its impact on fish mortality; it did not conduct any analysis into modifying its operation to reduce or mitigate the potential impacts on fish so as to avoid the requirement for the DFO authorization; it did no analysis or consider other studies, short of operating the Generating Station, to determine the species of fish present in that location and their migratory patterns; and, remarkably, it did not engage with DFO personnel whatsoever on the issues related to the Annapolis site.

[77] Instead, in its Decision Analysis to determine the lowest cost option for the Generating Station, it used a probabilistic analysis to consider multiple variables and their probabilities to determine a broad range of outcomes and assess the range of risk associated with each variable, including for the DFO compliance issue. Such variables included, among others, the need for various studies on the species of fish impacted, their migratory patterns, and the potential impact of these factors on the periods the Generating Station may be allowed to operate throughout the year.

[78] The impact of shutting down the Generating Station due to fish migratory patterns is potentially significant. In its Reply Evidence, NS Power provided a chart depicting the overlap of migration periods of various fish species present at the Annapolis site:

Figure 1: Timing of Presence of Fish Species in the vicinity of the Annapolis Tidal Generating Station⁴⁵



[Exhibit N-11, p. 29]

[79] Indeed, one of the most important variables influencing the NPVRR outcome of the LEM scenario in the Decision Analysis was the fish shutdown period used in the modeling. At the hearing, Erin Peachey, NS Power’s Senior Project Manager, Capital Projects, confirmed that the construction capital and the fish shutdown periods were the two most significant factors influencing the outcome of the LEM analysis.

[80] Nevertheless, while NS Power indicated at various times that it engaged with DFO “to understand DFO’s expectations concerning an Authorization for the Station”, one is left wondering the extent of that engagement following the Company’s testimony at the hearing. Upon questioning by the Board, Terry Toner, Senior Director of Strategic Environmental Projects, confirmed that DFO was not contacted about the authorization for the Annapolis Generating Station:

Q. Okay. So, on receipt of the application, am I correct that you have not met formally with DFO on the issue of the authorization for the Annapolis Tidal Plant. You have not met with them formally, on that issue.

A. (Toner) That is correct.

- Q. So, there is no minute of any meeting that you ---
- A. (Toner) There's no minute, because there is no meeting.
- Q. Okay. So, you haven't -- you haven't spoken to them about it?
- A. (Toner) No, I've spoken to them about many other things, but not about that.
- Q. Okay. So, you actually still haven't spoken to them about it.
- A. (Toner) That is correct.

[Transcript, p. 205]

[81] The Board considers that the decommissioning option presented by NS Power also involves an environmental component, including compliance with DFO requirements. As noted in the application, the scope of the decommissioning involves returning the area to its original function before the Station was commissioned in 1984, with no water flow through the causeway at the location of the Station. No costs were included for decommissioning of the sluice gates, causeway, and fish passages because, pursuant to the Provincial Agreement, those assets would remain intact and operation and maintenance returned to the Province upon abandonment by NS Power. However, the Board infers that some costs would be involved for dealing with DFO, including engagement with Indigenous communities, about restoring the area to its original condition prior to the construction of the Generating Station. Notwithstanding the above, NS Power appears to have given little attention to this point in the decommissioning option of its Decision Analysis.

[82] In their Closing Submissions, the Consumer Advocate and counsel for the Industrial Group urged the Board to require NS Power to take further steps to better determine the costs associated with the DFO authorization. The Consumer Advocate submitted:

The Consumer Advocate is concerned by NS Power's lack of diligence to take even the most basic steps to speak with DFO regarding the authorization. Roughly 22 months elapsed between receipt of the April 2019 DFO letter and NS Power's filing of this application. It is the Consumer Advocate's view that NS Power's failure to take any steps to meet with DFO regarding the authorization has left a material gap in the evidence supporting this Application. That highly relevant (and currently absent) evidence would be required to make a determination as to whether the Annapolis Station is likely to provide a benefit to customers in the foreseeable future.

[Exhibit N-28, pp. 6-7]

Whether a two-year lead time (to bring the Application) is necessary or justified is not the primary question before the Board. However, having taken two years to prepare the Application, it is reasonable for the Board to expect very narrow information gaps. The estimated decommissioning costs and the steps required to comply with DFO's expectations are highly material factors that require more evidence than has been presented by NS Power.

[Exhibit N-28, p. 9]

[83] In her Closing Submission, counsel for the Industrial Group concluded:

At this stage, the Industrial Group shares the concerns expressed by the Board's consultants that there is an evidentiary lacuna; NSPI's decision to retire the Station as not used and useful has been made without fully assessing the alternatives and their costs. While we appreciate that NSPI has a history of dealings with DFO, it is not enough to say, effectively, "trust us; it's not worth it," rather than present a qualitative and quantitative evaluation of the options to avoid, mitigate or offset impacts to fish and fish habitat so as to secure a DFO Authorization.

The Industrial Group recommends that the Application be denied at this time, and that NSPI be directed to study the variables recommended by Midgard and Grant Thornton/MS. It would then remain open to NSPI to reapply, pending further evaluation of alternatives, if it still believed the Station to no longer be used and useful.

[Exhibit N-30, p. 4]

[84] In his testimony, Mr. Schoenhardt stated that he would have expected NS Power to incur some costs to help more precisely define the scope of the risks that may be required to address the DFO issues:

I've heard their discussion today about fish protection. I'm still of the opinion that monies spent during the project development stage at a Class 5 or a Class 4, where we are right now, is money well spent to avoid poor decisions. The decision in front of us today is some 30 million dollars, and spending about 10, 50, a 100,000 dollars to understand the consequences of the DFO's request is money well spent for ratepayers.

[Transcript, p. 232]

[85] It would have been helpful to the Board and the Intervenor customer groups if NS Power had provided greater certainty about the potential costs of DFO compliance and used these results in its probabilistic modeling and Decision Analysis, including for the decommissioning option. In the Board's view, this might reasonably have been accomplished if NS Power had engaged with DFO personnel to identify the priority concerns for DFO with respect to potential shutdown of the Generating Station during fish migration periods of various fish species (as identified in DFO's CSAS Report), and their expectations for alternative studies or data that could be submitted in potential compliance plans.

3.1.4 Findings

[86] The Board agrees with NS Power, supported by Mr. Reed's expert evidence, that where an asset is no longer used and useful, it should be removed from rate base as soon as practical to alleviate potential concerns about intergenerational inequities. That public utility accounting principle was not challenged by the parties or other expert witnesses. That said, for this principle to apply, NS Power must show in this case that the Generating Station is no longer useful, there being no dispute it is not currently being used. This means, in the context of this matter, that NS Power must establish the decommissioning option is the least cost option for ratepayers.

[87] The Board also agrees with NS Power's position, and Mr. Reed's opinion, that if decommissioning is the least cost option, Accounting Policy 6350 is applicable. As discussed during the hearing, as late as 2018, NS Power was making major capital investments with a view to keeping the Generating Station in service for a much longer period than the decommissioning option advanced in this proceeding. The current

depreciation rates do not align with the short-term decommissioning of the Generating Station. This proposed decommissioning, at a point much earlier than the expected useful life of a major asset, is the type of extraordinary and unexpected event which Accounting Policy 6350 is designed to address.

[88] Accounting Policy 6350 allows NS Power, with Board approval, to extend the write-off of an asset's undepreciated cost beyond the fiscal period when the determination is made that the asset is no longer used and useful. Otherwise, the entire undepreciated amount would have to be taken in one year. This part of the policy is applied when the amount of the write-off is significant. The policy allows for amortization on a straight-line basis over five years or such other time as is reasonable. The purpose of this accounting treatment is to avoid unreasonable impacts on rates occasioned by an extraordinary event.

[89] In this case, given the significant amount of the undepreciated cost remaining in rate base, NS Power proposed a 10-year amortization period. No party challenged the proposed length of the amortization period. It was supported by both Mr. Reed and Grant Thornton. The Board agrees that, if decommissioning is established as the least cost option, a 10-year amortization period appears to create a reasonable balance between negative impacts to current ratepayers and intergenerational equity considerations.

[90] The substantive issue in dispute in this case is whether NS Power has shown that decommissioning of the Generating Station is the least cost option for ratepayers. The Board recognizes that in preparing its case NS Power took several steps in this application which are appropriate. The use of external consultants to supplement

in-house expertise follows Board guidance. The Board acknowledges these consultants support the approach set out in the application. As well, the use of probabilistic modelling was appropriate in this case, given the number of uncertainties which could impact cost estimates. That said, the Board has determined it does not have enough information to find that decommissioning is, in fact, the least cost option. The Board therefore finds NS Power has not met the burden of proof to obtain the accounting treatment relief sought in this matter.

[91] The Board is in general agreement with the Intervenors, based on the evidence filed by Midgard and MS Consulting, that there are too many cost variables which have not been sufficiently addressed, or have been addressed in an inconsistent manner across the various options. The Board acknowledges there is contention between NS Power and MS Consulting as to the actual impact of certain inputs on the modelling results, including certain inputs used by MS Consulting. The Board also recognizes that Midgard's ultimate recommendation was that the LEM option be kept alive. This could theoretically be done by approving the current application and revisiting the issue, if necessary, when a decommissioning application is filed.

[92] That said, given the magnitude and scope of the unaddressed issues, the Board concludes approval of the accounting treatment at this point is premature. The evidence indicates there are varying levels of class estimates for the different options. In particular, the spread in NPVRR values between the LEM option and the decommissioning option are not that wide. In certain scenarios, the LEM option might actually be more cost-effective, although with greater risk.

[93] It is therefore important that, as far as it is possible, there be an apples-to-apples comparison between the LEM option and the decommissioning option. The Board is concerned that if the accounting treatment is approved now, there may be a tendency to focus on having the decommissioning option approved. This may create less incentive to continue robustly assessing the LEM option.

[94] The Board further notes the second largest cost input in the probabilistic modelling relates to the DFO issue. In the Board's view, the cursory nature of NS Power's review of this major cost is problematic. As well, no negotiations have taken place with the Province with respect to ultimate decommissioning. No engagement with Mi'kmaq First Nations has taken place. Assumptions have been made with respect to how engagement costs will vary between scenarios. The Board appreciates that the correspondence from Ms. Maloney, Executive Director of the Kwilmu'kw Maw-klusuaqn Negotiation Office, takes the position that the Generating Station "has operated for far too long". That said, alternative scenarios, impacts and costs have not been explored in any detail. While Ms. Maloney has outlined current concerns about the potential scope of engagement and consultation, the detailed views of the Mi'kmaq First Nations on the impacts of decommissioning, or any other option, and the potential cost impacts, are currently unknown.

[95] The Board understands there will be additional expenses in arriving at cost estimates that are more refined and comparable. Often it receives capital cost approval applications where the costs estimates are not of the same class for all options considered. There is an element of professional judgment involved as to the costs and benefits of further expenditures to refine cost estimates. That said, Midgard and MS

Consulting both said further investigation and assessment was warranted. The representatives of major classes of ratepayers, who ultimately bear the costs through rates, supported this proposition. Given that issues with significant cost overruns have arisen on some other major hydro projects, the Board agrees that as much detail as possible at the front end of the process might alleviate difficulties down the road.

[96] The Board further understands that probabilistic modelling can, to an extent, alleviate some concerns about different class level estimate inputs. Mr. Schoenhardt addressed this in response to a question from the Board:

A. But what you can do is, if you're assessing different projects, different levels of classifications and you're assessing a contingency method appropriately, rather than just applying the blanket 100 to 250 percent, you can account for that underlying different level of uncertainty. So, hopefully that answers your question.

Q. Okay.

A. So, can you compare a Class 5 with a Class 3, yes, but what you need is a sophisticated risk and contingency analysis to do so. You cannot use basic rules of thumb.

[Transcript, p. 271]

[97] The Board finds that NS Power did not adequately undertake this level of contingency analysis when entering inputs into the probabilistic modelling.

[98] Insofar as keeping the LEM option alive, as recommended by Midgard, the Board is of the view the best way to ensure that this occurs is if NS Power keeps all options open and continues refining costs associated with them until it is able to file its decommissioning option. This would seem to be the more standard and prudent way of proceeding. Delaying any eventual accounting treatment by another two years, if the application were ultimately approved, would not significantly impact intergenerational equity, when balanced with the goal of obtaining the best and most comparable data which can reasonably be provided.

[99] While it will not direct NS Power to undertake any specific studies, it would seem to the Board that the following information would be of assistance in determining the least cost option in this matter:

1. A more fulsome assessment of LEM costs;
2. A more fulsome assessment of the new technology option, including:
 - a. A more thorough assessment of options and costs to change station capacity under the new technology option; and
 - b. Solicitation of pricing from multiple manufacturers for the new technology option;
3. A more fulsome assessment of sedimentation issues and costs associated with the decommissioning option;
4. Completion of environmental studies needed to assess environmental risks and costs associated with each alternative;
5. A more fulsome assessment of station asset disposal options;
6. A detailed explanation of why capital cost estimates for the decommissioning option have decreased so dramatically from the estimates included in NS Power's 2018 Hydro Asset Study;
7. Engagement with DFO personnel on if NS Power can satisfactorily present alternative studies or data on fish migratory periods and fish mortality for the site, short of returning the Generating Station into operation, including potentially modifying its operation to reduce or mitigate the potential impacts on fish so as to avoid the requirement for a DFO Authorization;

8. Engagement with DFO personnel on whether it would consider any compliance plan with an accompanying request for authorization. If DFO will entertain such a request, NS Power could estimate the cost of preparing and implementing a compliance plan in its Decision Analysis;
9. Engagement with DFO personnel and the Province on any *Fisheries Act* or environmental compliance issues under the Decommissioning option with respect to restoring the area to its original condition (i.e., with no water flow through the causeway at the location of the Generating Station and any resulting decommissioning compliance costs related to the sluice gates, causeway, and fish passages). The results of these discussions could be incorporated into the Decommissioning option in the Decision Analysis; and
10. With respect to the above initiatives, engagement with Indigenous communities respecting the various options (including LEM, New Technology and Decommissioning), to better inform the potential costs to be incorporated into the Decision Analysis.

[100] While the Board is of the view that the accounting treatment of the Generating Station is best addressed as part of a decommissioning application, it will not specifically direct NS Power how to proceed in this matter. If NS Power is of the view that it has sufficient evidence at any point to address the Board's concerns, it can reopen the application. As well, to keep abreast of the matter, the Board directs that NS Power provide a status update by January 31, 2023. In the interim, the Board will keep the application in abeyance.

3.2 Confidentiality of data relating to options

[101] When NS Power filed this application, it requested confidentiality over certain information pursuant to Rule 12 of the *Board Regulatory Rules*. Appendix G is an Excel file which contains the Company's data and modelling for its probabilistic analyses of the various options considered when NS Power was deciding the best course of action to take with the Generating Station. It is referred to in the evidence as the Decision Analyses. It was filed as an entirely confidential document because NS Power explained that it was unable to redact confidential information in electronic Excel files. NS Power went on to explain that information derived from confidentially filed data was also redacted from the body of the application. This included the NPVRR figures for each option considered by the Company. These are the values used to compare the relative cost of the various options to ratepayers.

[102] NS Power said confidentiality was required to protect customers by mitigating the risk that competitors or vendors could access proprietary or commercially sensitive information. NS Power explained that the more knowledge potential suppliers have about NS Power's costs, the less competitive the bidding process becomes.

[103] On February 25, 2021, the Board approved NS Power's confidentiality request "subject to the right of any party to object to such treatment in accordance with the *Board Regulatory Rules*." No party to this proceeding objected to the confidential treatment of the redacted materials.

[104] During the hearing, certain redacted information, related to both total NPVRR values and percentage differences between these values, was referenced in both questions and answers. This is perhaps not surprising, since the type of information referenced in the hearing is usually not filed in confidence. There was also some

uncertainty as to whether certain referenced information was in fact confidential. In any event, the Board indicated the transcript should be reviewed prior to it being posted on its website.

[105] NS Power suggested the following transcript redactions, which the Board has summarized with the assistance of Ms. Rubin's submissions:

- **Page 95, Line14** Estimated cost of decommissioning.
- **P95 L17-18 & P96 L11-12** Total estimated costs, including decommissioning.
- **P98 L6 & L20** Total (rough) estimated costs, including decommissioning.
- **P100 L18-19** Relative dollar cost difference of scenarios.
- **P103 L15-16** Dollar value for escalation adjustment.
- **P152 L19** Percentage value.
- **P153 L5 & L7** Studies cost.
- **P232 L6** Percentage value.
- **P246 L7 & L21-P247 L1** Percentage value.
- **P261 L1** Percentage value.
- **P282 L17** Relative cost of alternatives.

[106] The suggested transcript redactions put a focus on the confidentiality issue. It caused the Board some concerns, both as to specific redactions, and as to potential issues of transparency if NPVRR comparisons could not be discussed in its decision. The Board wrote to the parties on September 24, 2021, stating in part:

The Board has concerns about the necessity of some of the redactions in the Transcript. As the parties will be aware, the Board strives for transparency in its reasons set out in its decisions. In this matter, an important issue canvassed in the evidence is the magnitude of the difference and the ranking among the options to decommissioning. In its decision, the Board may be required to comment on the relative difference among the various options in its consideration of NS Power's overall application.

The Board notes that Rule 12 of the *Board Regulatory Rules* addresses confidentiality. The burden of satisfying the Board that a document should be held in confidence is on the party claiming confidentiality.

In particular, the Board observes that the percentage differences among the various options have been redacted. Specifically, the Board questions why percentage values set out at pages 232, 246, 247 and 261, where the numbers to which these percentages apply are not revealed, should be considered confidential. This concern was raised by the Board during the hearing. Further, on page 152, NS Power redacted a percentage figure. However, on page 21 of 60 of its Reply Evidence, this number does not appear to be redacted.

[107] In an October 7, 2021 letter, NS Power agreed the percentage values set out at pages 246, 247 and 261 of the transcript could be treated as non-confidential. NS Power also advised it was no longer seeking confidential treatment of the requested redaction at page 152 of the transcript. NS Power did not agree the percentage value at page 232 of the transcript should be disclosed, as the confidential figure to which it relates had been inadvertently disclosed.

[108] The Company maintained the other redactions were appropriate, including the NPVRR outcomes associated with the Decision Analysis. On this latter point, the Company stated:

NS Power confirms that it continues to seek confidential treatment for the information which has been filed confidentially in this proceeding, including the NPV RR outcomes associated with the Decision Analysis. As noted in the NS Power Letter, this is because release of this information could prejudice NS Power's ability to procure services and equipment on the most competitive terms or otherwise undertake the necessary work at the lowest cost for customers. If potential vendors, or stakeholders, are aware of the difference between alternatives under consideration by NS Power, they could potentially seek to use this information in negotiating to adjust the terms offered to, or the scope proposed by, NS Power such that that the difference between such alternatives is reduced or exhausted.

[109] The CA said the percentage value set out at page 232 of the transcript should be disclosed as the figure to which it relates had now been redacted from the transcript. NS Power's response to this is that it was publicly reported in the press. The CA further indicated NS Power should, in future, strive to make disclosure of relative percentage differences publicly available so the public can understand Board decisions.

[110] Ms. Rubin, on behalf of the Industrial Group, submitted that NS Power had not provided any rationale for the suggested redactions which it still sought, beyond generic statements about the potential impact on competitive bidding. She went on to say:

The Industrial Group is concerned there continues to be a creeping tendency toward more and more confidentiality. As recently as the FAM Audit, NSPI was challenged on its extensive redactions for confidentiality, resulting in referral of this issue to the FAM Small Working Group.

It is acknowledged that knowledge of specific contract values or units as an input has the potential to influence competitive bids, but when the figure being redacted is the cumulative dollar value comprised of multiple inputs, or a relative percentage of two global values to compare alternatives, the ability for a competitor to extract meaningful information to the prejudice of NSPI's customers is not at all evident. It is not enough to make generalized assertions about confidentiality when the starting point is openness and only when it is demonstrably necessary should public access and transparency be curtailed.

In prior ACE submissions for the past few years, even when NSPI redacts information regarding the estimated costs of specific portions of a capital project, it has provided the total amount of the project, along with the % of contingency applied. There are countless examples in which NSPI has redacted the amounts for specific portions of each of the capital projects, but included subtotals, overall totals, and the contingency % applied for each project.

Reference is also made to *Nova Scotia Power Incorporated (Re)*, 2019 NSUARB 11, the application for approval of capital work for the Tusket Main Dam Refurbishment. The decision reads:

[138] The results of the new EAM attached as Appendix C to NS Power's Reply Evidence indicates the following:

Figure 5. Summary of Project Alternatives

	Alternative	PV of Revenue Requirement	Rank
A	Refurbish Main Dam	17,042,259	1
B	System Partial Decommissioning	28,260,981	2
C	System Full Decommissioning	55,176,532	3

[Exhibit N-21, p. 40]

[139] While not entirely convinced that the cost differences would be as large as suggested by NS Power, given the magnitude of the potential decommissioning costs, and the potential they could be understated, from an economic analysis perspective, in the particular circumstances of this Application, NS Power has satisfied the Board that replacement of the Tusket Main Dam, as proposed, is justified.

In relation to Tusket, NSPI provided the specific amounts in comparing the options of refurbishment to decommissioning, in order for the Board to decide what was in the best interest of the customers. The Board had to consider the potential costs of each, and the difference between each, in determining whether the replacement of the Dam was justified.

[Exhibit N-30, pp. 5-6]

[111] Ms. Rubin submitted the Tusket Main Dam Refurbishment matter was directly on point. If the NPVRR values could be disclosed in that matter, there was no basis for not providing similar information in this proceeding.

[112] In its Reply Argument, rather than providing more detailed information to justify its position that the release of information related to NPVRR figures, or total cost amounts, could realistically lead to potential suppliers gaining a bidding advantage which could harm ratepayers, NS Power essentially reverted to a procedural argument. The Company said it made a confidentiality request pursuant to Rule 12 which was granted. No objections were filed, and it has governed itself accordingly. NS Power submits it is now being asked to justify redactions outside the *Board Regulatory Rules* process.

[113] The Board has concerns about the manner which NS Power appears to be approaching issues of confidentiality. Under *Rule 12*, the default position is that documents are filed unredacted on the public record. *Rule 12(4)(b)(i)* requires "...details of the nature and extent of the specific harm that would result if the document were publicly disclosed...".

[114] In the case of sensitive financial or commercial information, under *Rule 12(10)* NS Power must show that "...the desirability of avoiding disclosure ... outweighs the desirability of adhering to the principle that documents be available to the public". This means there must be a significant public interest component related to the non-disclosure of this type of information. Unlike private litigants in a court process, NS Power is subject to continuous oversight by the Board. There is a significant public interest in

not having the regulatory process itself create undue costs to NS Power, and by extension the consumers of its regulated monopoly service. In other words, disclosure of financial or commercial information which undermines NS Power's ability to obtain goods and services at the lowest possible cost impacts NS Power's customers, which include most businesses and residents of the province. That said, there is still a balancing act to be performed between a demonstrable risk of harm and the transparency of a public process.

[115] If disclosure of cumulative cost totals, subtotals and NPVRR values have not caused undue harm to competitive bidding in the past, and no evidence has been submitted to show harm based on this past practice, it begs the question as to why NS Power would submit it could reasonably do so in this application. One difference is the NPVRR figures are derived not only from cost inputs, but from the probabilistic modeling pursuant to the Decision Analysis. The model is explained to some degree in the application. The Board has some concern about the potential for reverse engineering to derive specific cost figures.

[116] Based on this concern, as well as a concern about procedural fairness related to addressing confidentiality rulings outside the full *Rule* 12 process, the Board has decided not to revisit its prior confidentiality ruling at this late stage. The Board is satisfied that the remaining redactions in the transcript are related to or derived from information which has been ruled to be confidential. It, therefore, accepts NS Power's remaining suggested redactions.

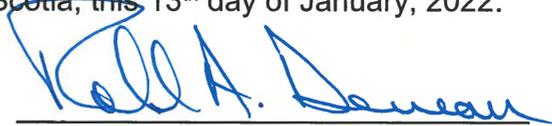
[117] The Board would put NS Power on notice that it has serious concerns about what it perceives to be slippage in its approach to confidentiality. It will expect a full and robust explanation, backed by evidence, to support any future similar request for the

confidential treatment of cumulative cost totals, subtotals, NPVRR values and comparisons, or similar data and information. While the Board is always mindful of regulatory burden, it is becoming apparent such an approach will be necessary and may well extend to many requests for confidentiality.

4.0 CONCLUSION

[118] The Board has determined that it has insufficient evidence at this time to find that decommissioning of the Generating Station is the least cost option for ratepayers. It therefore is not able to find that the asset is not used and not useful in accordance with Accounting Policy 6350. Therefore, the Board will not approve the application at this time. The Board believes the best way of proceeding is to reconsider the application for accounting treatment approval along with a decommissioning application. That said, NS Power is at liberty to reopen the matter if it is in a position to address the Board's concerns.

DATED at Halifax, Nova Scotia, this 13th day of January, 2022.



Roland A. Deveau



Steven M. Murphy



Richard J. Melanson