

**NOVA SCOTIA UTILITY AND REVIEW BOARD**



**IN THE MATTER OF THE PUBLIC UTILITIES ACT**

- and -

**IN THE MATTER OF** a public hearing into **NOVA SCOTIA POWER INCORPORATED'S** Fuel Adjustment Mechanism Audit for the period January 1, 2016, through December 31, 2017, by Bates White, LLC

**BEFORE:** Peter W. Gurnham, Q.C., Chair  
Roland A. Deveau, Q.C., Vice Chair  
Steven M. Murphy, MBA, P.Eng., Member

**PARTICIPANTS** **NOVA SCOTIA POWER INCORPORATED**  
Brian Curry, Counsel  
Blake Williams, Counsel

**CONSUMER ADVOCATE**  
William L. Mahody, Q.C.  
Emily Mason, Counsel

**SMALL BUSINESS ADVOCATE**  
Melissa MacAdam, Counsel

**INDUSTRIAL GROUP**  
Nancy G. Rubin, Q.C.  
Brienne Rudderham, Counsel

**NOVA SCOTIA DEPARTMENT OF ENERGY AND MINES**  
Peter Craig

**PORT HAWKESBURY PAPER LP**  
James MacDuff, Counsel

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

**HEARING DATE:** January 13, 2020

**FINAL SUBMISSIONS:** February 7, 2020

**DECISION DATE:** March 13, 2020

**DECISION:** Outstanding matters to be closed out through one of the Integrated Resource Plan, revisions to the Fuel Manual, or the next FAM Audit.

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## 1.0 SUMMARY

[1] This Decision is further to a public hearing conducted by the Nova Scotia Utility and Review Board with respect to an audit of Nova Scotia Power Incorporated's (NS Power) Fuel Adjustment Mechanism (FAM).

[2] Bates White, LLC, an economic consulting firm (Bates White), was engaged by the Board to do a comprehensive audit with respect to the FAM for the years 2016 and 2017. An audit of the FAM is done every second year. Bates White filed its Audit Report with the Board on July 24, 2018.

[3] NS Power filed its Reply Evidence on December 11, 2018. Further, it filed an Action Plan Update on November 7, 2019, outlining the status of the various recommendations in the Audit Report. NS Power's Action Plan Update provided a suggested course of action or response leading to closing out each matter.

[4] Bates White filed a Status Report on December 20, 2019, outlining its view of the status of its recommendations in the Audit Report. It indicated that eight of the 40 recommendations had not been satisfactorily addressed by NS Power. Bates White did not recommend any disallowance of costs.

[5] The outstanding issues were canvassed in the Board's hearing held on January 13, 2020. Bates White and NS Power now agree that the eight outstanding matters can generally be closed out in one of three ways: 1) through revisions to the Fuel Manual; 2) by referral to the Integrated Resource Plan (IRP) proceeding; or 3) Bates White reviewing the matter in the upcoming 2018-2019 FAM Audit. The Board endorsed these remaining eight recommendations and agreed that the matters can be closed out as agreed between Bates White and NS Power. The Board also commented on the

recommendations dealing with the Tufts Cove refurbishment and NS Power's internal audit process.

## 2.0 BACKGROUND

[6] Consistent with the Plan of Administration (POA) for NS Power's FAM, Bates White was engaged to do a comprehensive audit with respect to the FAM for the period covering the years 2016 and 2017 (FAM Audit). The POA provides that an audit of the FAM will be done every second year.

[7] The *Public Utilities Act*, R.S.N.S. 1989, c. 389 (*Act*), gives the Board broad regulatory oversight over public utilities and provides it with the authority to discharge its regulatory responsibilities.

[8] The FAM has generally been described as a mechanism that allows periodic adjustments to customer rates, outside general rate proceedings, to reflect increases and decreases in the Utility's cost of fuel, provided they are prudently incurred.

[9] In its NS Power *General Rate Application* Decision dated February 5, 2007, the Board identified at least four prerequisites prior to the implementation of a FAM:

[45] For the guidance of the parties, however, and without in any way prejudging the issue, in the Board's view there are several prerequisites that must be in place in order for the Board to consider the adoption of a FAM now or in the future:

1. an adequate and appropriate fuel procurement policy at NSPI in which the Board has confidence;
2. timely disclosure of complete and adequate information by NSPI so as to ensure confidence that the procurement policy is being appropriately administered;
3. disclosure and transparency with respect to the administration of the FAM;
4. a meaningful audit process under the administration of the Board.

[46] This list is not meant to be exhaustive. [Emphasis added]

[2007 NSUARB 8, paras. 45-46]

[10] In its NS Power *General Rate Application* Decision dated November 5, 2008, the Board approved the FAM to take effect on January 1, 2009, conditional on the final approval of the Tariff and POA. A revised FAM Tariff and POA were received on November 26, 2008, and approved by the Board in a letter dated December 11, 2008. The POA in effect for this audit period was approved by Order issued February 17, 2015, with amendments to Appendix B accepted on June 17, 2015.

[11] Section 5 of the POA addresses the audit requirements, and excerpts are included below:

#### **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 proceeding 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 NSPI 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 every second year. The Board shall have a qualified independent firm conduct the audit. The audit will address the financial and management/performance aspects of NSPI'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, 20XX to December 31, 20XX+1. The first audit period will be for the year 2009. Subsequent audits will cover two-year periods.

##### **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 NSPI, 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 NSPI Fuel Manual.

The Scope of the Audit will include a review of fuel and energy procurement, fuel management, and generation production ...

...

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

#### **Timing of the Audit**

The first audit will commence on February 1, 2010, and subsequent audits are expected to commence in February of every second year. The final report for the first audit will be filed with the Board and Stakeholders by July 2, 2010. Final reports for subsequent audits will be filed by July 2 of every second year. The final report will evolve from a draft report which is provided to NSPI 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.

[FAM POA, February 17, 2015, pp. 14-16]

[12] The first FAM Audit was conducted in 2010 and covered the 2009 calendar year. The second FAM Audit was conducted in 2012 and covered the calendar years of 2010 and 2011, while the next FAM Audit was conducted in 2014 for the years 2012 and 2013 [see M06290, 2015 NSUARB 9]. The most recent audit was conducted in 2016 for the years 2014 and 2015 [see M07611, 2016 NSUARB 216].

[13] For the current audit period, the Bates White FAM Audit Report was filed July 24, 2018. It presented Bates White's findings, conclusions, and recommendations for 2016 and 2017.

[14] Normally, the hearing respecting the FAM Audit would have been held later in 2018. However, any hearings about the FAM Audit were suspended by the Province's enactment of the *Electricity Plan Implementation (2015) Act (EPIA)*, which received Royal Assent on December 18, 2015. The primary thrust of the *EPIA* was to provide for stable electricity rates for customers during the 2017-2019 period (Rate Stability Period). The *EPIA* provided that any rate changes through the Rate Stability Period would be applied in equal annual increments over the calendar years 2017, 2018 and 2019. Further, the

*EPIA* also provided that no hearing respecting the FAM Audit could be held during the Rate Stability Period:

13 For greater certainty, nothing in Sections 3 to 12 restricts or suspends any reporting or auditing requirements of the Fuel Adjustment Mechanism, except that no hearing relating to an audit may occur during the Rate Stability Period other than for the purpose of setting the base cost of fuel for the calendar year 2020.

[15] NS Power filed its Reply Evidence on December 11, 2018. Further, it filed an Action Plan Update on November 7, 2019, outlining the status of the various recommendations in the Audit Report. NS Power's Action Plan Update provided a suggested course of action or response leading to closing out each matter.

[16] Bates White filed a Status Report on December 20, 2019, outlining its view of the status of its recommendations in the Audit Report. It indicated that eight of the 40 recommendations had not been satisfactorily addressed by NS Power.

[17] The outstanding issues were canvassed in the Board's hearing held on January 13, 2020. The Bates White witness panel was comprised of Vincent Musco, MA, and Chris Gulick, MBA, Collin Cain, MSc, and Nicolàs Puga, MSc. The NS Power witness panel included: Dave Landrigan, Vice-President Commercial; Paul Casey, Vice-President, Transmission, Distribution and Delivery; Nicole Godbout, Director of Regulatory Affairs; Marie MacLean, Director, Fuels; Brendan Chard, Director of Portfolio Optimization; and William Marshall, P.Eng., WKM Energy Consultants Inc.

[18] Written Submissions by the parties were completed February 7, 2020.

[19] Before embarking on a substantive review of the outstanding recommendations from the Audit Report, the Board considers it important to outline the success of the present FAM Audit process. In its Audit Report, Bates White stated that it "found NSPI cooperative and responsive throughout the audit process". The Company

accommodated many requests for interviews of its officials by the auditor and provided voluminous documentation. At the hearing, Mr. Musco described the professional and civil relationship between Bates White and NS Power including the effective exchange of information related to the Audit. 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.

[20] Bates White made 40 FAM Audit recommendations. In advance of the hearing, it considered 32 of the 40 to be satisfactorily addressed by NS Power. It went on to clarify what it meant by “satisfactory” to be that NS Power has (a) accepted the recommendation, (b) taken steps to implement and/or substantively respond to the recommendation, and (c) no material differences of opinion between Bates White and NS Power have arisen during the process. It considered eight recommendations not yet satisfactorily addressed by NS Power.

[21] A listing of the 32 FAM Audit recommendations which Bates White considered satisfactorily addressed in advance of the hearing is attached as Schedule A to this Decision.

### **3.0 RECOMMENDATIONS NOT SATISFACTORILY ADDRESSED**

#### **3.1 Introduction**

[22] As noted above, Bates White has indicated that eight of the 40 recommendations had not been satisfactorily addressed by NS Power. However, most or all of these recommendations were canvassed in NS Power’s FAM Audit Action Plan Update with a suggested course of action leading to closing out each matter.

[23] Bates White and NS Power now agree that the eight outstanding matters can generally be closed out in one of three ways: 1) through revisions to the Fuel Manual; 2) by referral to the Integrated Resource Plan (IRP) proceeding; or 3) Bates White reviewing the matter in the upcoming 2018-2019 FAM Audit.

[24] The Board will canvass each of these categories of issues in the remainder of this Decision, along with a few other issues identified during the hearing process.

### **3.2 Fuel Manual**

[25] It is agreed the following FAM Audit recommendations should be addressed by way of revisions to the Fuel Manual:

- **Recommendation X-1 (Tufts Cove Natural Gas Cost Data, from Economic Commitment and Dispatch Chapter)**

[26] Bates White Recommendation X-1 was as follows:

X-1: NSPI should seek to improve the auditability of Tufts Cove's incremental natural gas cost data. NSPI should revise Appendix R of the Fuel Manual to include its process for capturing natural gas prices in the day-ahead and real-time GenOps [Generation Operations software] model runs and should retain data on natural gas prices used in commitment and dispatch decisions.

[Exhibit N-1, p. 196]

[27] In its Reply Evidence, NS Power accepted this recommendation and committed to proposing amendments to the Fuel Manual to finalize the matter by the end of Q1 2019.

[28] On April 23, 2019, NS Power presented its proposed amendments to the FAM Small Working Group. Bates White indicated to NS Power that the proposed revisions to Appendix R of the Fuel Manual did not address multiple FAM Audit recommendations, including Recommendation X-1. Bates White suggested various

changes and offered to collaborate with NS Power on revisions that would address its recommendations.

[29] In its Action Plan Update filed November 7, 2019, NS Power indicated that this “item remains open pending finalization of the revision to the Fuel Manual”. Bates White noted in its Status Report of December 20, 2019, that it had not seen further edits to the Fuel Manual, and it considered the item to be not yet satisfactorily addressed.

[30] At the hearing, NS Power remained committed to bring further revisions to the FAM Small Working Group at its next meeting.

[31] In response to questioning from the Board Chair, Mr. Musco testified with respect to any action required by the Board on the items pertaining to the Fuel Manual revisions, starting with Recommendation X-1:

**Q.** Is there any direction or order that you would feel would be useful in this decision that would advance resolving that recommendation 10-1?

**A.** (V.M.) Well, I think it would be -- it would always be helpful to the extent the Board agrees with the recommendation. Just the Board's endorsement is worth a lot, obviously. I'm not sure, beyond that, what would really be necessary, but I think Board endorsement would be very helpful.

[Transcript, p. 63]

[32] In the Industrial Group's written submission, Ms. Rubin highlighted the importance of finalizing the Fuel Manual revisions due to the potential cost consequences to FAM ratepayers:

The Industrial Group submits that these recommended amendments ought not to be permitted to languish, as they have potential cost consequences to FAM ratepayers (as confirmed by Bates White). As such, the Industrial Group requests that the Board direct NSPI to work with Bates White to finalize the recommended revisions, to present these amendments for discussion at the next FAM Small Working Group and to bring the amendments to the Board for approval following.

[Exhibit N-23, IG Submission, January 31, 2020, p. 2]

[33] The Board notes that the last revision to the Fuel Manual was Revision #10 filed October 5, 2017. The Board does not approve changes to the Fuel Manual, but accepts the filings of revisions after they are finalized by NS Power, after consultation with the FAM Small Working Group.

[34] The Board endorses Bates White's Recommendation X-1. As noted by the Industrial Group, the items requiring Fuel Manual revisions have potential cost consequences for FAM ratepayers, including the revisions respecting Recommendation X-1. Further, these revisions will lead to a more efficient FAM auditing process. These revisions should be completed as soon as possible.

- **Recommendation X-5 (Fuel Manual Appendix R, from Economic Commitment and Dispatch Chapter)**

[35] Bates White Recommendation X-5 deals with revisions to Appendix R (Economic Scheduling & Marketing Requirements):

X-5: NSPI should revise Appendix R of the Fuel Manual to direct NSPI's marketers to seek the economically lowest cost solution in commitment and dispatch, subject to system security constraints.

[Exhibit N-1, p. 197]

[36] In its Reply Evidence, NS Power also accepted this recommendation and stated it would propose amendments to the Fuel Manual with respect to this issue.

[37] As outlined in the preceding section of this Decision, NS Power initially presented proposed revisions to the FAM Small Working Group on April 23, 2019, with respect to Appendix R of the Fuel Manual. Bates White suggested further changes to NS Power. Since then, as explained above with respect to Recommendation X-1, NS Power has not presented any further revisions to the FAM Small Working Group, or to Bates White. This item also remains outstanding.

[38] At the hearing, Bates White again signaled the importance of the Board endorsing this recommendation [see Transcript, p. 63].

[39] The Board endorses Recommendation X-5. The Board observes that this recommendation involves confirming that NS Power's marketers will seek the economically lowest cost solution in commitment and dispatch, subject to system security constraints. This is clearly an integral part of NS Power's fuel purchasing activities under the FAM.

- **Recommendation XIV-3 (Manual Adjustments to Dispatch Procedures, from Board-Specific Issues Chapter)**

[40] Bates White Recommendation XIV-3 relates to developing a protocol for applying manual adjustments in its dispatch procedures:

XIV-3: As recommended separately in the Economic Commitment and Dispatch Chapter, we recommend that NSPI establish and document a clear protocol for applying manual adjustments in its dispatch procedures and establish reporting methods to provide greater transparency around this process. These procedures should be applied to both the advance differential cost forecasts provided to PHP and to the after-the-fact differential cost determination used to bill PHP.

[Exhibit N-1, p. 288]

[41] In its Reply Evidence, NS Power indicated that the above recommendation was associated with the matters discussed under Recommendation X-2, which stated:

X-2: NSPI should work to reduce commitment and dispatch decisions made outside of GenOps, such as those related to the PH Biomass unit and Tufts Cove. All commitment and dispatch decisions made outside of GenOps should be well documented.

[Exhibit N-1, p. 196]

[42] In this section of the Decision, the Board will deal with the recommendation to establish and document a clear protocol for manual adjustments and reporting. Recommendation X-2 is specifically addressed later in this Decision, as it relates to actually reducing the number of such fuel transactions.

[43] NS Power accepted Bates White's recommendations that it should develop and document a clear protocol for applying manual adjustments in its dispatch process (XIV-3), as well as documenting all commitment and dispatch decisions made outside of GenOps (X-2).

[44] The respective positions of NS Power and Bates White were summarized in NS Power's Action Plan Update:

In its Reply Evidence at page 19, NS Power responded as follows:

NS Power accepts this recommendation and is developing a 'Day-ahead Schedule Manual Intervention Procedure'. NS Power anticipates full integration of this procedure in Q2 2019 once the Company has obtained the latest version of Generation Operations software upgrade. Due to timing limitations on the day ahead planning window and the current length of model execution time, NS Power requires the latest version of dispatch software before implementing these new procedures.

In its Rebuttal Evidence at pages 10-11, Bates White stated as follows:

NSPI indicates that it is developing a "Day-Ahead Schedule Manual Intervention Procedure" and expects this feature to be fully integrated in Q2 2019. It is not clear to us how this procedure addresses our recommendation. The thrust of our recommendation is for NSPI to reduce commitment and dispatch decisions that deviate from the economically optimal. It is not clear how codifying a procedure for day-ahead manual intervention addresses this. Moreover, it is not clear if NSPI will document all commitment and dispatch decisions that deviate from the GenOps schedule. We do recognize that, in response to our Recommendation XIV-3, NSPI references its Day-Ahead Schedule Manual Intervention Procedure and states that it "will establish a clear protocol for manual adjustments made within Generation Operations software for advance differential cost forecasts as well as after-the-fact differential cost determination for PHP." In any event, we would welcome the opportunity to review NSPI's day-ahead procedure – and any other efforts NSPI is making in response to Recommendations X-2 and XIV-3 – so we can provide feedback on their relevance to our recommendations.

NS Power Update

NS Power agrees it will document commitment and dispatch decisions that deviate materially from the Gen Ops schedule and will review those on a periodic basis to determine if there are patterns that could potentially be accommodated in the Gen Ops modelling. NS Power follows economic dispatch as provided by Gen Ops, while taking into account risks that cannot be translated into a model limit and thereby necessitating deviation from the Gen Ops model. For example, during storm events the system may be run more conservatively by ECC, giving more flexibility to meet reliability needs. The Day-Ahead Schedule Manual Intervention Procedure that NS Power agreed to develop is intended to track and detail these types of deviations.

NS Power anticipates completing this action item by the end of 2019.

[Exhibit N-14, pp. 24-25]

[45] In its Status Report dated December 20, 2019, Bates White stated:

... It appears NSPI is referring to the procedure it has developed in response to our Recommendation X-2; it may also be the case that NSPI intends that procedure to also apply to the PHP items we identify here in Recommendation XIV-3. As we have not yet seen the procedure NSPI discusses, nor are we certain that the procedure will capture these PHP issues we identify, we consider this item to be not yet satisfactorily addressed

[Exhibit N-15, pp. 12-13]

[46] At the hearing, NS Power confirmed that the protocol and documenting issues raised in Recommendations X-2 and XIV-3 would be “memorialized” through amendments to the Fuel Manual:

Q. (Board Counsel) All right. Thank you. Next, with respect to Recommendation XIV.3, ...

What is NSPI's position with respect to that?

A. (M. MacLean) We worked with Bates White over the months since April to gain clarity on items X-2, and then by connection, this one as well.

Q. Yes.

A. And very helpful, that engagement. We have worked and actually developed a tool that's currently in place with the energy dispatch desk, and that system tracks and also informs the energy marketer on dispatch that occurs outside of what the GenOps model would indicate. And I'm going to say it's now PortOps. We've upgraded that model, so it's now referred to as PortOps. So, this item, together with X-2 ---

Q. Um-hmm.

A. Would be completed together. That's our position.

Q. Okay. And have they been completed, in your view?

A. Yes. If you recall in the letter from Bates White to the Utility and Review Board on December 20th, there's a footnote in there that describes that we had taken Bates White on December 19th, through the tool, and that was after again, some extensive dialogue with Bates White, very useful dialogue.

And we received some feedback from Bates White on ways to refine the tool, but that overall the tool is responsive to the finding, and we're very optimistic that this will address the process improvements that Bates White are getting at in these findings.

Q. Okay, so just so I'm clear, Ms. MacLean, you're saying that subsequent -- well, on December 19th, I guess, there was a discussion, there was suggestions for refinements, and those refinements have now been made?

A. Yes, we've worked on the refinements and we -- our intention next is to memorialize the tool in the fuel manual, and of course as well to take Bates White through those refinements.

Q. Okay.

A. So, but again we're optimistic that we're very close to addressing the intentions of these findings.

Q. And so that would cover off both the X-2 and [XIV-3].

A. It would also cover ---

Q. Sorry, it would cover off the previous one related to the GenOps and the PHP piece as well.

A. Correct. And because I mentioned that we are memorializing the description of the tool in the fuel manual, that revision would take place in Appendix R, and there are two other findings in the list of eight in Bates White's December 20th letter, that also involve revisions to the fuel manual in Appendix R, and we elected to do all of those revisions together so that there's one issuance or re-issuance of Appendix R.

So, we'll be reviewing that as well and taking this to the FAM Small Working Group at our next scheduled meeting.

Q. So, you expect a near term finalization of those issues.

A. We do.

[Transcript, pp. 114-118]

[47] The Board endorses Recommendation XIV-3, including the recommendation that all commitment and dispatch decisions made outside of GenOps (now PortOps) be well documented. It notes NS Power's commitment to conclude, in the near future, revisions to the Fuel Manual with respect to the protocol and documenting procedure.

### **3.3 IRP process**

[48] Bates White and NS Power acknowledged that the following FAM Audit recommendations should be dealt with as part of the IRP process:

- **Recommendation IX-1 (IRP Planning, Power Plant Performance Chapter)**

[49] Bates White recommended that NS Power conduct regular and robust IRP planning to help ensure its resource fleet meets NERC and NPCC requirements without being over capacity. Owing to the importance of this recommendation, the Board quotes Recommendation IX-1:

... That IRP planning should:

- Be conducted regularly (e.g., every two years).
- Determine the *optimal* planning reserve margin, not just reconsider whether a 20% planning reserve margin adequately meets NPCC or NERC standards. This will ensure that NSPI will be regularly determining the lowest planning reserve margin possible to meet NPCC requirements, rather than just assessing if “20%” remains in compliance.
- Provide a transparent forecast of peak load that can be fully vetted by the Board, the Board’s consultants, and stakeholders, as applicable.
- Consider the full costs and benefits of all investment alternatives, including firm import capacity; transmission expansion; demand-side management; additional domestic and external hydro resources, including pumped hydro storage and additional hydro delivered over the Maritime Link; natural gas infrastructure investments; and emerging technologies as alternatives to traditional maintenance of existing generation or expansion of NSPI’s portfolio.
- Regarding natural gas infrastructure investments (e.g., natural gas-fired combined cycle generation, firm pipeline capacity), include use the variable cost of gas (commodity, fuel, and variable pipeline charges) as the input into PLEXOS model runs, and not include the capital costs of the investment in commitment and dispatch costs, but instead add the fixed costs to the cost of generation subsequent to the PLEXOS runs. NSPI should also evaluate potential changes to its generation fleet by including updated, combined-cycle technology as a generation option.
- Explicitly address the effect of PHP load. The LRT requires that NSPI exclude PHP from its planning considerations. NSPI should assess the effect of incorporating PHP load in resource planning to ensure that PHP load does not impose net costs on FAM customers over a longer time horizon.
- Consider the full costs and benefits of maintaining all of NSPI’s existing generating assets. This would include the environmental costs/benefits, the sustaining capital costs, OM&G projections, capital expenditures to address fuel transportation and handling infrastructure, decommissioning costs, NSPI’s return of and on capital related to each plant, and FAM cost impacts, among potentially many others.
- Determine a reasonable effective load carrying capability for both existing and new wind resources.

- Allow for Board and stakeholder review and input. IRPs are only as useful as the assumptions that drive them, so it is important that NSPI's IRP methodology and assumptions be vetted by third parties and experts. [Emphasis in original]

[Exhibit N-1, p. 178]

[50] After reviewing NS Power's Reply Evidence, Bates White changed the first point in the Recommendation to say that NS Power should conduct regular IRP planning but regularity does not require every two years.

[51] In its evidence at the hearing, NS Power confirmed that all components of this Recommendation, as amended, will be implemented and specifically dealt with as part of the IRP process.

[52] The Board endorses and accepts the Bates White Recommendation IX-1 and agrees that this matter can now be considered as part of the IRP process.

- **Recommendation X-3 (Operating Reserve Surpluses, from Economic Commitment and Dispatch Chapter)**

[53] Bates White Recommendation X-3 was as follows:

X-3: To help specify and track both the causes of NSPI's observed operating reserve surpluses and the relative contributions of factors such as the variability of wind output on those surpluses, as well as to help inform the next IRP plan, NSPI should document instances of operating reserve surpluses above 150 MW and document their cause(s). NSPI should continue this documentation for the shorter of one year or the start of the IRP process, as defined by a draft IRP plan filed with the Board.

[Exhibit N-1, page 197]

[54] In its Reply Evidence, NS Power filed a strong response, including expert testimony from Mr. Marshall of WKM Consulting, to which Bates White responded. Bates White refuted a number of the points made by NS Power and WKM Consulting.

[55] It appeared to the Board at the commencement of the hearing that this was one of the more contentious issues in the hearing; however, it transpired during the course

of evidence that Bates White and NS Power had largely reconciled their differences as the following passages explain:

--- EXAMINATION BY THE CHAIR:

Q. ...

And I guess my observation, based on the evidence of Nova Scotia Power, including that of Mr. Marshall, there appears to be a fairly fundamental difference as to how to approach this reserve issue between the company and you. And, I guess, I make the observation that that difference didn't seem to need to narrow through the exchange of evidence in submissions in this proceeding. And my question, similar to Mr. Deveau's question is, how optimistic are you that we can get to some sort of consensus in the IRP process?

A. (Vincent Musco) I don't think the differences we have with -- I'll say generally, Mr. Marshall, given what was filed in rebuttal evidence. I don't think that's something -- I do think we can resolve the difference. I'll start by saying that. I think the biggest difference we had with Mr. Marshall, was that we don't view a resource that is sitting idle as costless. And we also don't view the existence or lack thereof of a market for reserves as creating different goals for ratepayers.

Ultimately, you want to pay -- you want your ratepayers getting value out of what they're paying for. I think that's the -- really, to boil it down, that's really the difference.

And so, in our view, if the IRP process appropriately and fully captures costs of that -- of reserves, even when they're sitting idle, generating asset that's sitting idle and not burning fuel. And that's fed into the larger analysis to determine what an optimal resource portfolio would look like going forward. That particular concern goes with.

So, it's -- and really, this is a microcosm of where we are in the IRP process, is making sure that the assumptions and the scenarios that are run and what's being modelled is credible and not unreasonable. If we can get those right, then the IRP will give us a really useful look at what's optimal and what's not. [Emphasis added]

[Transcript, pp. 59-60]

[56] The following was evidence from NS Power:

EXAMINATION BY THE CHAIR:

Q. I had planned to go through each of the recommendations and see what the follow-up was, but that's been done for me, so I really only have one question. I think it's for you, Mr. Casey, and it's on the issue of reserve surpluses and economic dispatch. I observed this morning with Bates White that they had taken a position, and then there was what I'll call a fairly spirited response from Nova Scotia Power, including Mr. Marshall's evidence, which you're perfectly entitled to do, and expressed the concern that there was a fairly fundamental difference of viewpoints and how was that going to get resolved in the IRP.

Bates White, I think, downplayed that concern a little - well, they did downplay that concern a little. But, nevertheless, I did observe the spirited defence. How do you see the matter getting resolved in the IRP?

A. (Paul Casey) I think we're very, very closely aligned. I think that in our attempts to make sort of clarity, just kind of make sure that we were talking about the same things, I think we may have been a little bit misunderstood. And I think the more that we talk, the more that we see that we're not that different at all, so I'm very, very optimistic that we will reach a conclusion on these. I think we are talking about the exact same things.

We fully acknowledge that every unit on our system has a cost. Those costs need to be paid by customers, obviously. That's where costs are recovered. Our job to make sure that we're minimizing those costs at every minute of every day. I think that we're very, very close. I actually think that we fully agree. And I think that the IRP -- the collaborative process will help us bring -- make sure that we are including all of those costs. But there were no costs that I would look at that I would say that they had identified, whether that be a fixed cost, a carrying cost, the variable cost of fuel -- we agree that all those costs are there.

What we were really talking about was the allocation of those costs where FAM customers are -- you know, inside the FAM, the variable fuel costs are there, but the fixed costs, for example, is something that will be discussed at the IRP, as we've talked about a lot here today.

So, I would be much more on the -- I would much more have the view that we're very, very close. I don't think that there's a big gap there, and I'm very optimistic that we can conclude this. [Emphasis added]

[Transcript, pp. 145-147]

[57] The Board considers this Recommendation to be one of the most important from the audit. The Board accepts Recommendation X-3 from Bates White and agrees with what appears to be the consensus between NS Power and Bates White that the matter be further resolved through the IRP process.

- **Recommendation XIV-5 (Biomass Plant Value Analysis, from Board-Specific Issues Chapter)**

[58] Bates White Recommendation XIV-5 relates to the biomass plant. The Recommendation was as follows:

XIV-5: NSPI should perform a standalone analysis to determine the value of the Biomass Plant to FAM customers, looking forward, in the absence of PHP load. Such a study would establish whether any of the costs of the facility are appropriately considered incremental to PHP load and would inform considerations of how to shield FAM customers from such costs.

[Exhibit N-1, p. 288]

[59] In its Reply Evidence, NS Power accepted the Recommendation. In its Action Plan Update, NS Power confirmed that the IRP will address the value of the biomass plant to FAM customers. Bates White, in its December 20, 2019, Status Report, indicated that the decision not to complete a stand-alone study on the biomass plant, and instead study the value of the biomass plant in the IRP process, is reasonable and that the IRP is a suitable forum for doing this.

[60] The Board accepts Recommendation XIV-5 and confirms that the matter is to be pursued as part of the IRP process.

### **3.4 2018-2019 FAM Audit**

[61] Bates White confirmed that the following issues would be monitored in the upcoming 2018-2019 FAM Audit:

- **Recommendation XII-2 (HFO Hedge, from Hedging Chapter)**

[62] Bates White Recommendation XII-2 relates to the Heavy Fuel Oil (HFO) hedge at the Tufts Cove generating facility. The specific recommendation was:

XII-2: NSPI should quantify the all-in cost of the HFO hedge at Tufts Cove, including how quickly the generator can switch from gas to HFO, and the cost of unplanned gas burns at Tufts Cove when HFO is less expensive than gas. These are all costs associated with the HFO hedge and should be compared to NSPI's other hedging options, such as the expected costs of buying either fixed price monthly gas or financial swing-swap contracts, when making hedging decisions.

[Exhibit N-1, p. 268]

[63] In its Reply Evidence, NS Power accepted the recommendation, understanding it to be a one-time analysis rather than an ongoing requirement. In its Rebuttal, Bates White indicated that they did not understand NS Power's need to limit the option valuation of the Tufts Cove HFO hedge to a one-time event. Instead, Bates White argued that they would expect NS Power to maintain an on-going valuation model of the HFO hedge to assist NS Power in its fuel purchasing and hedging decisions.

[64] In its Action Plan Update, NS Power referenced its PLEXOS fuel forecasting model and stated:

... As the model inherently evaluates the oil versus gas option as an effective first level of hedging, the optimal dispatch and resulting volumetric fuel forecast becomes the basis for NS Power's secondary hedging activity through physical or financial contracting to protect against changes in market pricing of HFO and/or natural gas as appropriate. NS Power is confident that the model is calibrated appropriately to capture the fuel switching (or HFO hedge) value, and this process will continue to be included on an ongoing basis.

[Exhibit N-14, p. 37]

[65] Bates White, in its December 20, 2019, Status Report, indicated that they did not doubt the effectiveness of the PLEXOS model. However, they were unsure how continued use of the PLEXOS model would address Recommendation XII-2. Based on this response, NS Power stated during the hearing that it agreed with maintaining a valuation model of the HFO hedge to be used in its fuel purchasing and hedging decisions. NS Power further stated that it has begun preliminary development of such a formal valuation model and looks forward to reviewing the model with Bates White in the near future.

[66] The Board accepts Bates White Recommendation XII-2. NS Power's progress on this recommendation is to be reviewed as part of the 2018-19 FAM Audit.

- **Recommendation X-2 (Commitment and Dispatch Decisions Outside GenOps, from Economic Commitment and Dispatch Chapter)**

[67] Bates White Recommendation X-2 was as follows:

X-2: NSPI should work to reduce commitment and dispatch decisions made outside of GenOps, such as those related to the PH Biomass unit and Tufts Cove. All commitment and dispatch decisions made outside of GenOps should be well documented.

[Exhibit N-5, p. 18]

[68] This recommendation was linked by NS Power to Recommendation XIV-3 discussed earlier in this Decision, respecting revisions to the Fuel Manual. NS Power accepted Bates White's Recommendation XIV-3 to establish and document a protocol in

the Fuel Manual for applying manual adjustments to its dispatch procedures that deviate from the GenOps schedule. The development of the protocol itself is reviewed under Recommendation XIV-3 above.

[69] However, the thrust of Bates White's Recommendation X-2 was that NS Power should actually reduce the number of commitment and dispatch decisions made outside of GenOps, and that any such cases should be well documented. In Bates White's Status Report dated December 20, 2019, it stated:

Again, the intent of our recommendation is to reduce commitment and dispatch decisions that deviate from the economically optimal. NSPI has not yet responded to this portion of our recommendation; instead, they have focused on the "documentation" portion of the recommendation by developing a process to "track and detail" such deviations. NSPI's commitment to document deviations from economic commitment and dispatch is a positive development and per our initial review of that tool, contains numerous positive improvements to NSPI's processes. We nevertheless reiterate the broader purpose of our recommendation, which is to reduce reliance on commitment and dispatch out of economic merit order. As such, we consider this item to be not yet satisfactorily addressed. [Emphasis added]

[Exhibit N-15, pp. 8-9]

[70] Most, if not all, of NS Power's evidence on Recommendations X-2 and XIV-3 focused on its acceptance of the protocol and the documentation process. However, NS Power has not expressly confirmed in its evidence that it will work to actually reduce the number of commitment and dispatch decisions made outside of GenOps (now called PortOps).

[71] The Board observes that the prudence of any commitment and dispatch decisions by NS Power made outside of GenOps or PortOps will ultimately be reviewed in future FAM Audits. To the extent that such decisions occur, it is important that NS Power be able to transparently demonstrate that such decisions were reasonable and appropriate.

### 3.5 Tufts Cove Refurbishment

[72] On June 30, 2017, NS Power made a capital application to the Board (Matter M08144 - CI #47331 – LM6000 191-253 Engine Refurbishment) for the approval and capitalization of costs in the amount of \$1,023,342 for the refurbishment of its LM6000 191-253 combustion turbine operating at the time as Tufts Cove Unit 4. On October 11, 2017, the Board denied NS Power's application. The costs associated with CI 47331 were for work related to an internal oil system manifold failure in April 2015, on LM6000 engine 191-253 that rendered the engine unserviceable and posed a potential fire hazard, therefore requiring repair and maintenance.

[73] In denying the approval of the work order and related capitalization, the Board questioned whether a) the expenditures should be considered capital, and b) the expenditures should be charged to ratepayers. The second issue relates primarily to a settlement agreement between NS Power and the engine's original equipment manufacturer (OEM). Through this agreement, NS Power received compensation from the OEM for engine performance issues. These performance issues called into question the assignment of related costs to ratepayers. The Board also questioned whether NS Power had received adequate settlement compensation from the OEM. Although NS Power had asked to capitalize the expenditure, the Board, by questioning the appropriateness of its capitalization and related charge to ratepayers, directed these costs to the FAM for a review by the Fuel Auditor.

[74] In addition to the Tufts Cove cost issues identified above, the Board noted that in its review of Matter M08144, it was also discovered that NS Power had capitalized \$514,751 related to a 2013 CT Asset Optimization Study. It was not clear to the Board how these costs met the criteria for capitalization. Therefore, as these costs were

distributed across multiple capital work orders, the Board directed NS Power to file a submission no later than November 1, 2017, that explained the accounting treatment for associated costs from as far back as 2013. This issue was resolved by the Board in its December 21, 2017, order, which accepted NS Power's allocation of costs for the Study. Nevertheless, the Board noted that the 2013 CT Asset Optimization Study may be valuable to the Fuel Auditor in informing the extent of NS Power's maintenance and investments on the units at Tufts Cove. The Board, therefore, referred the Study to the Fuel Auditor for review.

[75] Bates White reviewed NS Power's Accounting Policy and Procedures Manual Section 6000 "Assets Capitalization Cost", which states that an expenditure must create a benefit having a life of more than one year or add more than one year to the originally estimated useful life of an existing asset to be considered a capital asset. Bates White also noted that the CI 47331 expenditures were not annual fees or maintenance costs which were meant to maintain the existing asset. As these expenditures were not recurring annual fees or maintenance costs, and added an additional year of useful life, Bates White found that the CI 47331 costs satisfy the criteria to be considered a capital cost. Bates White's review also concluded that NS Power obtained sufficient compensation from the OEM and that NS Power had been prudent in its maintenance of the engine.

[76] Bates White's review of the 2013 CT Asset Optimization Study found that the Study enabled NS Power to understand the condition of their CTs and rank and prioritize the work associated with them based on their condition. Bates White also found

that the Study indicated that NS Power has maintained its LM6000s and CT assets reasonably. Bates White did, however, note the following:

One shortcoming of the 2013 CT Asset Optimization Study, however, is that it does not fully inform the decision to invest in the preservation of these units vis-à-vis replacing them with more modern CTs or another type of fast ramping generation units. Notably, despite the reasonable maintenance history, some units have had operational issues—we highlight Engine 191-253, for example, which TGA reported in 2013 to have failed to provide satisfactory service of any kind, since NSPI commissioning in late 2012. We would argue, then, that NSPI should at least be aware—and make stakeholders and the Board aware—of the comparative cost of continuing to maintain these units, versus replacing them with more modern generation units. NSPI argues that the expense to retire the LM6000 engines—including remaining net book value—plus the cost of procuring new capacity is magnitudes higher than operating with the current assets. This may be true; our point, however, is that the 2013 CT Asset Optimization Study did not conduct such a comparison. Below, we include a recommendation that NSPI conduct such an analysis, subject to NSPI's IRP process identifying a need for peaking and/or fast-ramping capacity.

[Exhibit N-1, p. 294]

[77] Based on Bates White's review, the Board finds that the costs related to CI #47331 – LM6000 191-253 engine Refurbishment (Matter M08144) can be appropriately capitalized by NS Power.

[78] As noted in Recommendation XIV-6 of the 2016-17 FAM Audit Report, NS Power is to compare the economics of preserving the serviceability of its current CT fleet to the economics of replacing them. This comparison is to be completed through NS Power's 2020 IRP development process.

### **3.6 Internal Audit**

[79] Bates White made Recommendation XIV-7 respecting NS Power's internal audit process:

XIV-7: NSPI should consider revising its internal auditing provisions to re-introduce a regular comprehensive internal audit that is more focused on higher risk processes.

[Exhibit N-1, p. 299]

[80] In effect, Bates White recommended that NS Power should reverse its recent move to a risk-based approach and restore its regular comprehensive audit process.

[81] One of Bates White's concerns was outlined in the Audit Report:

Regarding our observations during the Audit Period, we note two key points. First, in reviewing Internal Audit reports, we found them to be helpful, clear, and well-written, with useful guidance for NSPI management. Internal audit is serving a crucial role, and when focused on an issue, that team is highly capable. Second, in 2017, we observed just three internal audits, one of which was largely accomplished by external auditing firm Deloitte. Moreover, two of the three internal audits conducted in 2017 were driven by findings and recommendations from the previous fuel auditor. To have confidence in the risk-based approach, the Board and stakeholders will have to see evidence that NSPI's Internal Audit department is identifying and testing the higher risk areas of its fuel procurement function, which should manifest itself in more frequent internal audit reports that address the higher risk areas of NSPI's fuel procurement function.

[Exhibit N-1, p. 298]

[82] NS Power considered the recommendation, but maintained its view that the recently adopted risk-based approach does provide for a comprehensive audit. In its Reply Evidence, NS Power asserted that its audit of higher risk areas via component audits is appropriate compared to one large audit: see Exhibit N-5, p. 29.

[83] Mr. Landrigan testified that adopting a risk-based approach is a better way to conduct the internal audit function because it allows the Company to focus on major risks, while providing it with the flexibility to review medium or low level risk areas on a multi-year timetable: see Transcript, pp. 139-140.

[84] Ultimately, in its Rebuttal Evidence, Bates White considered that NS Power's response was satisfactory and did not pursue the matter any further. However, it did note that NS Power's actions on such recommendations should be monitored to ensure NS Power follows through on its commitments and meets the spirit of the recommendations. At the hearing, Bates White highlighted the importance of the internal audit process.

[85] The Board trusts that the issue of NS Power's internal audit procedures will be canvassed in the next FAM Audit to ensure they are robust.

### **3.7 Procedural Recommendation**

[86] In its brief, the Industrial Group recommended that in future audits "the Board consider adding time in the pre-hearing schedule for the Auditor to file comments as to the degree of satisfaction with the Audit Action Plan."

[87] The Industrial Group was referring to the December 20, 2019, Status Report from Bates White which had been requested by the Board. The Industrial Group noted that the Bates White letter was very helpful in focusing the remaining live issues for determination in the hearing.

[88] With respect to this particular audit, there was an extended period of time between the filing of the audit, July 24, 2018, and the Board's hearing on the audit, January 13, 2020. This is because of the *Electricity Plan Implementation (2015) Act*, s. 13, which provided that no hearing relating to an audit occur during the Rate Stability Period. That provision of the legislation caused the extensive delay. The Board expects that any hearing on the audit currently underway will be able to proceed on a much more expeditious timeline so that the hearing would conclude within a matter of weeks or months after all of the evidence is filed.

[89] The Board agrees with the Industrial Group that the December 20, 2019 letter, in the context of this proceeding, greatly assisted in focusing parties and the Board on the issues and in allowing for a more efficient hearing.

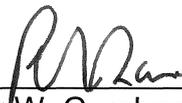
[90] However, recognizing there will be timing differences, the Board will take this recommendation from the Industrial Group into account in setting the timeline for the next proceeding.

#### 4.0 CONCLUSION

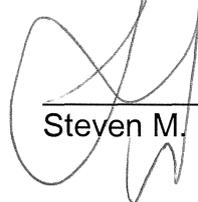
[91] Bates White and NS Power now agree that the eight outstanding matters from the FAM Audit can generally be closed out in one of three ways: 1) through revisions to the Fuel Manual; 2) by referral to the Integrated Resource Plan proceeding; or 3) Bates White reviewing the matter in the upcoming 2018-2019 FAM Audit. The Board endorsed these remaining eight recommendations and agreed that the matters can be closed out as agreed between Bates White and NS Power.

[92] An Order will issue accordingly.

**DATED** at Halifax, Nova Scotia, this 13<sup>th</sup> day of March, 2020.

  
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Peter W. Gurnham

  
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Roland A. Deveau

  
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Steven M. Murphy

Schedule A

**Table 1. The 32 Audit Recommendations Satisfactorily Addressed by NSPI**

Recommendation	Chapter	Description
II-1	Organization, Staffing, and Controls	Commercial Incentive Program
III-1	Forecasting and Fuel Supply Planning	Customer Survey
III-2	Forecasting and Fuel Supply Planning	Plexos documentation
III-3	Forecasting and Fuel Supply Planning	Generation unit characteristics in Plexos
III-4	Forecasting and Fuel Supply Planning	Modeling wind in Plexos
IV-1	Solid Fuel Procurement and Contracts	Biomass contract termination
V-1	Solid Fuel Supply Management	Trenton 6 operations planning
VI-1	Natural Gas Supply Planning	Natural Gas transaction recommendations
VI-2	Natural Gas Supply Planning	Natural gas modeling in Plexos
VII-1	Natural Gas Procurement	NS Power transactions with Emera
VII-2	Natural Gas Procurement	Screening for Allegro trades
VII-3	Natural Gas Procurement	Gas trading daily records
VII-4	Natural Gas Procurement	Allocation of fuel costs
IX-2	Power Plant Performance	Tufts Cove
IX-3	Power Plant Performance	Plant performance reporting
X-4	Economic Commitment and Dispatch	Cooperative Dispatch
XI-1	Power Purchases and Sales	RFP procedure - counterparties
XI-2	Power Purchases and Sales	RFP procedure - price-only evaluations
XI-3	Power Purchases and Sales	RFP procedure - RFP criteria
XI-4	Power Purchases and Sales	Brooklyn PPA
XI-5	Power Purchases and Sales	Import transactions reasons
XI-6	Power Purchases and Sales	Import and export transaction records
XI-7	Power Purchases and Sales	Import transactions benefits
XII-1	Hedging	Table 1 of Fuel Manual solid fuel portfolio process
XIII-1	FAM Accounting	Update Accounting Policies and Procedures
XIII-2	FAM Accounting	Formal Control Report
XIII-3	FAM Accounting	Request for Payment Form
XIV-1	Board-Specific Issues	Load Retention Tariff Reporting
XIV-2	Board-Specific Issues	Biomass Plant Generation Reporting
XIV-4	Board-Specific Issues	LRT criteria for FAM participation
XIV-6	Board-Specific Issues	CT Fleet analysis
XIV-7	Board-Specific Issues	Internal Audit