

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF THE PUBLIC UTILITIES ACT

- and -

IN THE MATTER OF a public hearing for **NOVA SCOTIA POWER INCORPORATED'S**
Fuel Adjustment Mechanism (FAM) Audit for 2022/2023 by Bates White Economic
Consulting, LLC

BEFORE: Stephen T. McGrath, K.C., Chair
Roland A. Deveau, K.C. Vice Chair
Steven M. Murphy, MBA, P.Eng., Member

APPLICANT: **NOVA SCOTIA POWER INCORPORATED**
Blake Williams, Counsel
Jennifer Power, Counsel
Mollie Morris, Counsel

INTERVENORS: **CONSUMER ADVOCATE**
David J. Roberts, Counsel
Michael Murphy, Counsel

SMALL BUSINESS ADVOCATE
Melissa P. MacAdam, Counsel
Rebekah L. Powell, Counsel

EASTWARD ENERGY INC.
Allison Coffin
Angela Costello

INDUSTRIAL GROUP
Nancy G. Rubin, K.C.
Brianne Rudderham, Counsel

NS DEPARTMENT OF ENERGY

Daniel Boyle, Counsel

PORT HAWKESBURY PAPER LP

Melanie Gillis, Counsel

BOARD COUNSEL: William L. Mahody, K.C.

HEARING DATE(S): March 17-20, 2025

FINAL SUBMISSIONS: July 18, 2025

DECISION DATE: October 16, 2025

DECISION: The Board disallows \$1,141,261.58, plus interest to be credited to the FAM. NS Power is directed to file FAM Audit Action Plan updates on the implementation of the recommendations and take the other steps set out in this decision.

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1.0 SUMMARY

[1] Nova Scotia Power Incorporated's fuel and purchased power expenses are more than 50% of the utility's annual cost to supply Nova Scotians with electricity. NS Power recovers these costs under a Board-approved fuel adjustment mechanism (FAM), designed with the intent that NS Power's customers pay only the utility's actual, prudently incurred, fuel and purchased power costs.

[2] NS Power's FAM operates under a Board-approved Plan of Administration (POA). The POA requires that amounts charged through the FAM must be periodically audited for completeness and accuracy and to ensure that the fuel and purchased power costs were incurred reasonably and prudently. Qualified independent auditors appointed by the Board conduct these audits, which normally cover two-year periods. Audit reports are considered in a subsequent FAM hearing. This decision is about the FAM Audit for 2022 and 2023.

[3] The FAM Audit report for this matter was filed in July 2024, and the hearing was held in March 2025, after typical pre-hearing procedures and filings. On April 1, 2025, on proclamation of the *Energy and Regulatory Boards Act*, SNS 2024, c 2, Sch A, the Nova Scotia Utility and Review Board (NSUARB) was succeeded by the Nova Scotia Energy Board for all applications related to electric utilities. References to the "Board" in this decision refer to the Board that existed at the relevant time.

[4] The Board engaged Bates White Economic Consulting, LLC (Bates White), to do the audit. Bates White presented its conclusions and made 34 recommendations in its audit report, filed on July 5, 2024, NS Power filed its Reply Evidence on September 13, 2024, and accepted all the recommendations. It also provided an Action Plan to implement the recommendations.

[5] While Bates White did not recommend that NS Power be disallowed from recovering any FAM costs it incurred in the audit period, several Intervenors in this proceeding did suggest disallowances. The facts surrounding these various instances were reviewed in responses to Information Requests (IRs) exchanged prior to the hearing, in evidence filed on December 13, 2024, by a consultant engaged by the Consumer Advocate, in Rebuttal Evidence filed by both Bates White and NS Power on February 21, 2025, and in the four-day hearing held by the Board.

[6] In one such instance, the Board disallows NS Power's FAM costs.

[7] In January 2023, a manual suction valve on the Trenton Unit 5-2 boiler feed pump was not opened prior to starting the pump, leading to pump damage and failure. Plant personnel discussed the importance of ensuring the manual suction valve on the feed pump was open prior to starting the pump. The failure required Trenton Unit 5 to be offline for maintenance for several days in January and February 2023, longer than otherwise would have been required. NS Power incurred extra dispatch costs due to the failure (i.e., they had to obtain other more costly sources of energy while Trenton Unit 5 was offline). These extra costs were calculated at \$1,141,261.58. The Board finds that NS Power was imprudent and orders a disallowance of this amount, plus interest, to be credited to customers in the FAM.

[8] To put this in context, the total disallowance, of approximately \$1.1 million plus interest, is a small fraction of the approximately \$1.7 billion in FAM costs incurred by NS Power over the 2022 and 2023 audit period.

[9] The Board also directs NS Power to take the following actions:

- To file FAM Audit Action Plan updates, beginning February 1, 2026, and continuing every six months until all matters are resolved.

- To provide for the FAM Auditor's review in the next FAM Audit, the actual net benefits of NS Power's hedging program by month during the audit period.
- To provide wind curtailment data in its monthly FAM reports and to engage with interested parties in the FAM Small Working Group on the form and content of what is presented, as well as to provide the requested information on its new tools for reporting wind curtailment. An update is to be provided in NS Power's first FAM Audit Action Plan update.

2.0 BACKGROUND

[10] Consistent with the POA for NS Power's FAM, the Board engaged Bates White to audit NS Power's operation of the FAM in 2022 and 2023. The most recently completed audit covered 2020 and 2021 and was the subject of a Board decision dated February 21, 2024 [2024 NSUARB 34] (M10416).

[11] Section 5 of the current POA, which is materially the same as existed during the audit period, addresses the audit requirements:

5.0 AUDIT AND OVERSIGHT

The amounts charged through the FAM shall be subject to periodic audit to assure completeness and accuracy and to assure fuel and purchased power costs were incurred reasonably and prudently. The results of any audit shall form part of the issues for consideration by the Board in a subsequent FAM hearing to consider the re-setting of the Base Cost of Fuel, or setting of the Fuel Adjustment Factor, or a General Rate Case at the request of NS Power or any interested stakeholder or upon Board order. Following consideration of the audit in any such hearing, the Board may make such adjustments (with interest if appropriate) to existing balances or to already recovered amounts as it may find necessary.

Audit Process

The Board shall provide for the conduct of a Fuel Adjustment Mechanism (FAM) audit during the 2023-2024 GRA Period as it deems appropriate. The Board shall have a qualified independent firm conduct the audit. The audit will address the financial and management/performance aspects of NS Power's fuel procurement and recovery under the FAM. The audit will include the FAM Formula, actual fuel and purchased power costs, contracts and management performance that affect the audit period from January 1 to December 31 of the years within the audit period. Audits will normally cover two-year periods or such periods as determined by the Board.

Objectives and Scope of the Audit

The overall objective of the FAM audit will be to examine operational and managerial aspects of the fuel and energy procurement, management, and

production functions and activities of NS Power, including any fuel or energy related affiliate transactions that involve these functions and activities directly or indirectly. The review will address adherence to good utility practice and consistency with the policies and procedures governing NSPI's procurement as described in the NS Power Fuel Manual.

The Scope of the Audit will include a review of fuel and energy procurement, fuel management, and generation production to determine whether NS Power has, in the period following that covered by the last preceding audit, conformed and may reasonably be expected to continue to conform to good utility practice...

...

Prior to setting the final audit scope, the auditor shall meet with NS Power and interested stakeholders.

Timing of the Audit

Audits are expected to commence in February of every second year or at such time as directed by the Board. Final reports will normally be filed by July 2 of every second year or on such a date as directed by the Board. The final report will evolve from a draft report which is provided to NS Power and the Board within 30 days of the filing of the final report. The draft report should contain functional area task reports, a management summary, and include findings of operating effectiveness and efficiency, as well as any recommendations for adjustments in costs or changes in functions and activities.

...

Significant FAM Changes

Where, in the absence of a General Rate Application, an increase for any customer class of more than 10 percent compared with the rate payable in the prior year is caused by the application of the FAM procedures, the Board should consider appropriate measures to assist customers.

The Board will monitor the operation of the FAM closely and reserves the right to intervene in any circumstance where it believes an increase to a customer class is not acceptable or in the public interest and take such steps as it considers appropriate to assist such customers including deferring a part of the increase for collection in a future time period.

[M11127, FAM POA, May 8, 2023, pp. 26-29]

[12] In 2022, NS Power incurred approximately \$949.7 million in FAM costs and in 2023 the total FAM costs were \$777.0 million. FAM costs incurred during the audit period were approximately \$1.7 billion.

[13] Consistent with past audit reports, Bates White noted that NS Power was cooperative and responsive throughout the audit period. As noted in prior FAM Audit

Decisions, the Board considers the conduct of the FAM Audit between the auditor and the utility to be constructive and in the best interests of all FAM customers.

[14] As noted above, NS Power filed an Action Plan to implement Bates White's recommendations. In its Rebuttal Evidence, Bates White considered this as a good faith commitment to accept and implement the recommendations going forward, but it did not consider the issues resolved. Bates White noted it is important that the FAM Audit Action Plan be vetted by stakeholders, reviewed and addressed by the Board, and monitored in detail going forward to ensure NS Power follows through on its commitments and that NS Power's activities meet the spirit of the recommendations.

[15] The Board agrees that the overall audit process benefits from ongoing monitoring and reporting, and this approach has been adopted over the past few audit periods. NS Power is directed to file semi-annual FAM Audit Action Plan updates, beginning February 1, 2026, and continuing every six months thereafter until all matters are resolved.

3.0 ISSUES

[16] The FAM Audit report examined operational and managerial aspects of NS Power's fuel and energy procurement, management, and production functions and activities, including any fuel or energy related affiliate transactions. The Board has limited its discussion of issues in this decision to those it deemed to warrant more specific consideration at this time, based on the recommendations in the audit report and the evidence and submissions filed by the parties in this proceeding.

3.1 Prudency Test

[17] NS Power is entitled to recover its prudently incurred expenses. In 2005, the Board considered in detail when it might disallow costs for imprudence:

[84] The Board has reviewed the submissions of NSPI, and certain of the other intervenors, with respect to the issue of imprudence. NSPI, in its rebuttal evidence addresses the standard for prudency and cites the following as an established definition of this issue:

As noted in the testimony of John Stutz, certain ratemaking principles must guide the Board in its review of NSPI's proposed 2005 Rates. The presumption in rate making, of course, is that a utility will recover in its rates its prudently incurred expenses. With respect to fuel costs, there are also standard principles which Dr. Stutz and the other consultants fail to recognize.

The standard for determining prudency of a utility's fuel procurement practices is well established. As stated by the Illinois Commerce Commission, "prudence is that standard of care which a reasonable person would be expected to exercise under the same circumstances encountered by utility management at the time decisions had to be made....Hindsight is not applied in assessing prudence....A utility's decision is prudent if it was within the range of decisions reasonable persons might have made. ... The prudence standard recognizes that reasonable persons can have honest differences of opinion without one or the other necessarily being imprudent.

(Exhibit N-42, pp. 28-29)

...

[87] SEB also provided helpful material on the question of imprudence:

In its Rebuttal Evidence (Exhibit N-42 [N-44 confidential]) NSPI, through Ms. Emily Medine, raises the issue of the prudence standard as defined by the Illinois Commerce Commission. During various portions of its cross-examination NSPI referred to this Illinois Commerce Commission definition. SEB submits that this (and any other) definition of prudence must be viewed in the wider context of the actions of the utility that led up to the decisions in question, as this Board and various other courts and commissions have found in the past. The following discussion sets out this wider context, particularly as it applies to NSPI's obligations as the incumbent monopoly electric supplier.

Subsection 45(2) of the Nova Scotia *Public Utilities Act* provides as follows:

"Such return shall be in addition to such expenses as the Board may allow as reasonable and prudent and properly chargeable to operating account, and to all just allowances made by the Board according to this Act and the rules and regulations of the Board" [Emphasis added.]

In general, the starting point is the presumption that the expenses of a utility are prudent. However, once a doubt is raised about a given investment or expense, the burden shifts firmly to the utility to demonstrate that the investment or expense was both reasonable and prudent (see for example: *Gulf States Utilities Company v. Louisiana Public Service Commission* (578 So. 2d 71, Util. L. Rep. P 26,061 (West) p. 16); and *Entergy Gulf States, Inc. v. Public Utility Commission of Texas* (112 S.W. 3d-208, Util. L. Rep. P26,862 (West) p. 8).

To meet this burden, the jurisprudence imposes a clear requirement that the utility produce evidence of what the decision was based upon. The decision-making process includes:

“ . . . decision inputs, assumptions, forecasts and studies which might have affected the decisions made by management.” (*Gulf States Utilities Company, ex parte Louisiana Public Service Commission* (1988 WL427505 (La. P.S.C.) (West) p. 8)

Furthermore, in *Gulf States Utilities Company v. Public Utility Commission of Texas* (841 S.W. 2d 459, Util. L. Rep. P26,337 (West) p. 19) it was noted that:

“[a] utility without contemporaneous evidence to support is decision-making process faces a heavy burden . . .”

Accordingly, not only does NSPI bear the burden of proving that its decisions were prudent, but they are also required to put forward evidence of what activities it undertook to underpin those decisions. If there is little or no evidence of facts, actions, analyses, etc. upon which the utility could reasonably have based a carefully thought-out decision, then it has not discharged its burden of demonstrating that the decision itself is prudent.
...

SEB agrees that a utility's decision should not be found imprudent merely because, with the benefit of 20/20 hindsight, a different decision would have been made. However, as the Board will note from the jurisprudence, there is a heavy burden on the utility to show evidence that supports its decision making, and such decisions must be shown to be the result of a logical process guided by a reasonable set of considerations and based on information that is both relevant and sufficiently comprehensive. As will be noted in various sections of this Argument, SEB is of the view that NSPI has clearly failed to meet this burden in relation to a number of matters.

(SEB, Final Argument, pp. 9-12)

[88] The Board has reviewed the case law cited by the intervenors and NSPI on the question of the acceptable legal standard for a finding of imprudence. As SEB notes, s. 45(2) of the Act identifies that expenses which the Board may allow a utility to charge must be “... reasonable and prudent and properly chargeable ...”. The Board agrees with Avon and SEB that, while expenses are generally presumed to be prudent, when questions are raised with respect to prudence, the burden falls to the utility to satisfy the regulator that its actions were prudent and reasonable.

[89] While the Board recognizes that the definition of imprudence varies somewhat among the jurisdictions cited, there are several fundamental principles which are common. These include:

- Were the utility's decisions reasonable in the context of information which was known (or should have been known) at the time?
- Did the utility act in a reasonable manner and use a reasonable standard of care in its decision-making process?
- The imprudency test should relate to the circumstances at the time in question and not to hindsight.

[90] While several cases were cited on this issue by the parties, NSPI referred in particular to a decision of the Illinois Commerce Commission noted earlier. Following a review of the cases, the Board finds that the definition of imprudence as set out by the Illinois Commerce Commission is a reasonable test to be applied in Nova Scotia.

[2005 NSUARB 27]

[18] The Industrial Group's closing submissions in this proceeding listed the following principles about the prudence of utility expenses, which it extracted from the legislation and case law:

1. The Board may allow the utility's expenses which are "reasonable and prudent and properly chargeable."
2. NSPI benefits from an initial presumption that its decisions are prudent.
3. The presumption of prudence is rebutted when questions are raised. This is the first stage. Hindsight may be used at this stage.
4. When prudence has been called into question, NSPI must discharge its burden to satisfy the Board that it applied a reasonable standard of care in its decision-making and actions, and that its expenses were reasonable and prudent based on information known or ought to have been known at the time. This is the second stage. Hindsight may not be used at this stage.
5. If a finding of imprudence is made, the Board may disallow costs which have been imprudently incurred. [Footnotes omitted]

[Industrial Group, Closing Submissions, pp. 2-3]

[19] The Board finds this to be a helpful summary. In this case, there did not appear to be significant disagreement over these principles (except for the use of hindsight to rebut the presumption of prudence). There was considerable disagreement about how these principles applied in the context of a FAM Audit. Positions differed on

the threshold for rebutting the presumption of prudence. The parties also debated when human error might amount to imprudence.

3.1.1 When is the presumption of prudence rebutted?

[20] A reasonable question about a utility expenditure may rebut the presumption of prudence and, if so, the burden then shifts to the utility to show that it prudently incurred the expense. NS Power said displacing the presumption required a party to adduce evidence, analysis, or rationale to show that the question had “teeth”. The intervenors submitted that the burden on a party to raise a reasonable question about a particular expense should not be onerous.

[21] In its closing submissions, NS Power submitted that, although evidence instilling “strong confidence that NS Power acted imprudently” is not required, a party questioning prudence must do more than raise a speculative or unsubstantiated challenge. NS Power said “the threshold for shifting the burden must require that the prudence question be supported by some credible evidence, analysis, or rationale.” NS Power further submitted that, in the context of a FAM Audit, the evidence, analysis, or rationale of a party questioning prudence “should consider the auditor’s findings and adduce new evidence or explain what the auditor may have missed to draw a different conclusion.” NS Power said allowing parties to revisit and re-argue points already examined by the auditor without new evidence risked undermining the purpose of the audit process and would result in a second, “piecemeal audit, rather than a focused review guided by principles of fairness, efficiency, and proper procedure.”

[22] Based on the Supreme Court of Canada decision in *Ontario (Energy Board) v Ontario Power Generation Inc.*, 2015 SCC 44, the Industrial Group submitted that since

there is no requirement for the Board to apply a presumption of utility prudence, the standard to rebut the presumption should not be too high. Citing past Board, United States Federal Energy Regulatory Commission (FERC), and Ontario Energy Board decisions, the Industrial Group said, “the presumption of prudence can be rebutted where questions are raised that the *outcome* is unreasonably adverse to customers in terms of the costs, (the permissible hindsight consideration to overcome the presumption) or that the utility’s conduct itself (i.e., its decision-making) was inconsistent with good utility practices.”

[23] The Industrial Group also disagreed that the audit context required a party to show that the auditor missed something. The Industrial Group submitted the standard applied by the auditor for recommending a disallowance was not the prudence test historically applied in Nova Scotia. NS Power disputed this. In its reply submissions, NS Power argued that consistent with the prudence standard, the auditor properly recognized that a disallowance should not be lightly recommended and should be supported by sound evidence to conclude that NS Power acted imprudently resulting in cost implications.

[24] The Industrial Group also submitted that NS Power’s position imposed an inappropriate burden on those challenging NS Power’s prudence in a FAM Audit proceeding:

...contrary to the argument of NSPI, the burden is not upon intervenors to “challenge the auditor’s findings” on prudence or “explain why their opinion differs”. The burden on intervenors is merely to raise a question to overcome the presumption of prudence; thereafter, the burden is on NSPI to affirmatively establish the reasonableness of its actions and decision-making and the costs which flow from that decision.

[Industrial Group, Closing Submissions, p. 3]

[25] Likewise, the Consumer Advocate said:

This is not to suggest that a question concerning prudence should be raised without at least some basic foundation in the evidence. However, NS Power appears to want more than

that – apparently, in NS Power’s view, the party raising the question must not only refer to the audit findings, but also “adduce new evidence or explain what the auditor may have missed to draw a different conclusion.” This standard would require far more than a simple foundation in the evidence. Instead, the party raising the question, who in all cases would lack the same level of access to information as the utility and the FAM Auditor, must somehow present “new evidence” to essentially “rebut” not just the “presumption of prudence,” but also the evidence and conclusions reached in the FAM Audit report itself. In effect, NS Power’s “suggested” prudence test effectively shifts the burden to the customer groups. The Consumer Advocate states that this would, in many cases, present an impossible burden for any intervenor to bear, and effectively render the prudence review useless, except and only in cases where the FAM Auditor themselves have concluded that a disallowance is warranted.

This concern is particularly acute because Bates White, the auditor appointed in this case, has indicated they only recommend a disallowance when they have “strong confidence” that NS Power acted imprudently. As they have acknowledged, this reflects a cautious practice on the part of the auditor, as opposed to the auditor’s application of the Board’s own standard. This cautious approach is perhaps understandable given the auditor’s role; however, it would be unfair to then expect intervenors to necessarily present evidence to “overcome” such a cautious assessment before the Board will even consider disallowances. Nevertheless, in this present matter, NS Power has argued that the evidence of the auditor is to be preferred because “Bates White is in a superior position to Mr. Wilson to understand the incidents and their root causes.” This is because, according to NS Power, “Bates White conducted a fulsome review,” and, through the audit process, “conducted in-depth interviews with Power Production Leadership over multiple hours after reviewing the RCA documentation.” It is difficult, if not impossible, to imagine a scenario where intervenor consultants would be provided a similar opportunity, and nor would such an approach provide for administrative efficiency in this process. [footnotes omitted]

[Consumer Advocate, Closing Submissions, p. 5]

[26] The Small Business Advocate said:

...If intervenors were not able to raise questions of imprudence that differ, expand or identify new areas from that of the auditor’s report, it would reduce the intervenors’ role to simply one of agreement or disagreement with the auditor’s report rather than fully engaging as an intervenor in the regulatory process.

While it is acknowledged that concerns about prudence should be substantive, the SBA respectfully submits that the standard cannot be so high that it is unattainable by intervenors without undertaking the same level of investigation as completed by the auditors. A balance must be struck that creates an efficient, but transparent and thorough, process, respecting the need for NSPI to have clarity as to what is expected of it and the interests of all intervenors, and ratepayers, to have their voices heard and concerns addressed.

[Small Business Advocate, Closing Submissions, p. 5]

[27] NS Power urged the Board not to follow the approach outlined by the Ontario Energy Board for rebutting the presumption of prudence in *Re Enbridge Gas*

*Distribution Inc.*¹. NS Power argued the standard outlined in that case was unworkable, lacked any objective or measurable threshold, and has not been used outside of Ontario.

[28] NS Power argued that a FAM Audit is a “challenge” to the presumption of prudence, and therefore if intervenors need only “re-raise” questions the auditor has already examined, the process would be redundant and inefficient. It said:

It effectively amounts to a secondary audit process conducted by parties with access to less information and fewer investigative tools than the Auditor had. In short, the Auditor already raised the questions. It falls to intervenors to demonstrate why the Auditor’s answer might be incomplete or incorrect or to raise items that may not have been considered. Anything less risks turning the process into a duplication of effort, rather than a constructive review.

[NS Power, Reply to Closing Submissions, p. 11]

[29] NS Power went on to submit “requiring that the questions of prudence raised by intervenors be grounded in something more than a simple statement or pronouncement, such as additional analysis or evidence, does not set the bar too high for sophisticated counsel and their consultants to meaningfully participate in the FAM Audit process.” NS Power said raising a credible challenge grounded on facts and analysis is not an impossible burden and should be expected. Indeed, NS Power appears to question whether the use of ratepayer funded experts “...in the context of the FAM Audit, to essentially audit the audit, is an effective use of customers' money...”.

[30] In summarizing its views on the proper use of a FAM Audit, NS Power said:

A well-designed audit should not be a springboard for adversarial fishing expeditions; it should be a structured, independent evaluation that improves transparency, identifies areas for operational improvement, and provides the Board and customers with confidence in the utility’s cost management. The value of the audit lies not in the volume of disallowances it might provoke, but in the clarity and insight it brings to complex utility operations, particularly in the context of NS Power’s management of 1.7 billion dollars in FAM costs in this audit period.

Again, if intervenors merely repackage the auditor’s work into disallowance arguments, the process becomes duplicative, inefficient, and less constructive. It risks turning a rigorous

¹ RP-2001-0032 (December 13, 2002) and later appeals to the Ontario Divisional Court (2005 CanLII 4941 (ON SCDC)) and Court of Appeal (2006 Can LII 10734 (ON CA)).

and technical review into an adversarial parsing exercise, where the utility is effectively tried twice: once by the auditor, and again by parties re-litigating the same findings. A more productive view is that the audit serves as a foundational record. Intervenors can and should rely on it, but their role is to engage critically with it, highlighting where it may fall short, where further context is needed, or where alternative interpretations are warranted. This strikes the right balance between transparency, fairness, efficiency, and continuous improvement.

[NS Power, Reply to Closing Submissions, p. 15]

3.1.2 Findings

[31] NS Power overstates its concerns. As noted in its own reply submissions, none of the intervenors suggest that any speculative or unsubstantiated question, claim, or statement should automatically displace the presumption of prudence. NS Power's own views on the merits of the allegations of imprudence in this proceeding appear to be driving its conclusions and concerns.

[32] NS Power's search for an "objective or measurable threshold" for rebutting the presumption of prudence is misguided. No bright line marks where the presumption is rebutted. This will vary depending on the circumstances. There should be a reasonable basis for challenging the presumption of prudence, but the assessment does not lend itself to a fully objective or measurable test.

[33] Moreover, the burden to overcome the presumption should not be onerous. Rate regulated utilities have a considerable advantage when it comes to access to and possession of information about their operations and decisions. The Ontario Energy Board emphasized this in its decision in *Re Enbridge Gas Distribution Inc.* at paragraphs 3.12.3 to 3.12.6:

3.12.3 While a party challenging the prudence of a decision made by the utility has an obligation to raise reasonable grounds for undertaking such a review, it does not need to establish a prima facie case that the utility's decision was imprudent; rather it must demonstrate that there is an issue to be determined on further inquiry by the Board. This is particularly true in the case of a regulated utility where it is the only party in possession of all the relevant information about how and why the decision was in fact made.

- 3.12.4 A party can raise reasonable grounds through such means as an examination of the outcome of the decision, the inherent conflict of interest of related parties to a transaction and relevant industry practices at the time the decision was made.
- 3.12.5 Once a party has persuaded the Board that a prudence review is warranted, or, as some have put it, the presumption of prudence has been “overcome”, the onus is then on ECG [Enbridge Gas Distribution Inc., carrying on business as Enbridge Consumers Gas] to demonstrate that the decision it made was prudent at the time.
- 3.12.6 The Board does not agree with ECG’s assertion that other parties have an obligation to demonstrate that another course of action would, objectively, have been better than the one taken by ECG.

[34] The Board agrees it may consider the outcome of a utility’s actions and decisions to rebut the presumption of prudence. The Ontario Divisional Court had no issue with this aspect of the Ontario Energy Board’s decision:

It is important to distinguish between things that can be considered at the stage of deciding if the presumption of prudence is rebutted, and things that can be considered as part of the prudence analysis itself. In considering the application of the presumption, it is acceptable to use the benefit of hindsight. Thus, a decision which turned out to have a bad economic outcome will not be presumed to be prudent, but rather will be subject to an analysis of the surrounding circumstances to determine if it was in fact prudent. In this case, the Board had before it evidence from the Notional Deferral Account as to the extra cost incurred by Enbridge as a result of the Alliance and Vector contracts, over and above what would have been the cost if the TransCanada pipeline had been used. The Board was entitled to use that information in determining the threshold issue as to whether the presumption of prudence was rebutted. It was not entitled to use the information as part of its analysis as to whether the decisions at issue were, or were not, prudent at the time they were made.

[2005 CanLII 4941 (ON SCDC), para. 28]

[35] Neither did the Ontario Court of Appeal, which accepted that hindsight could displace the presumption of prudence, but disagreed with the Divisional Court that the Ontario Energy Board had improperly used hindsight to consider the ultimate question of prudence:

[18] The Divisional Court acknowledged that the OEB’s reasons must be read as a whole. The court also accepted that the OEB had correctly described the “prudence” inquiry and that the Board was well aware of a distinction which had to be drawn between the use of hindsight in the first and second stage of the inquiry. Despite the OEB’s clear statement of the proper test, the Divisional Court ultimately held that the reference to the notional deferral account as a “key element of the prudence review” indicated a misuse of hindsight in respect of all of the contracts, including the Alliance contracts. This single sentence demonstrated to the Divisional Court that, despite the earlier passages from the reasons, the OEB had “slipped in its application of the test and did allow hindsight to creep into its consideration of prudence”.

[19] In reaching this conclusion, the Divisional Court must have read the words “prudence review” in the impugned passage as referring only to the second stage of the “prudence” inquiry. On that reading, the OEB had improperly used information provided in the notional deferral account to determine the ultimate question of the prudence of the contracts.

[20] The Divisional Court erred in reading the words “prudence review” as referable only to the second part of the “prudence” inquiry. Taken as a whole, the reasons indicate that the phrase “prudence review” and similar phrases (e.g. “review of prudence”) were used throughout the reasons, not as terms of art with a fixed single meaning but in different ways in different parts of the reasons. ...

[2006 CanLII 10734 (ON CA), paras. 18-20]

[36] NS Power’s submissions conflate rebutting the presumption of prudence and making an actual finding of imprudence. These assessments require different considerations. Further, NS Power again overstates its position when it suggests that if the outcome of a decision or action can rebut the presumption of prudence, then any cost could be adverse to customers and rebut the presumption. As NS Power notes, there is an inherent and unavoidable cost to provide utility service. Incurring typical and expected costs in the normal course will not be enough to rebut the presumption of prudence. But if costs are unusual or unexpected, either in their nature or amount, this may rebut the presumption. Questions raised in a FAM Audit report may also displace the presumption of prudence.

[37] NS Power also goes too far in saying that a party questioning NS Power’s prudence in a FAM Audit proceeding “should consider the auditor’s findings and adduce new evidence or explain what the auditor may have missed to draw a different conclusion”. This would make the conclusions in the FAM Audit report, to the extent that they do not recommend disallowances, *prima facie* findings of prudence and practically reverses the onus to require a party to prove imprudence. This is inappropriate for a few reasons.

[38] First, it is the Board's role to make findings of prudence or imprudence. The FAM Auditor may recommend disallowances based on its own conclusions. The auditor's report becomes evidence the Board may consider in reaching its own conclusions and making its own findings.

[39] Second, it is open to parties to take the same evidence considered in the audit report and simply urge the Board to reach a different conclusion than the auditor. The conclusions in the report are not binding on the Board. Further, this approach is open to both the intervenors and NS Power. Otherwise, if the auditor recommended a disallowance for imprudence, NS Power could only show that it was not imprudent by presenting new evidence or explaining what the auditor may have missed. Simply disagreeing with the auditor's opinion would not be sufficient.

[40] Third, the burden on a party to raise questions about prudence should not be higher in a FAM Audit because of the auditor's ability to interview employees, request information and review models and software tools, contracts, reports, invoices and other documentation. The parties remain at a disadvantage because of their limited access to the utility's information. They are in no better position to raise new evidence or explain what the auditor may have missed than they would be to show actual imprudence of the utility.

[41] NS Power also overstates concerns about the potential for a second, duplicative, audit process. Over the audit period covered by the report in this proceeding, NS Power incurred approximately \$1.7 billion in FAM costs. In total, the costs questioned for imprudence in this proceeding are a fraction of one percent of the costs considered in the audit. If, as NS Power suggests, the conclusions in the audit report prove its prudence,

then it should have no difficulty addressing any questions found to rebut the presumption of prudence.

[42] In summary, the Board finds that the threshold for rebutting the presumption of prudence is contextual. It requires a reasonable question – something that is more than a bald statement or speculation – but it should not be too onerous and may arise in hindsight. In the context of a FAM Audit, the audit report may provide context but does not increase the threshold for rebutting the presumption or reverse the onus. Questions raised in the FAM Audit may rebut the presumption of prudence. The audit report is also available as evidence to assess the ultimate issue of prudence (although hindsight may not be used in this stage of the assessment).

3.1.3 When does a mistake amount to imprudence?

[43] To err is human. Evidence filed on behalf of NS Power by FTI Consulting highlighted this:

The Asset Management system is designed to ensure that Nova Scotia Power's decisions are made in a reasonable manner taking into account the information available at the time they are made. However, even with all these barriers to performance issues in place, it is still possible for failures to occur even though the actions taken and made have been prudent. One example of how this can occur is Human Error, which may be due to a lack of knowledge or experience performing particular tasks, a slip in concentration, or some other unforeseen issue. As humans are fallible, it's not possible to fully eliminate human errors. Many highly trained individuals who go through rigorous training and qualification (i.e. pilots, surgeons, astronauts, etc.) still make occasional errors due to fatigue, distraction, misperception, and other factors.

[Exhibit N-25(i), p. 6]

[44] The parties also addressed whether human error amounts to imprudence in their closing submissions. The parties appeared to be aligned on the general principles relating to this issue, although perhaps not in application of these principles to specific incidents addressed in the FAM Audit report and the evidence in this proceeding.

[45] In its closing submissions, NS Power said:

In complex operational environments like a power generation utility, human error is an inevitable risk factor that even the most diligent systems cannot completely eliminate. Generating facilities contain kilometers of piping, hundreds of individually operating assets and thousands of pieces of operational data for those assets and associated processes. NS Power has effectively operated these aging assets for many years, achieving strong performance, but continues to strive for improvement through programs like root cause analyses (RCA). NS Power employs qualified resources to operate and maintain its facilities, regularly trains its resources on processes and procedures, and has deployed a Competency Management System to ensure regular review of key documents and processes. If an error occurs despite appropriate policies, training, and reasonable precautions taken, the error should not be deemed imprudent simply because it led to an adverse outcome.

[NS Power, Closing Submissions, p. 9]

[46] The Consumer Advocate said:

The Consumer Advocate acknowledges there is a distinction between costs caused by human error that are unrelated to how the utility has been managed (whether prudently or imprudently), and those that are. However, the Consumer Advocate does not agree that pointing to “human error” alone is sufficient to relieve a utility of its obligation to act prudently, and neither will it always be the case that “human error” is distinguishable from imprudence of the utility. The question in such cases is not whether the incident itself was caused by “human error,” but whether the incident could have been prevented with reasonable diligence of the utility.

[Consumer Advocate, Closing Submissions, p. 3]

[47] The Industrial Group noted:

The Industrial Group agrees with the distinction raised in NSPI’s closing submissions that there can be human error that amounts to imprudence, and human error that does not. The standard to be applied to NSPI is not one of perfection. However, NSPI, and its staff, must act reasonably, exercise appropriate due diligence, and there must be adequate oversight by management. NSPI must have appropriate systems and safeguards in place to guard against human error and ensure effective, safe operations.

The Industrial Group emphasizes, however, that the burden is on NSPI, not intervenors, to prove that notwithstanding human error(s) NSPI acted reasonably.

[Industrial Group, Closing Submissions, p. 16]

[48] Referring to another part of the Industrial Group’s closing submissions, NS

Power accepted this general statement:

Regarding instances of human error, the IG commented as follows:

The same approach can, and should, be applied to the evaluation of “human error” in a prudence analysis. The burden is on NSPI to establish that it acted reasonably and prudently, by showing it took all reasonable care in establishing a system to guard against the specific error that

occurred - whether that be through specific protocols, procedures, additional checks or oversight, appropriate remote equipment, and/or sufficient record-keeping ensuring sufficient maintenance occurred.

The issue is really who should be responsible for paying for the consequences of the human error. If NSPI has established that it has acted diligently in training and overseeing its staff and protecting against the opportunity for human error that results in significant consequences to its equipment, then it is reasonable for these costs to fall on ratepayers. If it has failed to establish that it acted reasonably, then they should not.

NS Power does not disagree with the IG's characterization above. [footnote omitted]

[NS Power, Reply to Closing Submissions, p. 42]

3.1.4 Findings

[49] The Board agrees with NS Power that human error is “an inevitable risk factor that even the most diligent systems cannot completely eliminate”. A loss caused by human error does not inevitably lead to a finding of imprudence. Consistent with the discussion in the previous part of this decision, an incident of what appears to be human error may be enough to rebut the presumption of prudence. However, the utility is required to demonstrate it has acted diligently in training and overseeing its staff and has effective and functioning systems and safeguards in place to guard against human error that results in significant consequences and ensures safe operations.

3.2 Root Cause Analysis Reports

[50] During its audit, Bates White requested and received Root Cause Analysis (RCA) reports. It highlighted the nature of these documents in its audit report:

... Root Cause Analyses explore the reasons why something has gone wrong and may contain details that are critical of NSPI and its employees. These documents are the product of careful review, investigation, and assessment by NSPI personnel of (typically) negative events, that may incur incremental costs for customers (e.g., generating assets being taken offline). These are some of the most important documents produced by an electric utility, particularly those that own generating assets (like NSPI) because they permit identification of the drivers of negative events and opportunities for improvement in the future. We rely on these documents in the discussion below and, to be sure, these events must stand on their own. We do wish to note, however, that utilities do not commission such *ex post* studies of successful events, or days where the plant performed flawlessly, or what has worked well. We recommend considering these events within the context of NSPI's overall fleet performance, as explained in the preceding subsections of this chapter,

which shows the overall performance of the fleet and its constituent plants, in many cases outperforming peer generating stations (as measured by GADS data). We applaud NSPI for its continued use of Root Cause Analyses, which we found to be typically thorough and well explained, and underscore for the Board the importance of this process going forward.

[Exhibit N-1, p. 223]

[51] The Industrial Group requested the RCA reports NS Power provided to Bates White [Exhibit N-11, IG IR-3], and some were requested by Board staff [Exhibit N-12, NSUARB IRs 3-5]. NS Power provided these reports in its IR responses, but it claimed confidentiality over them in their entirety. In its response to NSUARB IR-3(a), NS Power said:

As noted in the Bates White Audit Report, “[Root Cause Analyses] are some of the most important documents produced by an electric utility [...] because they permit identification of the drivers of negative events and opportunities for improvement in the future”. These documents were intended to be internal documents and are critical of internal processes and performance in an effort to continuously improve. NS Power has developed or adjusted tools and processes as a result of these investigations which have improved performance and compliance in a number of areas, creating value for customers. The RCA program is a valued element of NS Power’s Asset Management System, and the company is confident that the management of this program, investigations and ensuing recommendations represents a high level of prudence. In its report, Bates White “applaud[ed] NSPI for its continued use of Root Cause Analysis, which [they] found to be typically thorough and well explained”. The Company appreciates and agrees with the Bates White’s explanation to the reader that RCAs are one of the most important things that a utility does marking a robust asset management system. NS Power submits that this fact is attributable to Bates White’s other point, that NS Power’s units on average, outperform industry peers when comparing reliability (DAFOR). Human error-related forced outages are not uncommon in the industry and can negatively contribute to a unit reliability statistics. NS Power has demonstrated DAFOR impacts in line or outperforming comparable peers which correlates to the idea that human error is low and is reflective of a strong culture of operational excellence. Failures, while undesirable, are a normal part of an operating business and NS Power endeavors to learn from them through this program.

[Exhibit N-12, PDF pp. 3-4]

[52] The Industrial Group later asked why NS Power provided the RCA reports confidentially rather than publicly, as it had in the past [Exhibit N-19, IG IR-14]. NS Power responded that it was not common practice to publicly file these reports, although it had occurred. It said:

Root Cause Analyses are critical of internal processes and performance in an effort to continuously improve. As noted in the Bates White Audit Report, “[Root Cause Analyses] are some of the most important documents produced by an electric utility [...] because they

permit identification of the drivers of negative events and opportunities for improvement in the future". NS Power has developed or adjusted tools and processes as a result of these investigations which have improved performance and compliance in a number of areas, creating value for customers. Successful investigations rely on the open and candid participation of those involved in the event. NS Power recommends that the technical experts employed by the Board's consultant review the RCAs confidentially and report on findings through the FAM Audit Report. NS Power is confident that this approach strikes the right balance, ensuring maximum value for customers. Requiring all RCA reports to be provided non-confidentially raises concerns about the potential impact on the effectiveness of the internal RCA program. Confidentiality encourages a more open exchange of insights and perspectives, supporting thorough and comprehensive investigations that drive valuable findings and actionable recommendations for the benefit of customers.

[Exhibit N-19, p. 2]

[53] FTI Consulting considered the use of RCA reports in fuel adjustment mechanism regulatory proceedings in some other jurisdictions, although it noted that many jurisdictions in both Canada and the United States do not have comparable regulatory proceedings due to market or system differences. It did not find any jurisdictions that required disclosure of these reports to regulators as a matter of course. It said that several jurisdictions require utilities to file high level information on unplanned outages and events, which typically includes a description of the root cause and the corrective actions identified. FTI Consulting said the only cases it found where regulators requested full reports were for major outages, considered as those longer than 30 days. Appendix A to the FTI Consulting evidence, which lists the jurisdictions it reviewed, only names eight states in the United States. On cross-examination by the Consumer Advocate, Steven Morris, Managing Director, Assets Advisory and Transformation with FTI Consulting, agreed that his jurisdictional review was not an in-depth analysis and there was variability in the practices around the use of RCA reports in those jurisdictions.

[54] In its closing submissions, NS Power proposed to provide RCA reports through the FAM process, subject to the following materiality threshold:

- A cost greater than two hundred thousand dollars of replacement energy due to the unavailability of a thermal generating unit, and the need to dispatch generation out of merit; or due to direct fuel loss (fuel oil release for example); or
- fourteen days equivalent generation downtime or greater.

[55] NS Power indicated that it would prepare the reports in a consistent format with the intention that “sufficient operational information and context is provided, and language utilized is such that ... the report may be properly interpreted by external parties with less exposure to field-level operations, and without the benefit of interviews and mechanisms available to Bates White.” It also confirmed that Bates White could request more information on any event of concern regardless of the proposed materiality threshold.

[56] While the Consumer Advocate recognized that the RCA reports are intended to serve another function, he submitted that they contain relevant information for FAM Audit proceedings and disclosure and reasonable use of this information should not be unduly restricted based on unsubstantiated concerns and speculation about the misuse or misunderstanding of the information, or the integrity of the RCA process.

[57] The Industrial Group appreciated NS Power’s commitment to complete RCA reports in a consistent format, with sufficient operational information and context. However, it strongly opposed the proposed materiality threshold. It noted that intervenors did not have the ability to consider or explore this proposal in the proceeding, given that it only appeared in NS Power’s closing submissions.

[58] The Industrial Group also said it was important that these reports be available to the Board, intervenors and the public:

The recent push for full confidentiality flies in the face of the Board's prior findings in relation to RCAs. More pertinently, given the number of RCAs that have been filed publicly, if there was demonstrated harm to an important public interest that flowed from their release, NSPI could have introduced evidence of that harm. It did not.

[Industrial Group, Closing Submission, p. 13]

[59] The Industrial Group went on to say:

During the hearing, the position for why these RCAs ought to be confidential crystallized into the claim that the RCAs lack the requisite "context" needed to accurately interpret their contents. It seems that NSPI would like to shield the RCAs from disclosure to prevent what it perceives as uninformed intervenors from making arguments for disallowance. Respectfully, if "context" is needed, NSPI is in the position to provide that additional context, not to shield the RCAs due to their failure to provide it. That is the very purpose of the Reply Evidence and Rebuttal Evidence opportunities given to NSPI. Any general concern that that the creation and disclosure of an RCA would be taken out of context by intervenors to argue *ipso facto* that NSPI's actions are imprudent and merit disallowance is not grounded in the evidence. The evidence to the contrary on the record of this proceeding demonstrates there were additional RCAs discussed and disclosed for which there was no argument that the presumption of prudence had been rebutted.

NSPI has presented no evidence of an important public interest that would be risked from disclosing the RCAs in their entirety in this proceeding, or in any future FAM Audit. It would be an overreach to grant confidentiality out of a fear of the use that may be made of the information in the hands of intervenors. In this proceeding, there is nothing more than the bare assertion of a preference by NSPI that the RCAs remain confidential, for contextual reasons. When balancing the ability to intrude upon this Board's presumptive openness, the risks from disclosure must have a public aspect to it and be "well-grounded in the evidence". This is particularly so when openness and transparency is foundational to the FAM and the Audit process. [footnotes omitted]

[Industrial Group, Closing Submissions, p. 14]

[60] The Industrial Group also expressed concern about the timeliness of completing RCA reports. The Industrial Group specifically highlighted concerns about the scope of review when reports about an event in the period of one FAM Audit review are not available until a later period. The Industrial Group asked the Board to reiterate the importance of completing RCA reports promptly, following NS Power's Quality Process targeted timelines.

[61] In its reply submissions, NS Power submitted that FTI Consulting's research showed that regulators in other jurisdictions did not routinely request RCA reports unless they met a materiality threshold. While it said it supported openness and transparency, NS Power submitted it was clear from this FAM proceeding that these reports can be "misconstrued or misunderstood, resulting in significant effort through the IR process and time in the hearing to resolve or clarify what would be known to the target audience, but not necessarily to external parties reviewing the reports." NS Power committed to providing reports that meet its proposed threshold non-confidentially (except for needed redactions) and said it would continue to target nine months for report completion, "with the caveat that this is not always possible or appropriate".

3.2.1 Findings

[62] The Board places little weight on FTI Consulting's jurisdictional scan. Cross-examination by the Consumer Advocate and questions from the Board highlighted weaknesses with this research. Mr. Morris confirmed it was a "high-level" or "10,000 feet" look, and "wasn't intended to be an in-depth analysis". Additionally, there were only a limited number of jurisdictions considered to have comparable regulatory processes relating to fuel adjustment mechanisms.

[63] Where an RCA report is relevant and requested in a FAM Audit proceeding, NS Power must provide it, subject only to redactions necessary to protect confidential information following the Board's normal processes. No materiality threshold is to apply in providing such reports. The Board agrees with the Industrial Group that NS Power did not provide any specific evidence that past releases of these reports in Nova Scotia have harmed any important public interest. The potential for misunderstanding these reports is

not a ground for claiming confidentiality. If NS Power believes a more casual reader needs more context to understand these reports, it can provide it.

[64] The Board accepts NS Power's commitment to promptly complete RCA reports and agrees that the circumstances of some events may need more time to address. For clarity, the Board finds that events considered in RCA reports provided in the course of a FAM Audit will be within the scope of the proceeding relating to that FAM Audit, even if the event occurred or was considered in an earlier audit period.

3.3 Sloughing Events

[65] The FAM Audit report noted three instances of coal sloughing that occurred during the audit period. As outlined in Bates White's response to the Industrial Group's IR-10, sloughing is when coal falls off an existing coal pile due to pile instability. NS Power estimates that the first sloughing event occurred in June 2023 at the Bear Head coal storage site. It discovered the event in August 2023. During this event, 12 metric tonnes of coal sloughed into surrounding ditching, breached a bank and entered a wetland just south of the coal pile. Bates White reported that there were no FAM costs associated with the event. However, capital costs of \$136,024 were incurred related to cleanup and remediation.

[66] The other two coal sloughing events occurred at the Point Tupper Marine Terminal (PTMT) coal storage site. The first occurred on January 26, 2023, when 30 metric tonnes of coal sloughed from the coal pile, with about one metric tonne breaching the surrounding concrete culvert and reaching the shoreline. NS Power recovered the coal and moved it to the Bear Head storage site. The second event occurred on June 5 and 6, 2023, when coal sloughed from the pile, filled the surrounding concrete culvert,

and roughly a quarter tonne reached the nearby bank and a “minor amount” reached the shoreline. Following this event, NS Power recovered the sloughed coal, and suspended offloading of coal at PTMT until August 18, 2023. NS Power also moved additional coal to Bear Head and diverted two cargoes of coal for partial offloading at PTMT to another storage site. In the audit report, Bates White reported the FAM costs associated with these events to be \$1,550,075. This amount was subsequently confirmed by NS Power in its response in Undertaking U-19 at \$1,468,520.

[67] In July 2023, NS Power engaged a consultant, CBCL, to assess the PTMT coal pile and identify means to help prevent future sloughing events. NS Power had also previously engaged CBCL to assess sloughing risks following a 2016 sloughing event, and to identify potential site and procedural modifications to improve coal pile stability and prevent future sloughing. As noted in NS Power’s Undertaking U-11, the Company implemented a combination of recommendations from the related 2017 CBCL report, seeking a cost-effective means to augment the site and operations procedures to help protect against sloughing impacts. This included maintaining a pile set-back of 10 feet while constructing segmental concrete block walls at the west side of the box culvert and the southwest extremity of the coal pad.

[68] The intent of the 2023 CBCL analysis was to determine a reasonable setback distance from the toe of the coal pile to the base of the upper concrete block retaining wall. The recommended setback distance is intended to be far enough back so future coal pile slope failures could be contained by the retaining wall with little or no coal sliding downslope to the box culvert or beyond. CBCL assessed two setback options, 10 feet and 15 feet, and recommended that the 15-foot setback option be implemented. This

would result in a reduction in the coal storage volume under the coal shuttle conveyor of 20%, from 120,000 metric tonnes to 96,000 metric tonnes.

[69] NS Power asserted that the sloughing events were the result of the impact of “unprecedented” rainfall events on the coal piles. In response to Consumer Advocate IR-11, Bates White noted that rainfall appeared to be a contributing factor to the sloughing events. However, Bates White also noted that while the rainfall amounts received on the days of the PTMT events were among the higher precipitation daily totals observed in 2023, they were not the highest and not unprecedented.

[70] John Wilson, on behalf of the Consumer Advocate, asserted that the rainfall events that reportedly caused the 2023 PTMT sloughing events were, in fact, not unprecedented. To support this assertion, he provided a table outlining four-day rainfall totals at Port Hawkesbury dating back to 2013. Mr. Wilson argued that the table shows there were at least seven high rainfall events at Port Hawkesbury during the decade prior to the two 2023 sloughing events, several of which he suggested had much more intense rainfall than was associated with the two 2023 sloughing events. He also claimed to have verified that the single-day rainfall totals associated with the 2023 sloughing events were not extreme events. In particular, he noted that the single day rainfall recorded at Port Hawkesbury, during the June 5, 2023, sloughing event, was 61.9 mm. Mr. Wilson’s evidence also stated that in 2021 there were 11 days with more than 100 mm of rainfall recorded at Port Hawkesbury. However, during the hearing, Mr. Wilson noted an error and indicated that his evidence should have stated that in 2021 there were two days with more than 100 mm of rainfall recorded at Port Hawkesbury.

[71] Based on his analysis, Mr. Wilson recommended a disallowance of FAM costs, or some portion thereof, related to the coal sloughing events. This recommendation was based on two reasons. First, he believes that NS Power failed to accurately identify the cause of the sloughing events. Second, he suggested that:

... NS Power should have conducted a risk assessment at each coal storage location adjacent to wetlands or waterways to ensure that it had proper practices and facilities to control sloughing during heavy rain events. That NS Power was able to hire a consultant to perform such an assessment and implement its recommendations soon after the events at PTMT strongly indicates that this was not a complex or burdensome activity, and one that could have been performed in the course of NS Power's routine safety and risk management responsibilities.

[Exhibit N-22, IG IR-2]

Mr. Wilson, therefore, contends that CBCL's recommendation for a larger setback distance from the retaining wall should have been identified during a risk assessment. He argued that NS Power should be undertaking risk assessments at its facilities to identify preventative measures and that its failure to identify this risk and take corrective action is imprudent.

[72] In its Rebuttal Evidence, NS Power disagreed with Mr. Wilson's contention that the utility had failed to accurately identify the cause of the sloughing events:

Mr. Wilson appears to be fixated on trying to undermine NS Power's use of the term "unprecedented" with regard to rainfall instead of trying to understand why the rainfall events were impactful to the coal piles. As noted above, the cause of the sloughing is the rare occurrence of intense rain and/or driving wind and rain, which forces large amounts of water into the coal pile surface within a short period of time (i.e. within a matter of hours). This causes the pile's sloped surface to become quickly water-logged, and the extra weight causes coal to slide down into the surrounding containment area. This phenomenon can occur regardless of the size of the pile contrary to what Mr. Wilson implies.

[Exhibit N-25, pp. 18-19]

[73] NS Power also maintained that the weather events causing the sloughing were, in fact, unprecedented due to combined intense rain and wind occurring in less than 24 hours (and therefore four-day, or even one-day, rainfall data is not relevant). Specifically, NS Power noted that rainfall during the January PTMT sloughing event was

significant and occurred within a five-hour period, while the rainfall during the June sloughing event amounted to 82 mm within a 12-hour period, most of which fell in a six-hour period. Finally, the utility asserted that the Port Hawkesbury rainfall data upon which Mr. Wilson relied does not portray the full impact of the rainstorm intensity experienced on the ground at PTMT.

[74] NS Power's Rebuttal Evidence also stated that the PTMT site features in place at the time of the 2023 sloughing events successfully contained all but a small amount of coal, as designed. Nonetheless, the company maintains that the severity of the related rainfall events warranted a further review of the site features and systems. The purpose of this review was to determine whether any reasonable improvements could be made to add additional security should further storm events such as the ones in 2023 occur. Following the review, NS Power initiated a capital project at PTMT for an overhead gallery conveyor rainwater diversion system to divert and reduce the amount of rain that lands on the coal pile. NS Power believes this is a more cost-effective solution than adding additional coal storage space or implementing additional storage restrictions. NS Power also noted that the increase to the retaining wall setback distance from 10 to 15 feet, as recommended by CBCL in its 2023 report, was only a temporary measure while modifications to accommodate the overhead rainwater diversion structure were being implemented. NS Power stated that this decision was prudent, and that permanently implementing the setback change would have resulted in an expensive further increase in the PTMT containment area.

[75] With regard to Mr. Wilson's second reason for recommending a disallowance, NS Power's Rebuttal Evidence noted that the company had conducted risk

assessments of the PTMT site many years before 2023. In fact, it was these assessments that led to the implementation of the site containment designs and procedural approaches that were in place at the time of the 2023 sloughing events. NS Power provided copies of these assessments in Undertaking U-11. NS Power also stated that hiring CBCL to update the risk assessment in 2023 after the sloughing events is not evidence of imprudence as suggested by Mr. Wilson. Instead, NS Power asserted that this is evidence the utility responded promptly to the evolving risk profile in an appropriate and prudent manner.

3.3.1 Findings

[76] Mr. Wilson has recommended a disallowance of FAM costs, or some portion thereof, related to the 2023 coal sloughing events. Both the Consumer Advocate and the Industrial Group submitted that the Board should accept Mr. Wilson's recommendation. The Board certainly has some concerns about NS Power's evidence about the sloughing events. Nevertheless, for the reasons that follow, the Board disagrees with Mr. Wilson's recommendation and the related submissions by the Consumer Advocate and Industrial Group.

[77] The FAM Audit report notes that NS Power believes the sloughing events were the result of the impact of "unprecedented" rainfall events on the coal piles. NS Power supplemented this in its Rebuttal Evidence by further stating that the cause of the sloughing is the result of the rare occurrence of intense rain and/or driving wind and rain, which forces large amounts of water into the coal pile surface within a short period of time.

[78] During the hearing, the claim of the “unprecedented” nature of rainfall during the sloughing events was discussed further:

A. (Pecurica) I’m not sure what Mr. Wilson referenced in his evidence, but my data here in our rebuttal was based on that weather station, Environment Canada weather station stationed at the Port Hawkesbury Airport. It was the public data that was available.

Q. Yeah. I believe that’s the data that Mr. Wilson referenced in his evidence. It’s in a footnote or a hyperlink in his evidence.

Can you tell me, is that the same data that you’re relying upon to make the claim that 2023 rainfalls that caused those coal events were unprecedented?

A. (Pecurica) Mr. Murphy, there’s been a lot of attention to that claim that the rain events were unprecedented, and I did speak with other Intervenor in this audit to say that what’s been captured by that weather station at Port Hawkesbury Airport doesn’t necessarily represent what happened on the ground. However, we don’t have any other evidence of what happened on the ground other than eye account witnesses from people that I spoke to at the time that I don’t have any notes of.

So whether these events were preceded or unprecedented, they were simply extreme enough to cause some of the coal to breach the perimeter, breach the containment and enter the environment, which for us is very significant. Had that coal sloughed and that less than one tonne had not breached the containment, it wouldn’t even be a topic of conversation. It’s a regular sloughing event that’s cleaned up.

So there were extreme weather events. Whether they were unprecedented, certainly for us, causing this to happen, that was unprecedented.

And one more second, please.

Mr. Murphy, as Ms. MacLean reminds me, when we looked through this data to form our opinion and our rebuttal, that period between 5th and 6th of June, there was a period of hours where enough rain fell that they couldn’t find in environmental records from that particular weather station any more rain than had fallen in that many hours, so it was very concentrated. And when what was happening in hourly is unknown to us. I mean, we can’t get that data.

Q. So you reviewed the data from Port Hawkesbury, the historic data from Port Hawkesbury, and you couldn’t find any events that had more than 82 hours (*sic*) in 12 hours -- more than 82 millimetres in 12 hours?

A. (Pecurica) I’m not sure if it was 12 hours or six hours, or ---

Q. Or six hours.

A. (Pecurica) I -- from the data that was available to me to look at, I can’t recall now, to tell you with 100 percent precision, that this was an unprecedented event.

Q. Well ---

A. (Pecurica) I can say in terms of quantity of rain in this many hours, it was a serious -- it was an extreme event. Whether it was unprecedented based on the data that's available from that weather station, I can't tell you that with certainty.

...

Q. Okay. So if I'm hearing things correctly then, it sounds like the claim of unequivocal unprecedented rainfall for these particular sloughing events is kind of based on your own - or Nova Scotia Power's own view of what happened on the ground on the site at that time, it's not based on any sort of proven or historical comparator?

A. (Pecurica) For the most part, yes. I mean, it was an intense rainfall. To the extent that we can utilize our models that we use in hydrology and how it corroborates some of the data, we can look at that, but it's mostly based on what was experienced on the ground.

...

A. (Drover) Sorry. Excuse me.

Just to add onto that, we do use those curves in dam safety on our hydro systems.

And correct me if I'm wrong, the basis of those curves is about the amount of rainfall, the duration, and the intensity of rainfall in a period of time. And for this event, taking those factors, but I think the important distinction is the direction and the intensity of wind.

And so I'm not sure if it would be a fair comparison to just look at the intensity and the duration of rainfall using that metric because it doesn't include or incorporate the wind component. And for these events it was the combination of the rain and the wind that led the team to designate this as unprecedented.

And to my knowledge, not being an expert in this field, I do not know of a curve that takes into account those additional parameters.

Q. Okay. Thank you.

But in the evidence we don't have anything to point to that confirms, you know, the velocity or the intensity of the winds on those events, all we have is that there was high winds; correct?

A. (Drover) Correct.

[Transcript, March 19, 2025, pp. 826-837]

[79] The Cambridge dictionary defines "unprecedented" as "never having happened or existed in the past." As such, NS Power's claim of unprecedented rainfall presents a very high bar. The testimony does not give the Board confidence that this bar has been met. Certainly, the utility's claim of "unprecedented" rainfall appears to be speculative, primarily based on site observations during the events rather than on a

comparison to documented historical evidence. The Board, therefore, agrees with the submissions of the Consumer Advocate and Industrial Group that NS Power has not proven its claim of “unprecedented” rainfall causing the sloughing events.

[80] This notwithstanding, the Board notes that Bates White stated that rainfall appeared to be a contributing factor to the sloughing events. Further, the Board agrees with NS Power that when evaluating the intensity of rainfall events, it is not sufficient to only review one-day and four-day rainfall durations, as Mr. Wilson did. Instead, a proper review needs to compare actual rainfall events to historical rainfall intensities measured over various durations (Intensity-Duration-Frequency (IDF) curves) to get a true measure of the relative intensity and frequency of a rainfall event. Unfortunately, such an analysis was not completed by any party in this proceeding.

[81] Nonetheless, the Board finds that sufficient evidence has been presented in this proceeding (particularly Attachment 1 to Exhibit N-23) to show that the rainfall events that occurred during the sloughing events were intense and relatively infrequent in nature. Therefore, while NS Power’s characterization of these events as “unprecedented” is not substantiated or accurate, the Board agrees with Bates White and finds that intense rainfall was a contributing factor to the sloughing events.

[82] With regard to Mr. Wilson’s second reason for recommending a disallowance, he believes that NS Power did not take appropriate corrective action (i.e., a larger setback from the retaining wall) in advance of the sloughing events to prevent them from occurring. He also stated that the utility should be undertaking risk assessments at its facilities to identify preventative measures, and its failure to identify this risk and take corrective action is imprudent.

[83] In supporting Mr. Wilson's recommendation for a disallowance related to this issue, the Industrial Group submitted that NS Power may not have had the proper setback of the coal pile from the retaining wall at the time of the PTMT sloughing events:

The engineering drawing [completed] by CBCL in July 2023 suggests the opposite; that the existing site plan was to have the toe of the pile up to the base of the retaining wall. This is a stamped engineering drawing, and there is no reason to believe this is inaccurate, beyond NSPI's assertion that there should have been a 10-foot perimeter. Certainly, the stamp itself indicates that the drawings were reviewed by a licensed professional engineer and signifies that the engineer has verified their accuracy.

Also, one of the options provided by CBCL to address the risks associated with sloughing of the coal piles in 2023, was to implement a 10-foot setback. This is further illustrated in the second engineering drawing attached to CBCL's July 2023 Report. It would be nonsensical for CBCL to have recommended a 10-foot set-back to address the sloughing concerns, if that was already the known protocol at PTMT. When NSPI was specifically asked about the systems in place at PTMT to verify whether Savage was implementing a 10-foot perimeter, NSPI was not able to provide a direct answer. The evidence was, instead, that it would be impossible for there not to be a 10-foot perimeter., NSPI's testimony does not align with the stamped site plan drawing provided by CBCL dated July 2023 depicting there being no setback.

[Industrial Group, Closing Submissions, pp. 24-25]

[84] The Board notes that this issue was discussed at the hearing and NS Power undertook to explain why CBCL's existing conditions drawing, prior to sloughing, shows the toe of the coal pile slope at the retaining wall instead of having a 10-foot setback from the existing retaining wall. In Undertaking U-26, NS Power stated:

The drawing is not representative of the observed site conditions prior to sloughing. In discussions with NS Power following the FAM Audit Hearing, CBCL confirmed that the cross-sectional outline of the pile in drawing C01, was developed using data that was extracted from photos which were taken immediately after the sloughing had occurred (please refer to Undertaking U-34).

Specifically, CBCL used the height of the pile, as judged from the photos, and the observation that the toe of the slough had reached the top of the retaining wall, to determine a pile slope which was reflected in drawing C01. This slope equals 35 degrees from the horizontal rather than 38 degrees from horizontal per CBCL's original site design conditions. The original site design conditions include a maximum height and volume of the pile under the shuttle conveyor, at a design angle of repose for coal of 38 degrees from horizontal. In drawing C01, CBCL depicted the height of the pile to be at this theoretical maximum height for a 120,000 tonne pile in an attempt to reflect maximum operating conditions as the starting point for their volumetric calculations. This, and the slope of 35 degrees, has the net effect of pushing the theoretical position of the toe of the pile further west in the direction of the Strait. Furthermore, CBCL confirms that the retaining wall depicted in C01, was positioned in the drawing based on visual observations of its proximity

to the crest of the slope leading to the box culvert, not based on its proximity to the base of the pile.

In summary, CBCL based their model on actual conditions that they were able to observe through photographs which were taken immediately after the slough had occurred but before it had been cleaned up. These observable conditions included a pile slope which had settled to a lower angle from horizontal than the theoretical 38 degrees.

[Exhibit N-44, Undertaking U-26, pp. 1-2]

[85] The Board understands NS Power's explanation but has concerns. First, CBCL's contention of a 35-degree slope angle is based on an estimate of the pile height as judged from photos. The Board considers this to be a very crude means to make such an estimate. Further, the theoretical maximum height of the coal pile on the drawing is different than that shown on drawing C01 in CBCL's 2017 report included in Undertaking U-11. Ideally, there would be contemporaneous photographs or records showing whether the 10-foot setback was in place prior to the sloughing events. Notwithstanding the Board's concerns about the information contained in Undertaking U-26, the Board accepts NS Power's explanation about CBCL drawing C01 as reasonable. In addition, without any other evidence on record to suggest otherwise, the Board accepts NS Power's testimony that the setback was in place prior to the sloughing events.

[86] In his submissions, the Consumer Advocate acknowledged that the information provided by NS Power in Undertaking U-11 confirms that in 2017, the utility had considered appropriate preventative measures to avoid sloughing events. However, he noted that these efforts were in response to an event occurring (i.e., sloughing in 2016) rather than ongoing efforts to ensure the utility is following best practices. Similarly, the work that CBCL completed in 2023 was a reactive effort undertaken by NS Power in response to the 2023 sloughing events. The Consumer Advocate stated "it would be prudent for NS Power to take a more proactive approach to avoidance of incidents of this

nature. Perhaps if NS Power had taken a more proactive approach the sloughing events that occurred in 2023 would have been avoided.”

[87] In its reply submissions, NS Power asserts that the Consumer Advocate unfairly mischaracterizes that the utility was reactive in implementing measures to address coal pile sloughing. First, prior to the 2016 PTMT sloughing event, NS Power had measures in place to contain sloughing (including the open box culvert below the coal pile). These measures met the Provincial operating approval requirements for the PTMT site. Following the 2016 sloughing, NS Power undertook site assessments and implemented measures to improve the containment provisions. These measures proved cost-effective and contained any further sloughing until 2023. Similarly, after the 2023 sloughing events, the company implemented additional measures (i.e., temporarily increased the setback distance while undertaking a rain diversion capital project) to improve sloughing containment measures. NS Power submitted that these actions were proactive and consistent with the standards set by the utility and regulators.

[88] The question the Board must answer is whether the utility’s actions were prudent. The Board finds that they were. Indeed, other solutions could have been implemented by the company to limit the occurrence of sloughing events and the related costs to ratepayers. However, the cost to implement measures to entirely eliminate these events and costs would likely be significant. Instead, the Board finds to date that NS Power has effectively managed the PTMT site, taking care to avoid unnecessary spending while avoiding undue impacts to the environment and costs to ratepayers.

[89] For these reasons, the Board finds that a FAM disallowance related to the 2023 sloughing events is not warranted.

[90] On a final point, the Board notes the Industrial Group's submission that the evidence adduced in this proceeding about the sloughing events has been confusing, inconsistent and contradictory. This concern appears to relate primarily to evidence presented about the setback distance and PTMT coal pile volumes. After reviewing the entirety of the evidence, the Board believes that it has a good understanding of these issues. However, as a result of some inconsistencies in NS Power's filed evidence, it was not until the utility provided some clarity in its undertakings that these inconsistencies were addressed. As such, the Board finds that the Industrial Group's concerns are not without merit. The Board, therefore, reminds NS Power of its obligation to produce all documents necessary and relevant for the FAM Auditor to complete its review. Further, if there are inaccuracies and/or inconsistencies in the audit report, it is incumbent on NS Power to correct those mistakes.

3.4 Point Tupper Generator Step-Up Transformer – Forced Outage

[91] Point Tupper experienced a 78-day forced outage from July 16, 2020, to October 2, 2020, due to the failure of a step-up transformer. The failure was caused by moisture entering the transformer during a repair that occurred on days with high humidity and some minor precipitation. The RCA for the failure identified four "immediate factors" and three "root factors". The immediate factors included: (1) inadequate maintenance manuals which did not adequately address the issue of removing moisture from the transformer insulation; (2) the exposure of the transformer to moisture in the atmosphere during maintenance work; (3) the lack of an online, functioning gas monitor; and (4) a missing dissolved gas analysis. The root factors included inadequate maintenance practices related to the drying of the transformer insulation, inadequate capacity to

conduct a dissolved gas analysis, and inadequate maintenance actions in response to problems with the online gas monitor.

[92] The FAM Audit report noted that NS Power had estimated the incremental replacement energy cost of the failure event to be approximately \$1.25 million. NS Power worked with its insurer's loss adjuster to update the costs to \$1 million and this amount was ultimately recovered by the utility from its insurer in a settlement. In its reply submissions, NS Power confirmed that \$1 million was credited to the FAM balance.

[93] In his evidence, Mr. Wilson stated that Bates White seemed to suggest that a third party may bear responsibility for the transformer failure and related FAM costs. However, he asserted that even if a third party bears some responsibility, if NS Power is unable to recover full damages from that party, then it should bear responsibility for the work of its contractor. As such, he recommended that the Board disallow \$0.25 million for the event, which is the difference between NS Power's initially calculated replacement energy cost and the amount received from the insurer. Mr. Wilson noted that Bates White found that inadequate maintenance and practices by NS Power contributed to the transformer failure and forced outage. He argued that "these failures are the very definition of imprudent facility operation and customers should not be required to bear these costs". He also recommended that the Board request documentation from NS Power to confirm the calculation of \$1.25 million in replacement energy costs is correct and to verify that \$0.25 million is the correct amount for any disallowance.

[94] The Consumer Advocate supports Mr. Wilson's recommendation for a disallowance. In his closing submissions, he contends that NS Power proceeded with work even though it was aware of the risk of moisture, which the Consumer Advocate

submits constitutes imprudent and unreasonable decision making at an operational level. The Industrial Group also supports Mr. Wilson's recommendation, with the disallowance amount to be confirmed in a compliance filing.

3.4.1 Findings

[95] In its response to Undertaking U-28, NS Power provided replacement energy cost calculations associated with the transformer failure event and forced outage. The analysis presents three scenarios to calculate replacement energy costs. Scenario 3 presents NS Power's own calculation of \$1.25 million for replacement energy costs. Scenarios 1 and 2 present alternative replacement energy cost calculations as proposed by NS Power's insurance adjuster. The main difference between the three scenarios is to what extent Ligan 2 was recalled due to the outage at Point Tupper versus other factors. The replacement energy cost calculations under the scenarios proposed by the adjuster are lower than those calculated by NS Power under Scenario 3. The Board has reviewed the calculations and finds the data and analysis to be reasonable, and that each scenario presents plausible outcomes. The Board also finds that the \$1 million insurance settlement provides a fair compromise between the replacement energy costs calculated for each scenario.

[96] The Board, therefore, finds that NS Power's insurance settlement appropriately recovered the replacement energy costs associated with the Point Tupper transformer failure and forced outage. In its response to Undertaking U-7, Bates White confirmed that there were no FAM costs beyond incremental replacement energy costs associated with the transformer failure event. As such, since ratepayers paid no FAM cost

associated with the event, the Board does not find it necessary to make any prudency findings about NS Power's actions related to the transformer failure.

[97] In its reply submissions, NS Power stated that it is confident it recovered the full replacement energy costs associated with this forced outage event through the negotiated settlement with its insurer. The Board agrees and finds that a FAM disallowance related to the event is not warranted.

3.5 Point Tupper Exciter Armature – Forced Outage

[98] Point Tupper had another outage from October 4, 2022, to October 8, 2022, caused by failed diodes on the entire phase of the rotating rectifier of the exciter armature. The FAM Audit report notes that “the root cause appears to be wear and tear on the parts from both normal and storm operation, lack of maintenance on the rotating exciter armature, and a lack of operator checks on the failed diode indicator lights while the unit is in operation.” In response to the Industrial Group's IR-20(a), Bates White also noted that NS Power personnel lacked awareness of the failed diodes due to the diode indicator lights not working and plant personnel not completing checks of the lights' functionality. Bates White estimated the FAM costs associated with this event to be \$720,484.

[99] In his evidence, Mr. Wilson noted that Bates White found that inadequate maintenance and practices by NS Power contributed to the outage event. He argued that these failures demonstrate imprudent facility operation and customers should not be required to bear these costs. As such, he recommended that the Board disallow \$720,000 in FAM costs related to the event.

[100] The Industrial Group's IR-3 to Mr. Wilson asked if he had identified anything in the RCA for the event beyond what was included in the FAM Audit report. Mr. Wilson responded:

As for the 2022 event, the report indicates that, "the fuses and diodes were last replaced in 2011, with this work on the outage list to be completed in 2019 but it was not done," that NS Power observed that "exciter voltage and current [were] outside of normal operating range before the unit was shut down during the storm," and that "operator rounds to verify the failed diode lights ... was found to not be a part of existing operator round requirements." (Exhibit N-7, IG RIR-03, Attachment 9, pp. 6-7)

[Exhibit N-22, p. 5]

[101] In its Rebuttal Evidence, NS Power noted that prior to the failure event, the Point Tupper automatic voltage regulation control system had been upgraded with a modern Basler control unit with additional monitoring. Among other things, this unit was intended to provide adequate monitoring of the diodes, making the status lights a redundant control. This gave NS Power operators an alternative to relying solely on the diode status lights, which was an older mechanism. NS Power, therefore, asserted that it was reasonable for plant personnel not to check the diode indicator lights at the time of the event. The diodes were removed from NS Power's maintenance strategy at the time, as a means of reducing overall maintenance costs for the benefit of customers.

[102] As noted by Mr. Wilson, the RCA for this event stated: "the fuses and diodes were last replaced in 2011, with this work on the outage list to be completed in 2019 but it was not done." The reason NS Power did not replace the diodes in 2019 was because it had moved from a "time-based" maintenance strategy to a "condition-based" strategy.

This was a topic of discussion during the hearing:

Q. (Rubin) Okay. And looking at the root causes that are listed, the first one, it describes a lack of maintenance on the rotating exciter armature, and it notes that -- or there's evidence that the fuses and diodes were last replaced in 2011, scheduled to be completed in 2019, but not done. Why is that?

A. (MacIntosh) Yes, I think it's building off of what we discussed yesterday, is that the operations team was utilizing a condition-based maintenance practice for understanding the condition of those diodes and fuses, and they were doing testing on those diodes and fuses as an alternative to a time-based replacement.

Q. Okay. So initially you were on a time-based, but at some point a decision was made, was, "We're just going to keep checking to see if they're working, and if that's okay, we're not going to carry out the recommended maintenance on the schedule"?

A. (MacIntosh) That's my understanding, yes.

Q. So would they only be replaced if the testing tested them as not working?

A. (MacIntosh) Prior to the event, yes, that was the approach.

Q. Okay. And how frequently was the testing done?

A. (MacIntosh) Well, multiple different types of tests. So the online monitoring of the modern control system that was deployed, which we refer to as the Basler control system, would monitor the overall effectiveness of the excitation system. The specific diode and fuses checks, as we have outlined in the RCA, would have been done through an offline test, which injects an AC current and sees how that AC current is converted to the DC, and that's done as an offline test. So those two pieces of the strategy assess the condition of the diodes.

Q. And how frequently is the offline testing? Was the -- how frequent was that done?

A. (MacIntosh) This would be done during major planned maintenances of the generator and when they went offline, but the last test we did have on that was in 2020, that had that offline test, prior to the event.

Q. Okay. So the last test was in 2020. That would have been past the original scheduled replacement date; correct? They were originally scheduled to be replaced in 2019. They weren't, but there was -- just let me finish my question. But there was a test done in 2020 when it was offline of the diodes, and they were working. Is that right?

A. (MacIntosh) It's just important too, that there was -- what was outlined in the RCA, that there was a time-based recommendation that happened after the event. That time-based recommendation at the time of the event was not their current practice. They were using a condition-based maintenance approach at the time.

Q. So am I incorrect that it was scheduled to be completed in 2019? You had agreed with me initially.

A. (MacIntosh) I agreed with what was said in the report just to facilitate your line of questioning. I agreed with what was said in the Point Tupper -- what you put on the screen and the Bates White report, what it says there.

Yes, Ms. Rubin, I think I'm trying to say that in 2019 there was a scheduled replacement, but that scheduled replacement was not done due to the condition-based maintenance that was completed instead of doing the replacement.

Q. So I am correct that there was a scheduled maintenance to be done in 2019 -- a scheduled replacement to be done in 2019. It wasn't. But while the unit was offline in 2020, the diodes were checked, and they worked?

A. (MacIntosh) Yes.

Q. Okay. And at that time, NSPI was relying on conditions-based, so it was relying on that actual test in 2020, and the online overall exciter system?

A. (MacIntosh) Yes.

[Transcript, March 19, 2025, pp. 651-655]

[103] Further to the comment in the above exchange about diode testing being completed in 2020, NS Power's Rebuttal Evidence indicates that the August 2020 testing confirmed that the diodes were working properly at that time. The alternating current testing completed after the October 2022 failure event confirmed that the diodes were not subsequently working. In addition, after the event and through the comprehensive RCA, NS Power determined that diode status lights would still be beneficial in addition to the modern Basler unit, as they would give more information on the condition of individual components. As a result, following the failure event, NS Power returned to a more conservative time-based maintenance strategy for the diodes.

[104] The Consumer Advocate submitted that NS Power's decision to not require scheduled checks on the diode status lights, as a result of installing the Basler unit, was misguided. The Consumer Advocate also submitted that NS Power's management decisions to switch from time-based maintenance to a condition-based system, and to cease relying upon status lights, contributed to the forced outage. As such, he argued that NS Power has not met its burden to demonstrate that it has managed this facility in a prudent manner, and accordingly Mr. Wilson's recommended disallowance should be ordered.

[105] Similarly, the Industrial Group submitted that NS Power's approach to the maintenance of the Point Tupper rotating rectifier on the exciter armature, specifically the diodes, was unreasonable and imprudent. The Industrial Group believes the diodes

should have been replaced on or around 2019, based on the scheduled maintenance. The Industrial Group, therefore, supports Mr. Wilson's disallowance recommendation.

3.5.1 Findings

[106] In its response to Undertaking U-41, NS Power provided documentation from the manufacturer of the failed diodes. This information shows the manufacturer has no fixed replacement interval for the diodes. The Board also notes that the testing of the diodes in 2020 confirmed that they were working. With the benefit of hindsight and knowing that the diodes failed sometime after that, it is easy to suggest that NS Power should have continued with its time-based maintenance strategy and replaced the diodes in 2019. However, the Board finds that NS Power's decision not to replace the diodes in 2019 was reasonable, given its change to a condition-based approach and the subsequent 2020 test results.

[107] Further, in its reply submissions, NS Power disagrees with the claims that utilizing a condition-based maintenance strategy was unreasonable and that reverting from condition-based to time-based is indicative of imprudence. The utility noted:

... Implementing condition-based strategies is considered industry best practice for many assets, and many times allows for longer asset lives which reduces costs for customers. It should also be noted that condition-based strategies may also shorten intervals when compared to time-based methodologies if there are findings which require attention. This approach results in the right work being completed at the right time.

[NS Power, Reply to Closing Submissions, p. 48]

[108] The Board notes that NS Power's use of a condition-based assessment management strategy has been referenced many times in the utility's Annual Capital Expenditure Plan (ACE Plan) filings with the Board. While the specifics of many capital projects in those ACE Plans have been questioned by the Board, the Board has generally accepted the condition-based asset management strategy as a sound approach. In

addition, the Board agrees with NS Power and FTI Consulting that the use of a condition-based strategy helps to manage costs to customers by balancing short-term savings from lower levels of maintenance or redundancy against long-term cost from failure.

[109] NS Power also argues that the company's decision to change back to a time-based diode maintenance approach, following the failure event and after completion of the RCA, was not imprudent:

... It reflects the normal process of operational learning and continuous improvement, particularly following a detailed root cause analysis. The RCA process itself is designed to identify opportunities to enhance reliability and inform future maintenance practices. That NS Power responded to the RCA by adopting a more conservative, time-based replacement approach demonstrates responsible asset management. The CA's position on this point risks creating a disincentive for utilities to evolve their practices and act on learnings. Good utility practice recognizes that operations are complex and that prudent decisions evolve with new data and hindsight. Penalizing that process wrongly conflates continuous improvement with evidence of prior error and sends the wrong signal.

[NS Power, Reply to Closing Submissions, p. 49]

The Board agrees and finds that NS Power completed a comprehensive RCA for this event and identified several enhancements to improve the overall maintenance strategy for this asset class. In the Board's opinion, NS Power's actions do not constitute imprudence.

[110] The Board finds that a FAM disallowance related to the Point Tupper failure event related to failed diodes on the exciter armature is not warranted.

3.6 Tufts Cove Heavy Fuel Oil leak

[111] A 50-litre heavy fuel oil (HFO) spill occurred at the Tufts Cove plant on May 10-11, 2022. About a litre of HFO was discharged into Halifax Harbour. The event was discovered on May 10, at approximately 13:45, when a pressure safety valve was found to be overflowing its containment. Immediately following the release, NS Power personnel opened two valves, depressurizing the piping system, and the source of the leak was

stopped. NS Power retained the services of an emergency response contractor to deploy two oil booms and pom poms in Halifax Harbour as well as to place pom poms along the shoreline to contain and remove the oil. NS Power also retained a consultant to manage the cleanup of the land portion of the release per Nova Scotia's *Contaminated Sites Regulations*.

[112] As noted by Bates White in the FAM Audit report, the incident appears to have been caused by an HFO recirculation pump pumping HFO into a closed system. This resulted from a valve being closed that was not intended to be closed. This caused release of HFO through a pressure safety valve. This valve containment apparatus was not designed to contain anything beyond small releases of HFO due to thermal expansion, not the volume of HFO released during this event. Hence, when HFO was released, it overflowed containment onto the ground below and into Halifax Harbour.

[113] Bates White stated that no NS Power operators acknowledged closing (or re-opening) the valve(s), no video evidence or data exists that would confirm manual closure, nor did NS Power have remote position indicators on manual valves observable from a central location. Nonetheless, Bates White concluded that the most likely cause of this event was human error. Bates White estimated the total FAM cost of the event to be \$0.13 million.

[114] Mr. Wilson recommended that the Board disallow \$0.13 million for the oil spill. He noted that both NS Power and Bates White agree that the event was likely caused by human error. In response to the Industrial Group's IR-4(c), Mr. Wilson stated that NS Power could not narrow down the "human error" to a single staff member's reasonable but erroneous action. In this context, he asserted that the fact significant

uncertainty remains regarding the cause of the spill demonstrates that NS Power fundamentally failed to control its HFO piping facilities. Mr. Wilson contends that such errors reflect imprudent facility operation and customers should not be required to bear these costs.

3.6.1 Findings

[115] In its closing submissions, the Industrial Group submitted that NS Power had inadequate safeguards and systems in place to prevent human error. The Industrial Group also submitted that NS Power had inadequate protocols to address the implications of the HFO spill. As such, the Industrial Group argued that NS Power failed to prove that it acted prudently with respect to the human error that occurred. The Industrial Group, therefore, supports Mr. Wilson's recommendation for a disallowance.

[116] On the other hand, the Consumer Advocate's closing submission confirmed that he is not seeking a disallowance for this event. In particular, he noted testimony during the hearing, that confirmed NS Power effectively narrowed down the error to a probable mistake by one of its staff in manually closing the valve. It was not appropriate to have remote sensing on all the valves in this generating facility because there were too many. The cost would be prohibitive. NS Power carries out risk-based inspections and assessments which consider the configuration of the systems, the frequency of use, and the potential consequences of failure in any case.

[117] The Board finds NS Power had appropriate safeguards and systems in place that would reasonably be expected of a utility to safely complete work on the HFO system. This includes its safe work permitting process and related lockout practices:

A. (Drover) There was one other thing I wanted to add to the question that you asked regarding the operation staff. I did want to note with the safe work permit system, that at any of our facilities we would install hundreds of safe work permits per year, and that lock-

out tag-out process, and the safe work permitting process have been in place for decades within Nova Scotia Power and there have been very minimal incidents with those systems. They are a very robust system with a very robust training and certification program for that system. And as I mentioned, minimal incidents that happen with regards to our safe work permitting system.

[Transcript, March 18, 2025, pp. 516-517]

[118] Further, the Board agrees with NS Power that it would not be reasonable or cost-effective to automate all HFO valves, particularly valves that are operated infrequently. Indeed, undertaking such costly measures could be imprudent, given NS Power's established risk level assessment procedures and safe permitting process.

[119] The Board finds that there was no imprudence by NS Power associated with this oil spill event. In this instance, the Board finds the event was probably due to a simple act of human error, but no systematic failure or imprudent practice played part in the incident. The Board finds that a FAM disallowance related to the Tufts Cove HFO leak event is not warranted.

3.7 Trenton 5 Boiler Feed Pump

[120] On January 12, 2023, Unit 5 at the Trenton Generating Facility was taken offline for maintenance due to signs of a boiler tube leak. Per Trenton 5 typical practice, the manual suction valves on the Unit 5 boiler feed water pumps were manually closed once the boiler was offline. This was done to prevent water leakage from the pumps' mechanical seals from entering the pumps' lube oil.

[121] After the boiler leak was repaired, plant personnel scheduled an initial boiler pressure test for January 14, 2023. To prepare the boiler for the test, plant personnel planned to use the 5-2 boiler feed pump to fill the boiler with treated water. According to the FAM Audit report, on January 13, 2023, in advance of operating the 5-2 feed pump, plant personnel discussed the importance of ensuring the manual suction valve on the

feed pump was open prior to starting the pump. As it turns out, the suction valve was not opened prior to starting the pump, leading to pump damage and failure. An RCA was completed for this event approximately two and half months later, on March 26, 2023.

[122] As a result of the feed pump failure, Trenton Unit 5 was offline for maintenance for a longer period than otherwise would have been required. NS Power's 2023 FAM Annual Report attributes all offline hours from January 15, 2023, at 23:45 through January 18, 2023, at 07:52 to "5-2 boiler feed pump damage", plus the hours from January 25, 2023, at 07:52 to February 3, 2023, at 03:57 to "repair 5-2 boiler feedwater pump." Focusing solely on these hours, Bates White calculated the incremental cost of dispatch associated with the feed pump failure to be \$1,141,261.58. Bates White did not recommend a disallowance because it did not have strong confidence that NS Power acted imprudently. However, it also stated that a disallowance may still be reasonable.

[123] The FAM Audit report summarizes the events leading up to the 5-2 boiler feed pump failure as follows (note "SPO" refers to Steam Plant Operator):

After the tailboard with the lead hand, the Unit 5 SPO went to the upper floors to operate valving at the [deaerator ("DA")] storage tank for other work. Prior to going to the upper floors, the SPO did not open or check the 5-2 boiler feed pump suction valve. The Unit 5 SPO's radio earpiece had stopped working earlier in the day, and the operator was using the radio with a standard speaker and mic increasing difficulty in hearing.

With the permit removed the Unit 5 panel operator was given the all-clear by the lead hand to begin the process of filling the boiler with the treated water using the 5-2 boiler feed pump. The treated water temperature in the DA storage tank and steam drum metal temperatures were matched using the boiler manufacturers recommendations for boiler filling. The Unit 5 Panel Operator announced they were starting the boiler feed pump over the radio. The Unit 5 SPO heard the announcement on the radio but thought the pump being started was associated with the work being attended to on the DA storage, separate from the boiler feed pump.

The Unit 5 elevator was not working on January 13, and the operators were required to either use the stairs or travel over to the Unit 6 elevator which impeded travel on Unit 5. It is typical practice for the SPO to be present at major equipment when it is being started. The Unit 6 SPO was on the bottom floor in the vicinity of Unit 5 boiler feed pumps and

heard the announcement of the plan to start one of the boiler feed pumps. He radioed to the Unit 5 SPO, indicating he was near the boiler feed pump for the startup saving them the trip down to the bottom floor. It was the intention to save the travel inconvenience to the Unit 5 SPO.

All the pump permissives were met on the panel. When contacted over the radio by the Unit 6 SPO that he was present at the 5-2 boiler feed pump, the panel operator gave all clear that the pump was being started. The suction valve position cannot be viewed from the bottom floor next to boiler feed pump and is not something the Unit 6 SPO would have been able to see from the bottom floor easily.

One permissive in particular for starting the pump is the full open limit switch on the feed pump suction valve. This was incorrectly showing full open on the panel allowing the pump to start at 21:18. The pump sounded normal to the Unit 6 SPO, however it was noted by the panel operator that there was no flow or pressure on the discharge lines. They asked the Unit 6 Panel operator to monitor both panels and quickly went out to check the discharge valve, because both SPO's were on different floors, but noticed the suction valve was still closed. He immediately returned to the control room and asked the Unit 6 Panel Operator monitoring the panel to stop the 5-2 boiler feed pump.

[Exhibit N-1, p. 244]

[124] Both Bates White and NS Power agree that the boiler feed pump failure was a result of human error. Mr. Wilson reviewed the RCA for this event and agreed with that conclusion. Specifically, Mr. Wilson noted that contrary to NS Power standard practice, the SPO did not check or open the suction valve on the 5-2 boiler feed pump. He also noted that the SPO had faulty communications equipment, and, as a result, the SPO erroneously thought that the pump associated with the deaerator storage tank was started, when in fact it was the boiler feed pump. Mr. Wilson implies that without this faulty communication, the SPO could have alerted the panel operator that the pump suction valve may not have been opened.

[125] Mr. Wilson also attributed the failure to the faulty limit switch. He stated that the issue with the limit switch had been identified roughly three months before the feed pump failure, but that NS Power was unable to verify whether the related corrective work order was completed and that proper functioning of the limit switch was verified. He also pointed out that the RCA for the failure event showed a lack of due diligence by NS Power.

In particular, he stated that the RCA points out that NS Power did not have a process for operators to review procedures for non-routine work prior to starting the work, and that the procedures for Trenton Unit 5 differ from those for Unit 6.

[126] Based on his review, Mr. Wilson recommended a disallowance of \$1.14 million per Bates White's calculated incremental cost of dispatch associated with the feed pump failure. Mr. Wilson argued that the human errors resulting in the pump failure reflect imprudent facility operation and that customers should not be responsible for the related costs.

[127] In its Rebuttal Evidence, NS Power responded to Mr. Wilson's concern about a lack of evidence proving that the limit switch had been repaired in October 2022. NS Power confirmed that the "full open limit switch" had been repaired and verified because the company opened a work order in its work management system to make this repair three months prior to the feed pump failure. The repair was made while Unit 5 was offline for maintenance. NS Power noted that the repair took 12 person-hours of work by competent technicians, was completed, and the work order closed. Three months later, the limit switch was again not working, a condition that directly contributed to this event.

[128] NS Power's Rebuttal Evidence asserted that the SPO's faulty communication equipment was not a contributing factor to the pump failure event. NS Power noted that both the Unit 5 and Unit 6 SPOs had working radios at the time of the event. SPO 5 had a faulty headset, but NS Power stated that this did not impact the operation of the working radio.

[129] Both the Consumer Advocate and the Industrial Group support Mr. Wilson's recommendation for a disallowance. The Consumer Advocate stated that the feed pump

failure appears to have been avoidable, and was caused by human error, equipment problems and potential NS Power procedural failings. He submitted that NS Power has not provided sufficient evidence to prove that the failure event was solely the result of unpreventable human error and that the utility otherwise acted prudently and reasonably in that regard. Similarly, the Industrial Group submitted that NS Power failed to adduce evidence that its actions in relation to the feed pump failure were prudent. The Industrial Group submitted that the failure event was not just an issue of human error, but a system of errors in relation to the proper maintenance and record keeping of NS Power.

3.7.1 Findings

[130] The Board finds that evidence presented in this proceeding raises a question about NS Power's prudence in relation to the damage caused to the Trenton 5 boiler feed pump. This was the result of an unexpected event that, by its own evidence, NS Power considers having occurred because of a combination of: (1) a mechanical issue with a limit switch that failed to recognize that the pump suction valve was closed; and (2) proper procedures to ensure that the suction valve was opened were not followed. The Board finds that the unexpected nature of the incident, its significance to ratepayers and the existence of multiple errors displace the presumption of prudence in this case. To be clear, these do not necessarily demonstrate that NS Power was imprudent, but simply that "the burden shifts firmly to the utility to demonstrate that the investment or expense was both reasonable and prudent".

[131] The Board will first address two concerns raised by Mr. Wilson. The first is Mr. Wilson's assertion that faulty communication equipment led, in part, to the feed pump failure. During the hearing, this issue was discussed at length. NS Power noted that the

faulty communication equipment in question was the radio incorporated into the ear protection used by SPO-5. However, SPO-5 also used a standard radio on the day of the pump failure as another means of communication with plant staff. NS Power further noted that both means of communication are acceptable and standard at NS Power plants.

[132] NS Power reiterated this point in its reply submissions:

... the use of handheld radios, with or without earpieces, is standard practice in power plants, including at Trenton Unit 5. This approach reflects common industry norms for maintaining effective communication in environments that are often loud. While earpieces are commonly used to improve clarity in high-noise settings, they are still accessories to a system designed to function reliably with or without them. A single equipment failure, such as an earpiece malfunction, does not render the entire communication method imprudent. Rather, it highlights the importance of redundancy. In this case, handheld radios were being used as intended, and the failure of a component accessory does not reasonably indicate imprudence. The relevant question is whether the utility adopted a communication system that is appropriate, safe, and consistent with good utility practice. In this instance, it did.

[NS Power, Reply to Closing Submissions, p. 54]

The Board agrees.

[133] The second relates to Mr. Wilson's claim that NS Power was unable to verify whether the October 2022 limit switch corrective work was actually completed and whether NS Power confirmed that the switch was functioning properly following the repair. On this point, the Board also disagrees with Mr. Wilson. The work order for the referenced corrective work was provided as Attachment 1 to NS Power's response to NSUARB IR-5. The work order corroborates the information provided in NS Power's Rebuttal Evidence about the scope and completion of the related work. The work order itself does not necessarily confirm that the functionality of the limit switch was verified immediately after the repair was completed. Nonetheless, it does not seem plausible that NS Power would have gone through the effort and cost of the repair without subsequently testing the switch to show it was working properly. Further, as noted by NS Power in its hearing testimony, after the repair was completed, the pump was subsequently started and operated

throughout the fall of 2022. This would not have been possible if the repair of the limit switch had not been completed. Based on the evidence provided, the Board finds the limit switch was, in fact, repaired in October 2022, and that it failed again sometime thereafter.

[134] Notwithstanding the Board's findings on the above two issues, the Board finds that NS Power's evidence, overall, did not demonstrate that the expenses arising from this event were reasonable and prudent.

[135] In its testimony, NS Power discussed its standard practices associated with the Trenton boiler pressure testing and startup/operation of the boiler feedwater pumps. These practices include the following elements:

- The full operations crew for the plant partake in a tailboard meeting to discuss the day's operations and complete a risk assessment before the work starts;
- The SPO for the unit is to walk the system prior to starting any critical piece of equipment, such as a boiler feed pump;
- The SPO for the unit is to be present at major equipment when it is being started; and
- During the feedwater pump start-up procedure, the SPO for the unit is to ensure that the pump suction valve is opened fully.

[136] The Board concludes that the circumstances leading to the feedwater pump failure resulted from NS Power personnel not following documented standard practice. SPO 5 did not walk the system prior to the startup of the 5-2 feedwater pump. SPO 5 was not present at the 5-2 feedwater pump when it was started. And SPO 5 did not open the suction valve on the 5-2 feedwater pump. SPO 6 offered to assume these responsibilities

but NS Power's evidence did not fully address what SPO 6 actually did other than to be present at the feed pump when it was started.

[137] The audit report notes that the SPO for Trenton Unit 6 was in the vicinity of the Unit 5 boiler feed pumps and heard the announcement of the plan to start the 5-2 feedwater pump. As such, he radioed to the Unit 5 SPO, indicating he was near the boiler feed pump for the startup, saving SPO 5 the trip down to the pump. This was discussed during the hearing:

A. (Drover) ...So typically, a operator is present in the startup of a major piece of equipment, and in this case, the SPO associated with Unit 5 was up on the seventh floor at the DA tank and the outside operator for Unit 6 was in the area. And it is not uncommon for operations staff, since they are a team, to act as a team, and to radio each other to provide assistance. That is common operations practice within a power plant when doing either routine operations work, or troubleshooting work, or any sort of response to an operational issue. So I would not characterize that as cutting a corner or anything that is uncommon. It is a team, an operations team that works together in a powerplant.

Q. (CA – Murphy) Okay. And so would the Unit 6 SPO know that in offering to take on that responsibility, that they should be looking to make sure the suction valve is closed?

A. (Drover) So it is the responsibility of the operator, whatever operator that is, to follow the procedure for that particular piece of equipment.

Q. Okay. And they didn't do that, right? Because it goes on to say:

All the pump permissives were met on the panel. When contacted over the radio by the Unit 6 SPO that he was present at the 5-2 boiler feed pump, the panel operator gave all clear that the pump was being started. The suction valve position cannot be viewed from the bottom floor next to boiler feed pump and is not something the Unit 6 SPO would have been able to see from the bottom floor easily.

And so it sounds like the Unit 6 SPO gave the go-ahead to start the unit when they shouldn't have. Is that right?

A. (Drover) The Unit 6 operator did not follow a step in the procedure and did not confirm the suction valve was open prior to starting the boiler feed pump.

...

MEMBER DEVEAU: Would the -- sorry, Ms. Drover, the -- would the plant operator for the six -- Unit 6 be familiar with the operation of Unit 5? Would they know that there are differences in the operating procedures?

MS. DROVER: Yes, they would. So ---

MEMBER DEVEAU: Do they stick with Unit 6 or do they, you know, on another shift or another month they would be on the other unit, or can you just go through that, please?

MS. DROVER: Yeah, I think that that is an excellent question.

So yes, operators typically stick with their unit, but there are lots of different reasons that, for example, a Unit 6 operator would be supporting Unit 5. An example would be people on vacation or people that are sick, and we have backfill for those people.

So it's very important to note that an operator needs to be trained and competent to do that job before they do it. So that goes for a Unit 6 operator operating Unit 5 equipment or an outside operator operating the panel or the panel operator being outside.

So there are skills associated with the operators, and the operators only perform the duties of the skills that they are trained and competent in doing.

[Transcript, March 18, 2025, pp. 525-533]

[138] The Board understands this exchange and NS Power's assertion that SPO 6 has similar training and competencies as SPO 5, particularly as it relates to SPO 6's abilities to operate equipment associated with Unit 5 and specifically the 5-2 feedwater pump. Nevertheless, it is clear to the Board that, contrary to NS Power's standard practice, SPO 6 failed to check the suction valve on the feedwater pump prior to start up.

[139] While the Board does not suggest that there is anything wrong with teamwork, successful teamwork requires effective communication. The RCA clearly notes that SPO 6 radioed SPO 5 to let them know they were near the Unit 5 boiler feed pumps for the startup to save SPO 5 the "travel inconvenience".

[140] The Board considers this communication to have been critical and yet, NS Power presented no other evidence about it. It appears that SPO 5 may have been confused that the Unit 5 Panel Operator's announcement about a pump start was about a pump associated with work SPO 5 was engaged in at the deaerator storage tank rather than the 5-2 boiler feed pump (which SPO 5 would have known would be starting at some point). Once contacted about the start-up of the 5-2 boiler feed pump by SPO 6, SPO 5 should have realized that the 5-2 pump was going to be started. At the same time, SPO 5 knew he or she had not completed the necessary procedures to start the feed pump,

including the opening of the suction valve which was clearly emphasized to them at the tailboard meeting with the lead hand. This information should have been relayed to SPO 6. While it may have been reasonable for SPO 5 to have assumed that SPO 6 knew the procedures that were required, the Board finds it would have been unreasonable for SPO 5 to have assumed that SPO 6 would have known whether or not the procedures had been completed when the Unit 5 Panel Operator announced they were starting the boiler feed pump. Likewise, if SPO 5 was not offering this information, the Board would have expected SPO 6 to ask about that when stepping into SPO 5's shoes and assuming their responsibilities.

[141] Again, NS Power presented no evidence to demonstrate that appropriate and effective communication between these teammates occurred. No checklists or logbooks were filed by NS Power in this proceeding to provide contemporaneous insight into what occurred, despite the burden on it to demonstrate its prudence.

[142] Another issue relates to the tailboard meeting held before the 5-2 feedwater pump was started. As noted above, NS Power testified that its standard practice for filling the Unit 5 boiler for pressure testing and for the start-up of boiler feedwater pumps includes a tailboard discussion where all operations crew are present and perform a risk assessment covering the task before the work starts. In this case no evidence was presented to confirm SPO 6 attended the tailboard meeting before the 5-2 feedwater pump was started. If SPO 6 was not at the tailboard meeting, this would be another omission from NS Power's standard practice and would present another concern for the Board.

[143] In its response to Undertaking U-29, NS Power was unable to confirm whether SPO 6 was at the tailboard meeting. It said its risk assessment documents that would have shown who was at the tailboard meeting are only retained for 90 days and the risk assessment was not documented in the RCA. NS Power's destruction of its risk assessment documents in the normal course is puzzling. Given the occurrence of a significant event, it should have appreciated that these documents may be relevant in a FAM Audit and NS Power should have recognized there was at least some possibility it may be called upon to demonstrate its prudence. As noted earlier in this decision, in demonstrating prudence, a utility without contemporaneous evidence faces a heavy burden.

[144] However, NS Power noted that it is normal practice for all operators to attend the tailboard meeting at the beginning of the shift. In its reply submissions, NS Power stated that there is no reason to believe that SPO 6 was not present at the tailboard meeting.

[145] The Board gives less weight to NS Power's reference to its normal practices and its assumptions than it would to contemporaneous documentation supporting that its processes and procedures were being followed. No documentation was provided by NS Power to indicate they were. Further, NS Power's assumption that the tailboard meeting for work on the 5-2 feed pump occurred at the beginning of the shift is questionable. The timeline in the RCA suggests the tailboard meeting involving the lead hand and SPO 5 occurred after some work was done and not at the start of the shift.

[146] A second contributing factor to the feedwater pump failure relates to the faulty limit switch on the pump's suction valve. The limit switch provides a permissive for

the panel operator in the control room to start the pump only if the limit switch shows that the suction valve is open. As defined by NS Power, a permissive is control logic in the system so that the pump would not be able to be started without it registering a permissive (i.e., that the suction valve was open). As it relates to the faulty limit switch permissive on the feed pump suction valve, NS Power summarized the events as follows:

A. (Drover) ...So besides the operator opening the suction valve, there is a permissive, and a permissive is basically a control that limits or does not provide the ability to start up a piece of equipment if that permissive is not met. In this case, that is a secondary method or verification for starting up the boiler feed pump, and the control room operator would have the ability to start up the pump in this case because the limit switch was showing that the suction valve was open incorrectly, providing the permissive or the ability to start up the pump.

After the incident, it was found that the limit switch was found not to make its closed limit, which means that it was not engaging the contact when it reached the limit, which incorrectly gave the permissive that it was open.

[Transcript, March 18, 2025, pp. 527-528]

[147] The Board acknowledges that the limit switch permissive was not functioning properly and showed an incorrect permissive when the 5-2 feed pump was started. However, the Board is concerned that this limit switch issue was not detected prior to the 5-2 feedwater pump being started. A similar concern was expressed by the Industrial Group in its closing submissions. Specifically, it is difficult to understand how the limit switch was not flagged as faulty when the SPO manually closed the suction valve on the 5-2 feedwater pump the day before the pump was started and the limit switch continued to show the valve as being open. This was discussed at the hearing:

MEMBER MURPHY: If it was working, it would have shown it as closed; correct?

MS. DROVER: If it was working ---

MEMBER MURPHY: And the valve was closed, it would have shown it as closed?

MS. DROVER: Yes.

MEMBER MURPHY: The outage happened, somebody manually went down and closed that valve; correct?

MS. DROVER: In the October outage?

MEMBER MURPHY: When the outage -- the feedwater pump -- yeah, when the feedwater pump issue happened, someone had to go down and close the valve, right?

MS. DROVER: Yes. In January.

MEMBER MURPHY: Right. And that limit switch was still showing as open?

S. DROVER: In January that limit switch was still showing as open after that valve had closed.

MEMBER MURPHY: After somebody manually went down and closed the valve?

MS. DROVER: Yes, in January.

MEMBER MURPHY: So Nova Scotia Power knew the valve was closed, but the limit switch still showed it as open?

MS. DROVER: That is correct. I would note that there is not an alarm on that system. So in the January outage when the unit would be brought offline because of the suspected tube leak in the boiler, you're absolutely correct that valve, that suction valve would be closed, and the indication did not indicate closed, it continued to indicate open.

MEMBER MURPHY: No, I understand that, but somebody at Nova Scotia Power closed that valve.

MS. DROVER: That is correct.

MEMBER MURPHY: So somebody knew it was closed, even ---

MS. DROVER: That is correct.

MEMBER MURPHY: --- though the switch was showing open, and that didn't raise any alarm bells? Not physical alarms, but ---

MS. DROVER: Yeah.

Thank you, Mr. MacIntosh. So you are absolutely right. So an outside operator would go down and physically close that valve. It was not part of the permit. It was part of an operation of that -- of the plant. And that operator, as well as the lead hand, absolutely knew that valve was closed. That outside operator does not sit at a control room panel seeing that on the screen the valve is closing while they are closing the valve. And there is not a screen that the control room operator would sit at and watch every valve as it opens and closes in the plant. And there would not be an alarm indicating a valve is closing.

So there are many screens that panel operators look at that have many measurements of the various items happening in the plant. So I just -- trying to communicate that unless that control room operator was specifically watching that screen at that particular time, they would not necessarily see that event. And that that is not a normal or regular task that a panel operator would sit on the screen watching every operation that an outside operator would do.

MEMBER MURPHY: Okay. But he knows, or he or she knows the boiler feedwater pump start-up procedure or shutdown procedure and whatnot, that that valve would need to be closed ---

MS. DROVER: They would ---

MEMBER MURPHY: --- once the pump is shut down, ---

MS. DROVER: Yes.

MEMBER MURPHY: --- right?

MS. DROVER: So Operations would absolutely know that that would be normal operating procedure on Unit 5 that -- or normal operation on Unit 5 to shut that valve for both boiler feed pumps, and that that is done when Unit 5 comes offline.

[Transcript, March 19, 2025, pp. 669-673]

[148] In addition, the RCA for the pump failure event notes that according to NS Power equipment monitoring (PI) data, the suction valve on the 5-2 feed pump had been showing open since October 25, 2022, while the 5-1 boiler feed pump suction valve appeared to be operating correctly opening and closing with the pump operation. In Undertaking U-30, NS Power was asked to confirm whether the 5-2 feedwater pump was running continuously from October 25, 2022, to January 12, 2023, when Trenton Unit 5 was taken offline. In response, NS Power indicated that Trenton 5 went offline on March 31, 2022, and returned to service November 11, 2022. After November 11, 2022, the unit and boiler feedwater pumps were off on three separate occasions before January 12, 2023. NS Power also noted that the suction valves on the feed pumps may not have been closed for all these outages as they were generally of a short duration.

[149] In reviewing this information, the Board notes that there was a lengthy shutdown from March 31, 2022, to November 11, 2022. With such a duration, the Board would expect that the suction valves on both Unit 5 feedwater pumps would be closed, per NS Power standard practice. So, between October 25, 2022, and November 11, 2022, the limit switch for the 5-2 feed pump should have been showing the suction valve as

closed. But the evidence indicates that the limit switch showed the valve as open. Further, the PI data shows the 5-1 boiler feed pump suction valve operating correctly between October 25, 2022, and January 12, 2023, opening and closing with the pump operation. This suggests to the Board that the suction valve on the 5-1 feedwater pump was closed during the three separate occasions when the feedwater pumps were off between October 25, 2022, and January 12, 2023. As such, it does not seem plausible to the Board that the suction valve for the 5-2 feed pump would not have also been closed during these periods, yet the PI data showed the valve as being open.

[150] NS Power noted that the panel operator for Unit 5 has many screens to observe and hundreds of pieces of information in PI available to review. As such, NS Power argued that without an active alarm to draw the operator's attention to a faulty limit switch, it is not something that would stand out. The Board is mindful of this argument but also notes that it appears there were at least four occasions prior to the feedwater pump failure when the issue with the faulty limit switch could have been detected.

[151] In summary, the Board finds that the circumstances leading to the feedwater pump failure resulted from two main causes. One cause relates to the faulty limit switch on the pump suction valve. The Board notes that this issue might have been detected by NS Power much earlier before the feedwater pump failure. More importantly, the Board finds that the primary cause for the 5-2 feedwater pump failure was a result of NS Power staff not following the company's documented standards and procedures, particularly significant operational requirements.

[152] The burden is on NS Power to demonstrate that its failure to detect the faulty limit switch before the incident was prudent. Its evidence rests on speculation around

whether the suction valve would have been closed in the periods of time between October 25, 2022, and January 12, 2023, and whether it would be reasonable to expect the Panel Operator to have noticed an indicator on one of many screens or information they have to operate or review. This is not particularly strong evidence, but even if the Board were to accept that NS Power's failure to note the malfunctioning limit switch was not imprudent, the Board is not persuaded, on the balance of probabilities, that the actions of NS Power's staff on the day of the incident were prudent.

[153] The Board finds that the primary reason for the 5-2 feedwater pump failure was because NS Power staff were not effectively communicating and did not follow the company's documented standards and procedures, particularly significant operational requirements. In the face of this, NS Power's evidence did not demonstrate prudence.

[154] NS Power provided evidence and testimony in this proceeding related to the robustness of its standard practices and procedures, and its extensive process of hiring excellent tradespeople, putting them through appropriate training, certification and licensing, producing highly trained and competent individuals. All of this is critically important. However, NS Power needs to demonstrate that its practices and procedures were actually implemented and functioning as they should at the time of the event. That evidence is lacking here.

[155] Further, the Board rejects the suggestion that the incident was the result of a momentary lapse by one highly trained individual despite the utility's robust practices and procedures. In the Board's view, the circumstances preceding this incident involved multiple instances of insufficient controls leading the Board to conclude that the issues are somewhat more systemic in nature. It is clear the issues stemmed from more than

one individual. In particular, the Board finds it hard to understand how the incident could have occurred if there was effective communication between SPO 5 and SPO 6. NS Power provided no evidence about this critical handover of responsibility. Further, NS Power's evidence that SPO 6 was likely present at the tailboard discussion between the lead hand and SPO 5, when it was emphasized that the suction valve on the 5-2 boiler feed pump needed to be opened before the pump was started, is speculative.

[156] In the circumstances surrounding the 5-2 feedwater pump failure, the Board finds that NS Power has not satisfactorily demonstrated that its actions were prudent. As such, the Board finds that a cost disallowance of \$1,141,261.58 related to the 5-2 feedwater pump failure, plus interest, is warranted.

3.8 Port Hawkesbury Biomass – Procurement

[157] In the audit report, Bates White took issue with NS Power's acceptance of a non-conforming bid in a biomass RFP. It also disapproved of NS Power not stating its preference for fuel log chips in its biomass supply solicitation. It therefore recommended that NS Power require its biomass supply respondents to provide all key commercial terms of their offers in their written bid submissions (Recommendation VI-1). It further recommended that NS Power specify its preference for fuel log chips in future biomass supply procurements (Recommendation VI-2).

[158] Bates White stated that while it was "not concerned that this approach led to an unreasonable evaluation result", acceptance of a non-conforming bid demonstrated undue preference.

[159] In closing submissions, the Industrial Group noted that this appears to be a recurring issue, since there were concerns raised regarding biomass procurement in the

previous audit. The Industrial Group stated that this demonstrates a lack of good utility practices, and that any increased costs should be disallowed.

[160] NS Power accepted both of Bates White's recommendations; however, in its reply submissions, it stated that its decision to apply actual moisture content values rather than vendor-submitted values is not indicative of supplier bias. It stated that this practice is done to improve accuracy and ensure the best analysis is done.

3.8.1 Findings

[161] The Board accepts NS Power's explanation of its method to evaluate biomass supply bids. While there is clearly still some room for improvement in NS Power's biomass procurement practices, the Board finds the evidence does not support a finding that this resulted in unnecessary costs for customers. A disallowance is not warranted in this instance.

3.9 Port Hawkesbury Biomass – Uneconomic Dispatch Q4 2023

[162] Conclusion XI-6 in the audit report suggested that NS Power may have used its Port Hawkesbury Biomass generation facility uneconomically in the last quarter of 2023:

Conclusion XI-6: The marginal cost of PH Biomass exceeded the system lambda during the period in late 2023 when it was operated almost entirely on natural gas because the system lambda does not include the SO₂ [sulfur dioxide] adder. The difference between PHB marginal costs and system lambda during this period represents PHB out-of-merit costs associated with managing NSPI's SO₂ position.

[Exhibit N-1, p. 308]

[163] Bates White estimated the costs associated with out of merit dispatch to be \$477,415 using day-ahead Port Hawkesbury Biomass marginal costs. However, NS Power advised Bates White that the marginal costs the company provided did not

consider the effect of a sulfur dioxide adder, which it said would make the Port Hawkesbury Biomass facility economic for much of late 2023.

[164] Bates White said it is not good utility practice to run any unit out of economic merit unless needed due to system constraints or reliability needs. Although it did not accept NS Power's statement that the generation facility would have been economic to run considering the effect of a sulfur dioxide adder, it did not recommend a disallowance because it did not have strong confidence that NS Power acted imprudently [Exhibit N-4, CA IR-22; Exhibit N-5, IG IR-22]. Mr. Wilson, however, recommended a disallowance.

[165] In its Rebuttal Evidence, NS Power maintained its position that, due to annual sulfur dioxide emission limits, consuming natural gas at the Port Hawkesbury Biomass facility was the economic choice and it did not run the facility out of economic merit.

[166] At the hearing, Bates White and NS Power undertook to provide calculations accounting for the sulfur dioxide adders (Undertakings U-1 and U-17). In its response to Undertaking U-17, NS Power provided an analysis comparing the cost of the Port Hawkesbury Biomass facility to baseload, coal-fired generation between October 25, 2023, and December 31, 2023. This analysis showed that the biomass facility was the preferred choice in this comparison, except on 11 days (in December). NS Power provided further justification for the use of the biomass facility on these 11 days in its undertaking response. Generally, NS Power said it used the unit at these times for reliability purposes and to displace more expensive options for serving peak load.

[167] Bates White reviewed the response to Undertaking U-17 in its own response to Undertaking U-1. Bates White noted that NS Power's response did not

provide system marginal costs, the sulfur dioxide adder applicable each hour and day, the marginal unit cost on the system, and other data that would be important to allow Bates White to provide an appropriate review of the response. Bates White requested this information from NS Power. NS Power provided some information but was unable to provide the sulfur dioxide adders in place during the period covered by the analysis due to a cybersecurity breach. Bates White reviewed the available information and concluded:

We note that NSPI has provided a variety of explanations to explain why PHB was dispatched out-of-merit on those December days. These may be valid, reliability-based reasons for dispatching PHB on natural gas, but as this was the first time these specific justifications were raised, and given the limited scope of U-1, we cannot provide an opinion. In response to our undertaking request, we state that have reviewed NSPI's analysis and confirm that PHB was dispatched out of economic merit order, even considering emissions compliance adders.

[Exhibit N-45, Undertaking U-1, p. 3]

[168] Bates White recalculated the uneconomic dispatch cost to be \$100,098. In their closing submissions the Consumer Advocate and the Industrial Group argued the Board should disallow the recalculated uneconomic dispatch costs because there was not enough evidence to show that NS Power's decision to run the unit at these times was prudent.

[169] In its reply submissions, NS Power explained that the reasons it provided for running the unit the way it did on the questioned 11 days in December 2023 were sourced from contemporaneously prepared real-time marketing shift notes indicating reliability reasons underlying why it was necessary for the unit to be dispatched as it was. It noted:

The dispatch of a generation unit for reasons besides economic merit is not unique to PHB and may be for a number of reasons including, but not limited to, transmission constraints, derates of other units, and system security. Contrary to the IG's assertion, this is not a "newly purported reason," but rather an implied and fundamental reality applicable to

dispatch of any unit. A generation unit can be subject to economic dispatch while still being required to run in certain instances for factors beyond economics, like reliability.

[NS Power, Closing Submissions, p. 34]

3.9.1 Findings

[170] The Board finds that Bates White's conclusion in its audit report that the Port Hawkesbury Biomass facility was run out of merit is enough to rebut the presumption of prudence and require NS Power to demonstrate that the cost of running the unit out of merit was prudently incurred. Considering this, the Board is quite concerned that NS Power provided only minimal justification to support the way it ran this unit. It was only after the hearing, in an undertaking response, that NS Power provided more detail. Even then, the information in the undertaking response, while satisfactorily addressing the majority of the days the unit was run during the period in question, was considered to be lacking by Bates White for those days that the unit still appeared to have been run out of merit order. Bates White noted NS Power's reliability-based reasons may be valid, but it was not able to provide an opinion because NS Power's undertaking response was the first time this information was made available, and due to the limited scope of the response Bates White was to provide for Undertaking U-1.

[171] The Board accepts NS Power's evidence that it used the Port Hawkesbury Biomass unit reasonably in December 2023. While the supporting evidence provided by NS Power was marginal, Bates White considered NS Power's position to be possibly valid. Additionally, the Board places weight on the fact that the information NS Power provided about the operation of the unit on the days in question in its undertaking response was from contemporaneous records, which the Board considers demonstrates a sufficient degree of diligence about the operation of the units on the days in question.

3.10 Port Hawkesbury Biomass – Delivery Costs during Planned Outage

[172] Conclusion VI-8 in the audit report criticized a decision NS Power made to receive biomass fuel when the Port Hawkesbury biomass generation facility was on a planned shutdown.

[173] Bates White viewed the arrangement as unreasonable, characterizing it as a subsidy to a biomass shipping contractor. Bates White considered the economic analysis in NS Power's Record of Approval for the transaction to be "nonsensical". It said the analysis compared the arrangement under the transaction to an alternative to stockpiling unneeded fuel, when the better arrangement would be to not receive the deliveries during the outage and avoid the cost altogether. NS Power filed its Record of Approval with the Board in response to Undertaking U-33 in this matter. As it happened, this arrangement was not used for other reasons, so NS Power incurred no costs.

[174] Mr. Wilson suggested the Board should express strong disagreement with NS Power's practice in this case. He said this would pre-empt similar actions in the future that could lead to unnecessary costs for customers.

[175] In its Rebuttal Evidence, NS Power rejected the assertion that it was subsidizing biomass contractors to the detriment of FAM customers. It said:

... The continuous supply of biomass fuel depends on a complex and intertwined network of suppliers and contractors in Nova Scotia, whose viability is essential for the uninterrupted operation of the biomass fuel supply chain. Given that biomass fuel is a waste by-product with inherent unreliability and unpredictability of supply, NS Power takes the necessary steps to ensure an adequate supply of fuel for PHB's continuous operation in the best interests of customers.

[Exhibit N-25, p. 14]

[176] NS Power went on to comment on challenges with the reliability of biomass fuel supply and emphasized the need to manage risks associated with the availability of this fuel source:

The careful monitoring of the biomass fuel supply chain operation may at times involve necessary contract modifications, the reasons for which, when taken out of context of the delicate complexity of biomass supply chain management, may appear “nonsensical”, as termed by Bates White. However, NS Power believes that its biomass fuel supply risk management practices are not only appropriate, but also necessary. A short-sighted attempt to avoid the relatively low cost of temporary support for a chipping contractor, aimed at assuring service continuity, can potentially result in significantly increased costs to customers should the supply of biomass be interrupted due to the redeployment of limited chipping resources during a temporary PHB boiler outage. To manage the risks associated with biomass fuel supply security, NS Power must have access to all tools, including deliveries during PHB shutdowns, supporting chipping contractors to ensure commitment, alternate designated delivery points, and additional fuel rehandling payments, when necessary. NS Power respectfully requests that the Board disregard Mr. Wilson’s call to take action to pre-empt NS Power’s ability to manage risks associated with biomass fuel supply. It is unnecessary and ignores the commercial realities of the biomass market in Nova Scotia.

[Exhibit N-25, p. 15]

[177] Under cross-examination by the Consumer Advocate at the hearing, Dragan Pecurica offered a broader explanation:

A. (Pecurica)... Does this have to do with receiving biomass deliveries during an outage? Is that what you’re referring to, Mr. Murphy?

Q. Yes, that’s right.

A. (Pecurica) Yeah. Well, there was a bit of confusion about that item that I would like to have the opportunity to clarify, if you...?

Q. Sure, yeah.

A. (Pecurica) Receiving fuel deliveries during plant outages very common. It happens all the time. We receive coal, heavy fuel oil, pet coke, biomass during plant outages. These are fuels that are stored and burned at a later date, so this may have been misinterpreted that receiving fuel during outage was somehow an unusual event. It was not.

In this case, it was a change of a delivery point associated with that outage which was expected to result in some savings to customers. And I can go into more detail if you’d like, but just I want to clear up the confusion around fuel deliveries, that they happen all the time. Trucks, ships come in all the time for these fuels that we can store.

Q. Okay. I guess the criticism from Bates White was that this was done to subsidize biomass chipping subcontractors and that that was the purpose.

A. (Pecurica) I can see how it could be construed as such, Mr. Murphy, but that wasn’t the case and that’s not the whole story. So I may try to set the record clear on this.

It was a subcontractor who had an opportunity to procure some wood -- well, forest chips during the outage of the plant and during that -- wood chips are, of course, a lower priced product than fuel log chips, which we usually preserve for when we absolutely need them because they’re a dry product by the time we need them and to mix with other biomass products to balance the fuel quality, so if you can access forest chips as well.

At this point during a plant outage, the transport truck unloader, chip unloader, was also going to be out, so they wouldn't be able to, you know, tip the trucks and unload the chips in such a way that the conveyor belt will take them to the pile. They would have to track those chips by smaller, self-tipping trucks, which would then cause a couple things.

They cause the need for a fuel rehandling on the site once the trucks are dumped' that's an extra cost. But also, the chipper would be idle for periods of time while these trucks are going back and forth because you only have two trucks to do that.

So maybe that chipper idle part was misunderstood or misconstrued as a chipper subsidy.

So we were looking to actually change the delivery point so this chipper can actually get us this forest biomass, chip it, deliver it to a different delivery point and later we would reclaim this and there would be savings for customers there.

This is one of the examples of what we do and what we are incented to do and what I encourage my team to do to look for these opportunities where some creative thinking could lead to savings for customers, and not only savings, but also fuel supply security.

So eventually, it ended up not materializing. This contractor was unable to access those wood chips, so he wasn't really -- it didn't end up being a thing. But when the team proposed this action to change the delivery point and keep this going on during the outage, I thought it was a really creative idea, and I approved it to proceed just in case it was possible to materialize.

Eventually it didn't materialize, so there was no cost or savings.

What we said in our rebuttal evidence, since this was interpreted as a cross-subsidy to a counterparty or chipper, contractor, I wanted to take it a step further and say that we would like to have that option. We would like to have that option to be able to guarantee fuel supply continuity and security by incurring a relatively low cost even, if it's going to be interpreted as a subsidy for the time being, so that we can guarantee that that contractor will be able to supply fuel when we absolutely need it.

It was a hypothetical situation which didn't want to close the door on by being forbidden, that particular activity, it is going to lead to savings to the customers, right, just to keep in mind. ...

[Transcript, March 18, 2025, pp. 357-361]

[178] At the hearing, the Small Business Advocate asked Bates White if it was recommending that NS Power not undertake similar arrangements in the future. Bates White suggested there was a need for flexibility around the fuel supply for the facility:

Q. Okay. And the second part is, when you say it was not justified, that the decision to enter into a rehandling agreement was not justified, are you recommending that that type of rehandling agreement not be done by NSPI in the future?

A. (Musco) Well, no, I don't think we'd go so far as to try to pre-judge or preclude NSPI from considering tools in its arsenal, particularly at PHB where, you know, being a co-gen unit, multiple fuels, multiple different kinds of quality of fuels and all these associated contracts with PHP, we wouldn't want to preclude that. But I think what our focus here was

on that particular agreement, the justification for it, and our view that it simply was not justified under the reasons NSPI provided to us as part of our audit.

[Transcript, March 17, 2025, p. 78]

[179] Later, in response to questions from the Board, Vincent Musco, of Bates White, said:

A. (Musco) Okay, great. Yeah, so I began my answer by saying, yes, there are some unique aspects to the biomass fuel supply chain in market in province that aren't — that are not in existence for other fuels that NSPI relies upon to supply the rest of its fleet. So — and I gave an example of, you know, there's been events, incidents, in which demand for lumber products was negatively impacted due to commercial developments, decisions by other third parties. It had downstream effects on the supply chain, and ultimately on NSP's ability to procure fuel.

Our concern is that, you know, that that should not be a blanket right to provide any sort of support or subsidy for entities within that supply chain under the guise of, you know, merited or not, that, absent this subsidy, absent this additional payment, we may lose this supplier and that may have a much bigger longer-term negative impact on costs than, you know, this amount we are choosing to incur now to keep them more viable.

That's a -- you know, it should not be the responsibility of NSPI customers to sustain the supply chain for biomass fuel, that -- and so that balance has to be struck, and the merits have to be looked at. It can't always be that, oh well, you know, this is -- yes, this is an extra cost. It seems odd, but don't forget how fragile this ecosystem is. There still has to be that review to say was this really the right answer.

And in this case, it was our view that, no, that this was not the right way to go about it.

[Transcript, March 17, 2025, pp. 275-276]

[180] In closing submissions, the Consumer Advocate softened his position on this point, but emphasized the need for balance:

Given the further context provided by NS Power through the hearing process, the Consumer Advocate acknowledges that it may not be necessary in this case to express strong disagreement with NS Power's actions in this specific instance. Nonetheless, as Bates White explained during the hearing, there is a balance to be struck. The Consumer Advocate respectfully submits that the Board should emphasize that, in striking that balance, NS Power should put customer costs first and considerations for the contractor should be viewed in that context.

[Consumer Advocate, Closing Submissions, p. 13]

[181] In response, NS Power commented:

Fuel security is paramount to NS Power's ability to serve customers. NS Power will continue to mitigate any risks related to fuel security by accepting delivery of fuel to meet inventory requirements regardless of unit availability at the time of delivery. Inventory is accumulated in part to mitigate delivery risk of future supply.

[NS Power, Reply to Closing Submissions, p. 34]

3.10.1 Findings

[182] Based on the evidence presented in this hearing, challenges in managing the supply of biomass for the Port Hawkesbury Biomass facility may require flexibility in NS Power's arrangements in the market. As such, the Board accepts it would be inappropriate to direct or pre-empt specific conduct to manage that market. NS Power should mitigate risk and manage arrangements in the best interests of its customers. The best interests of customers might require NS Power to sometimes enter unusual supply arrangements.

[183] It is also clear that NS Power might have avoided much, if not all, the discussion in this proceeding over its "creative thinking" about its supply arrangements if its decision had been better documented. The Board agrees with Bates White that the contemporaneous information supporting NS Power's decision in this case, which NS Power provided in response to Undertaking U-33, did not adequately justify the arrangement it proposed to undertake.

[184] It should be clear to NS Power that unusual supply arrangements may raise questions about its prudence even if, once properly understood, they are clearly in the best interests of its customers. These questions may rebut the presumption of prudence. NS Power will then need to show that its decision was prudent. Poor documentation to justify its decision may lead to an unwelcome conclusion for NS Power in such a case. The Board notes that Mr. Pecurica said at the hearing that NS Power would document its decisions in more detail, and the Board would urge it to do so.

3.11 Port Hawkesbury Biomass – Shared Services Agreement

[185] A “Shared Services and Steam Supply Agreement”, dated September 28, 2012, between NS Power and Port Hawkesbury Paper (Shared Services Agreement) affects the operation of the Port Hawkesbury Biomass generation facility. Amongst other things, the Shared Services Agreement outlines the obligations of the parties under the agreement.

[186] NS Power developed an “energy balance” process to figure out the quantity and quality of fuel consumed in the boiler to produce steam diverted to Port Hawkesbury Paper’s paper mill. In its last audit report, Bates White recommended that NS Power codify the energy balance process and its assumptions in a contractual document executed by both parties. In the audit report in this matter, Bates White noted that this did not occur, although NS Power and Port Hawkesbury Paper did enter into a memorandum of understanding setting out “non-binding understandings” about their ongoing negotiation of amendments to the Shared Services Agreement, including the codification of the energy balance process.

[187] Bates White also noted that NS Power changed the energy balance process in late October 2023 to accommodate higher natural gas consumption. Bates White said this revision was not codified in any document and not addressed in the recent memorandum of understanding between NS Power and Port Hawkesbury Paper.

[188] The current audit report included a similar recommendation about codifying the energy balance process:

Recommendation VI-3: NSPI should complete its negotiations of amendments to the Shared Services Agreement with PHP, especially codifying the energy balance process.

[Exhibit N-1, p. 159]

[189] NS Power, in its reply to the audit report [Exhibit N-3], accepted this recommendation and said it “continues negotiations to complete a contractual amendment with the supplier which codifies the energy balance process under the Shared Services and Steam Agreement”.

[190] Bates White considered this a positive response but suggested that NS Power should explain why it was taking so long to address this issue:

While it is positive that NSPI is pursuing this contractual amendment, it should be noted that the time it has taken (so far) to codify the energy balance process has been significant. We first made this recommendation in our November 1, 2022 FAM Audit Report which NSPI accepted on January 19, 2023. More than two years have now elapsed. NSPI should explain why this negotiation persists, particularly since the energy balance process continues to be used each month in settling cost responsibility between PHP and NSPI for fuel consumption at the Port Hawkesbury Biomass plant. [footnotes omitted]

[Exhibit N-24, p. 8]

[191] NS Power said the length of time to respond to this recommendation was due to the “complexity of the energy balance process, which the parties have been examining in detail in order to correctly codify, and which has required review of related terms in the contract such as those relating to sludge consumption, to ensure clarity and consistency with the coded energy balance terms.” [Exhibit N-12, NSUARB IR-1]

[192] NS Power confirmed at the hearing that it concluded an agreement that codified the process two or three weeks earlier. Mr. Pecurica also advised at the hearing that the same method applies whether the generator is using biomass or natural gas. NS Power filed the amendment agreement, dated March 7, 2025, in response to Undertaking U-23.

[193] In closing submissions, the Industrial Group expressed concern about the approximate two and a half years it took for NS Power to codify the energy balance process after Bates White made its recommendation in the last FAM Audit. The Industrial

Group suggested this showed a lack of diligence or urgency in complying with the recommendation. It asked the Board to confirm that the next audit would consider the new agreement.

[194] In its reply submissions, NS Power said:

The suggestion that NS Power “has demonstrated a lack of diligence or urgency” undermines the complexity and rigour required to implement major system reforms and to revisit and modify commercial arrangements involving multiple parties. The suggestion that efforts such as executing the Shared Services Agreement to codify the energy balance process was delayed due to inaction is untrue. As was explained in oral testimony, this was a deeply technical, multi-stakeholder undertaking involving legal consultation, operational, and regulatory interfaces that simply cannot be completed within an arbitrary timeline. In addition, the process was enhanced to provide better clarity for stakeholders by introducing a stepwise calculation. This required the engagement of an external consultant to update the tool utilized to produce this result.

[NS Power, Reply to Closing Submissions, p. 22]

[195] NS Power continued with a reference to a lengthy and detailed response from Mr. Pecurica to a question about the delay in completing the agreement that was posed to NS Power at the hearing.

[196] NS Power also confirmed that as the amendment agreement was executed in the period that will be covered by the next FAM Audit, it will be in scope in that audit and there was, therefore, no need for the Board to provide any specific direction.

3.11.1 Findings

[197] NS Power appears to have completed Bates White’s recommendation to codify the energy balance without any issues or costs to ratepayers in the meantime. The Board accepts that there is considerable complexity associated with the energy balance process and, more generally, with the arrangements between NS Power and Port Hawkesbury Paper to run the Port Hawkesbury Biomass generation facility. But NS Power’s explanation for why it took nearly two and a half years to address this issue leaves much to be desired. Furthermore, if the issues involved with codifying the energy

balance process were so complex that they required years to address, the Board would be concerned about the risk that ratepayers faced while the biomass facility was operated without the critical energy balance process being clearly addressed in its contract with Port Hawkesbury Paper.

[198] As NS Power noted, the amendment agreement is subject to further review in the next FAM Audit.

3.12 South Canoe Derate

[199] In its Audit Report, Bates White noted that the 102 MW South Canoe wind farm, jointly owned by NS Power, suffered a 54% reduction in energy production in the audit period, compared to the prior audit period. NS Power advised Bates White that production decreased because of unit derations due to “defects” associated with the ladder/lift systems on the turbines supplied by Nordex USA, Inc. Nordex was unable to regularly maintain the turbines in accordance with contractual obligations, because of safety issues with the lift/ladder systems.

[200] NS Power received a liquidated damages payment from Nordex related to the turbine availability warranty, but only covering the period ending May 31, 2022, which was credited to FAM customers. Unable to obtain further damages beyond that date, NS Power and its wind farm joint owner advanced a damages claim related to turbine availability pursuant to the Project Warranty Agreement. The period for the damages claim extends from June 1, 2022, to May 31, 2023. The claim remains outstanding.

[201] Bates White stated that the damages associated with this matter could be substantial and NS Power should continue to pursue damages to the maximum extent under its agreement with Nordex and update the Board on the outcome of those efforts,

including on the capability status of South Canoe (Recommendation X-7). NS Power accepted this recommendation in its Reply Evidence.

[202] Mr. Wilson recommended:

The Board should direct NS Power to provide a full analysis of each category of damages that adversely affected FAM customer costs, a comparison of that analysis to the damages it was able to recover from Nordex, and identification of the contractual issues that prevented NS Power from obtaining recovery of full damages, if any. The Board should direct periodic reporting on this dispute by NS Power.

Once it has sufficiently complete information, the Board should determine whether NS Power pursued remedies in a diligent and prudent manner, and whether the contract language it signed was adequate in protecting the financial interests of NS Power's customers. The Board should consider whether any unrecovered damages should be credited to NS Power customers due to imprudence in pursuit of remedies or the original contract terms.

[Exhibit N-20, pp. 14-15]

[203] In its Rebuttal Evidence, NS Power did not agree with Mr. Wilson's recommendations, stating that the specific detail he requested is subject to litigation privilege and ongoing solicitor-client privilege that will not end once the dispute is resolved. NS Power also opposed the requests for periodic reporting on this dispute and for the Board to assess prudence in both contract negotiation and litigation strategy. It concluded:

Mr. Wilson's recommendation suggests that the Board should retroactively assess the adequacy of NS Power's contractual terms and determine whether unrecovered damages should be credited to customers. However, contract negotiation is inherently complex and involves the weighing of risks, costs, and potential liabilities at the time of execution. Such an after-the-fact review, especially when tied to the unpredictable outcome of litigation, risks creating an unfair and unreasonable standard that would second-guess commercial decisions made in good faith.

If NS Power were required to disclose its legal assessments, including limitations on recovery and contract terms, it could set a harmful precedent for future commercial and legal negotiations. Counterparties may be less willing to engage in settlement discussions, knowing that the company is subject to post hoc regulatory scrutiny that could incentivize prolonged litigation over reasonable settlements. This could ultimately increase costs rather than reduce them.

[Exhibit N-25, p. 17]

[204] In his closing submissions, the Consumer Advocate described NS Power's concerns as "overblown". He submitted that none of these recommendations are inconsistent with the Board's usual practice, stating that the "purpose of providing such information would be to allow the Board to determine whether NS Power pursued remedies diligently and prudently, as well as to determine whether any terms in the original contract may have prevented NS Power from recovering".

3.12.1 Findings

[205] NS Power accepted Bates White's recommendation that NS Power continue to pursue damages to the maximum extent under its agreement with Nordex and update the Board on the outcome of those efforts, including on the capability status of South Canoe. It opposed the detailed information requested by Mr. Wilson.

[206] On cross-examination, NS Power acknowledged that it expected the outcome of this litigation would be subject to review by the Board (Transcript, p. 366). On further questioning by the Board, NS Power also confirmed that it was not seeking a change of practice in this regard (Transcript, p. 769).

[207] As the Board has done in many prior cases, it will review the outcome of NS Power's negotiated settlement or other disposition of this matter to determine whether it was concluded in the interests of FAM customers. One of the factors to consider in such a review is the contract that was the basis for the disposition of the matter. The review will occur in the FAM Audit period in which the matter is concluded.

[208] As noted later in this decision, NS Power must provide semi-annual FAM Audit Action Plan updates. It directs NS Power to provide the high-level status of this matter in its updates.

3.13 Net Benefits of Hedging

[209] In response to CA IR-15, NS Power provided the actual net benefits of its hedging program by month during the audit period. In his evidence, Mr. Wilson recommended that future FAM Audits include a review of these costs. NS Power has agreed to provide this information in the next FAM Audit.

3.13.1 Findings

[210] The Board directs NS Power to provide this information in the next FAM Audit to be reviewed by the FAM Auditor.

3.14 Regional Joint Dispatch

[211] In its *2020-2021 FAM Audit* decision [2024 NSUARB 34], the Board stated:

[179] The Board appreciates that regional joint dispatch by a single system operator would not be easy and is somewhat of a Pandora's Box. A successful arrangement would need to produce benefits for all jurisdictions involved. But the prospect of ignoring something that could be a benefit because pursuing it would be hard does not sit well. As much as this era of energy decarbonization and transformation creates uncertainties, it also creates opportunities. Targets for the shuttering of coal plants, development of renewables and the achievement of a net-zero greenhouse gas economy are looming closer every day. In waiting for the perfect time to act, one may find that time has already passed.

[180] Clearly the Board cannot mandate the cooperation of all the parties who would be necessary to successfully undertake a reasonable study of a more regional approach to dispatch. All it can do is ask NS Power to try. To that end, the Board directs NS Power to provide it with reports on its efforts to engage other participants to undertake the study recommended by Mr. Wilson. These reports are to be filed every six months, beginning August 31, 2024.

[M10416, 2024 NSUARB 34, paras. 179-180]

[212] NS Power provided its first report to the Board on August 30, 2024, wherein NS Power advised the Board of its intent to prioritize efforts on transitioning to the Nova Scotia Independent Energy System Operator (NSIESO) structure, rather than engaging neighbouring jurisdictions on future joint dispatch through a single system operator.

[213] In his evidence filed in the present matter, Mr. Wilson suggested that NS Power had disregarded the Board's directive in its *2020-2021 FAM Audit* decision to study regional joint dispatch.

[214] In its Rebuttal Evidence, Bates White agreed with Mr. Wilson about the potential benefits to FAM customers of regional joint dispatch, repeating similar comments from prior audit reports. It stated:

... We continue to support the study and consideration of a market-based power pool that commits and dispatches supply sources across the regional footprint in a manner that solves for the least-cost solution to provide energy and ancillary services, while respecting system security and reliability constraints. A study to estimate the benefits of a regional system operator may be helpful, though may require substantial simplifying assumptions that can impact accuracy. This is particularly true if the study is unable to use actual key data from each regional constituent (i.e., New Brunswick, Newfoundland and Labrador, and Hydro Quebec), much of which is non-public.

[Exhibit N-24, pp. 15-16]

[215] Bates White noted in its audit report that the volume and benefits of transactions under a Cooperative Dispatch Agreement have been declining since 2016 and have consistently been well below what was forecasted when the agreement was developed and implemented. It said this in the context of Mr. Wilson's recommendation that there be additional review of audit period transactions with New Brunswick following the end of the Cooperative Dispatch Agreement. Bates White agreed this may have merit in helping determine how NS Power and New Brunswick "will function going forward as power marketing counterparties in the age of large power import flows from Newfoundland to Nova Scotia over the Maritime Link".

[216] NS Power strongly opposed any suggestion by Mr. Wilson that it ignored the Board's directive to study regional joint dispatch. It noted that within a week of the release of the Board's *2020-2021 FAM Audit* decision in February 2024, the Province introduced Bill 404, the *Energy Reform (2024) Act*, which provided for the creation of the

NSIESO. When proclaimed, the legislation would transfer the system operator functions from NS Power to the NSIESO. Noting that one of the objects of the *Act* provides that the NSIESO “work with responsible authorities outside the Province to coordinate the IESO's activities with their activities” [s. 9(h)], NS Power added in its Rebuttal Evidence:

... This change significantly altered the future of energy dispatch in Nova Scotia and was a deliberate and intentional provincial policy decision to stand up a singular and independent system operator for the province. In NS Power's submission, due to significant change in dispatch responsibility, it would be inappropriate and counterproductive for NS Power to pursue regional joint dispatch by a single system operator when this function is clearly identified as a responsibility of the IESO.

[Exhibit N-25, pp. 7-8]

[217] NS Power submitted that it had been transparent in its approach to the Board's direction, asserting that because of Bill 404, NS Power does not have the mandate to engage in such discussions and has no ability to speak for or bind the NSIESO. NS Power suggested that efforts to pursue dispatch through a single regional system operator could pause until the NSIESO is operating successfully as an independent entity and then encourage that organization to engage with neighbouring utilities.

[218] NS Power added that constraints with the present transmission interconnection between New Brunswick and Nova Scotia have also limited discussions about regional dispatch. As noted in other proceedings, New Brunswick's transmission system has become congested due to load growth in the Moncton area, such that firm transmission capacity is only sparsely available, or not available at all. Without counterparty firm transmission capacity commitment, NS Power said it cannot decommit a part of its steam fleet and thus is unable to realize benefits of cooperative system dispatch. Further, for its part, NS Power said that “air emissions regulations have progressively become more restrictive over the years, specifically RES targets, SO₂

emissions limits, and the GHG compliance system, to the point that NS Power has only been able to minimal export energy [sic], as evidenced by negligible export levels in recent years” (Rebuttal Evidence, p. 8).

[219] In its Rebuttal Evidence, NS Power added that “the construction and commissioning of the new reliability intertie may present an opportunity to discuss joint regional dispatch and in NS Power’s view, is a prerequisite for enabling additional transmission system firm capacity which is necessary for the physical reality of regional system dispatch” (Rebuttal Evidence, pp. 9-10).

[220] In its reply submissions, NS Power concluded:

Through the course of the current audit, ... NS Power communicated its position that any conversations regarding exploration of regional joint dispatch must involve and should be led by the Province as the entity responsible for establishing the NSIESO. In Closing submissions, NS Power committed to re-establishing reporting at six-month intervals with the next report due on August 31, 2025. Additionally, NS Power will heed any Order or Directive of the Board on this issue and will seek clarity from the Board if expectations are unclear.

Further clarity on this topic and the intentions of the NSIESO could and should be obtained from representatives from the NSIESO itself. As an organization that is regulated by the Board, NS Power would expect that the Board involves the NSIESO in any future discussions on the topic.

[NS Power, Reply to Closing Submissions, p. 61]

3.14.1 Findings

[221] The issue of cooperation between the NS Power and NB Power grids for mutual benefit has been the topic of discussion in numerous prior FAM Audit reports. Bates White and Mr. Wilson continue to advance the benefits of such cooperation, and in its prior FAM Audit decision, the Board directed NS Power to provide it with reports on its efforts to engage other participants to undertake a study recommended by Mr. Wilson, with reports to be filed every six months, beginning August 31, 2024. While NS Power suggested that the legislative landscape changed within one week of the Board’s

February 2024 FAM Audit decision with the establishment of the NSIESO, it waited until six months later at the end of August 2024 to advise it was prioritizing its efforts on transitioning to the NSIESO structure, rather than on engaging neighbouring jurisdictions on future joint dispatch through a single system operator. In the circumstances, it may have been prudent for NS Power to seek direction from the Board and intervenors immediately about these developments and how to proceed accordingly.

[222] Thus, to the extent that discussions have not continued about pursuing regional joint dispatch, it represents a missed opportunity. Admittedly, there were important legislative developments immediately following the Board's decision on the 2020-2021 FAM Audit. However, it is difficult to understand how regional joint dispatch opportunities were not canvassed and studied during the development of the reliability intertie project, filed April 10, 2025, which is now before the Board in another matter (M12217). Ironically, NS Power touts the benefits of regional joint dispatch in its reliability intertie application.

[223] For all practical purposes, the issue is now moot as it relates to NS Power spearheading such discussions with NB Power and other regional partners. The Board will raise the issue with the NSIESO in the appropriate context. The Board expects NS Power to cooperate with the NSIESO in any such discussions.

3.15 Wind Curtailment Data

[224] Bates White's Recommendation X-6 is for NS Power to incorporate wind curtailment data into its FAM reporting. Bates White did not specify a recommended frequency of reporting in the audit report. Mr. Wilson recommended that the reporting be incorporated into the monthly FAM reports, because annual figures provide no

seasonality. Bates White supported Mr. Wilson's recommendation, as did the Consumer Advocate, Small Business Advocate, and Industrial Group. In its reply submissions, NS Power stated that in the most recent FAM Small Working Group meeting, it had agreed to provide the curtailment data requested in the same or similar format to the data it had provided in the 2024 Annual FAM Report. The Industrial Group noted that NS Power had failed to provide an update on the new tools for reporting on wind curtailment as had been requested in Undertaking U-14.

3.15.1 Findings

[225] The Board directs NS Power to provide wind curtailment data in its monthly FAM reports. The Board further directs NS Power to engage with interested parties in the FAM Small Working Group on the form and content of what is presented, as well as to provide the requested information on its new tools for reporting wind curtailment. An update on these items should be provided to the Board in NS Power's first FAM Audit Action Plan update.

3.16 Valuation Methodology of Maritime Link

[226] In its *2020-2021 FAM Audit* decision, the Board stated:

[79] Accordingly, the Board considers that issues about "similar value" and "capacity value" are appropriately considered in the FAM audit. Much of the review of "similar value" may be enlightened by the result of negotiations between NS Power and Nalcor which were still ongoing at the time of the hearing (about 20 months after the end of the audit period under review). The impact on fuel costs from the resolution of this issue will be considered in the next audit period, including for both 2020-2021 and for 2022-2023.

[2024 NSUARB 34, para. 79]

[227] In its 2022-2023 FAM Audit report, Bates White recommended:

Recommendation XII-3: NSPI should continue its efforts to accurately value the missing and makeup NS Block energy volumes. NSPI should maintain its existing reporting to the Board but should enhance that reporting to adjust its Hourly Replacement Method as needed, particularly as it relates to solid fuel costs (which can use forward replacement

costs that are not incurred). NSPI should not abandon the Hourly Replacement Method given its attributes. NSPI should include in its reporting the determination of Block A and Block B volumes and valuations so stakeholders and the Board understand the full picture of NS Block undelivered and makeup volumes and values. NSPI should continue reporting these valuations quarterly and should do so until NSPI has ceased receiving makeup energy.

[Exhibit N-1, pp. 368-369]

[228] In NS Power's Reply Evidence filed September 13, 2024, the utility indicated that it accepted this recommendation and that it would "complete the valuation of the missing and makeup NS Block energy volumes for review by Bates White over the Q4 2024 to Q1 2025 period, during which the remaining makeup energy (approximately 7.6 MWh) is expected to be received". NS Power said the valuations would incorporate the determination of Block A and Block B volumes, and that it would continue its quarterly reporting.

[229] On March 14, 2025, NS Power filed its valuation model with the Board, marked as Exhibit N-33. Bates White filed a summary memo on the same date, marked as Exhibit N-34. The model and summary memo identified that work was ongoing to finalize the methodology. Bates White said that NS Power had made changes to its approach since January 2025 for valuing both the undelivered and makeup volumes of energy. While acknowledging that the utility had made improvements to its approach on these admittedly complex issues, Bates White said NS Power's work in determining the final values of the undelivered and makeup volumes of NS Block energy was not yet complete. Bates White highlighted that "the Board and stakeholders should be aware that the choice of method for valuing the undelivered and makeup volumes is material and can lead to significantly different conclusions about the relative value of the makeup volumes relative to the undelivered volumes".

[230] Bates White stated that, to complete its work, it wished “to conduct final due diligence on NSPI’s data and model to ensure accurate data and calculations”. It also proposed to provide NS Power the opportunity to review and verify Bates White’s calculations (which only used data NS Power provided). It anticipated working with NS Power to finalize this work in March 2025, as also suggested by NS Power in its March 14, 2025, filing.

[231] Following the mid-March 2025 hearing, NS Power said in its closing submissions that it was working diligently with Bates White “to finalize respective positions on approach to quantifying the benefit of the missing and makeup energy”. It expected the valuation work to be completed in the “coming days” and said it would take the Board’s direction on how to present the outcome of that work to all parties to this proceeding (Closing Submission, p. 56).

[232] In its closing submissions, the Industrial Group asked that the Board direct that the methodology for the valuation of the Maritime Link delay costs be reviewed in the next FAM Audit proceeding.

[233] However, in its reply submissions, NS Power suggested that the methodology could be reviewed with the FAM Small Working Group (SWG) and that it should be completed before the next FAM Audit proceeding:

Since the Hearing, NS Power and Bates White met on nine separate occasions. Through that process, NS Power and Bates White succeeded in (a) agreeing on the method for valuing the make up energy, and (b) greatly reducing areas of disagreement on the valuation of the undelivered energy. On June 27, 2025, at the conclusion of the scheduled Q2 SWG meeting, NS Power provided a one-hour presentation on the Similar Value Analysis work to intervenors. Prior to the SWG meeting, on June 25, NS Power distributed a memo detailing the methodology and the outcome of the analysis. NS Power offered to answer any questions and provided a recording of the presentation and the slide deck to intervenors following the meeting.

In NS Power's respectful submission, all work required to successfully satisfy recommendation XII-3 has been completed.

[NS Power, Reply to Closing Submissions, p. 67]

3.16.1 Findings

[234] The Board has noted on many occasions that "all fuel related costs remain subject to review in the FAM Audit, including replacement energy costs, the value of Make-up Energy, and the administration of the [Energy and Capacity Agreement] and the [Energy Access Agreement] contracts". The Board expects NS Power to administer these contracts in the best interests of ratepayers, see for example; [2024 NSUARB 17, para. 26].

[235] The valuation methodology for both the undelivered and makeup volumes of energy from Nalcor is an important issue for ratepayers and represents significant costs. As noted by Bates White, this valuation exercise involved complex issues. Given the prolonged time it took to bring conclusion to this issue, the final methodology was not available for review at the FAM Audit hearing. Further, it has not been reviewed by the Board. At least one intervenor, who is also a member of the FAM Small Working Group, asked that the Board direct the valuation methodology for the Maritime Link replacement costs be reviewed in the next FAM Audit proceeding. The Board agrees and so directs.

3.17 Other Bates White Recommendations – FAM Audit Action Plan

[236] As noted above, in its Reply Evidence, NS Power accepted all of Bates White's 34 recommendations and provided a FAM Audit Action Plan to implement the recommendations.

[237] In its Rebuttal Evidence, Bates White said it was important that the FAM Audit Action Plan "be vetted by stakeholders, reviewed and addressed by the Board, and

monitored in detail on a going forward basis to ensure NSPI follows through on its commitments and that NSPI's activities meet the spirit of our recommendations". The auditor made the identical comment in the prior audit.

[238] Bates White considered NS Power's responses to be positive and satisfactory on 18 recommendations. However, Bates White provided comments on the other 16 responses. In many instances, Bates White noted that NS Power accepted the recommendation but provided no additional information or detail about how it would implement the recommendation. Bates White submitted that NS Power should explain how it will implement the recommendations. In other cases, Bates White stated a more fulsome approach to adopting the recommendation should be followed, including the recommendations related to the Extra Large Industrial Active Demand Control (ELIADC) and natural gas procurement, gas supply contracts, and pipeline markets.

[239] In his testimony at the hearing, Mr. Musco repeated his comments that NS Power should provide more detail in its Action Plan to say how it will implement the recommendations, with a timeline for its completion.

[240] The Board has similar concerns about NS Power's Action Plan. It observes that in the past, some recommendations or issues have carried over a few audit periods before they were satisfactorily addressed or completed. It is important that the auditor's recommendations be addressed diligently. The Board agrees that the overall audit process benefits from ongoing monitoring and reporting and has adopted this approach over the past few audit periods. NS Power is directed to file semi-annual FAM Audit Action Plan updates, beginning February 1, 2026, and continuing every six months thereafter until all matters are resolved. Further, NS Power is directed to provide the details

requested by Bates White on each of the recommendations about how it will implement the recommendations and provide a timeline for their completion. In the event NS Power considers that a different implementation strategy should be adopted from that suggested by Bates White, it is to explain the new approach and the reasons for the change of course, along with an anticipated timeline for completion.

4.0 CONCLUSION

[241] The Board considers the conduct of the FAM Audit to have been a success. It was constructively and positively conducted in the best interests of all FAM customers, with a high degree of cooperation from NS Power that instills confidence in the utility's activities under its FAM. The FAM Auditor made 34 recommendations and NS Power accepted all of them and provided an Action Plan to implement the recommendations.

[242] The Board disallows \$1,141,261.58, plus interest, related to damage caused to the Trenton Unit 5-2 boiler feed pump resulting in costs that the Board finds NS Power did not demonstrate were prudently incurred. The Board directs that NS Power's customers be credited for the disallowed costs and interest, through the FAM.

[243] To put this in context, the total disallowance is in the order of one tenth of a percent of the approximately \$1.7 billion in FAM costs incurred by NS Power over the 2022 and 2023 audit period.

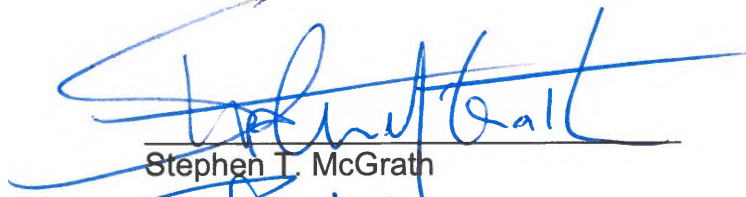
[244] The Board directs NS Power as follows:

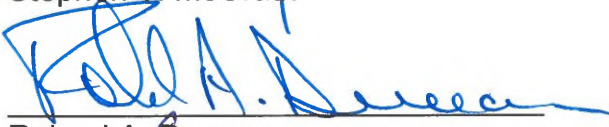
- To file FAM Audit Action Plan updates, beginning February 1, 2026, and continuing every six months until all matters are resolved.

- To provide for review by the FAM Auditor in the next FAM Audit the actual net benefits of its hedging program by month during the audit period.
- To provide wind curtailment data in its monthly FAM reports and engage with interested parties in the FAM Small Working Group on the form and content of what is presented, as well as to provide requested information on its new tools for reporting wind curtailment. An update is to be provided in NS Power's first FAM Audit Action Plan update.

[245] An Order will issue accordingly.

DATED at Halifax, Nova Scotia, this 16th day of October 2025.


Stephen T. McGrath


Roland A. Deveau


Steven M. Murphy