Request IR-1:

Reference to page 1 of 5, NS Power notes "work completed on the same asset" in the list below:

- **2022 C0040846 POA Boiler Refractory Replacement 2022 - $940,602**
- **2023 C0052274 POA Boiler Refractory Replacement 2023 - $874,151**
- **2024 C0060244 POA Boiler Refractory Replacement 2024 - $954,965**
- **2026 TBD POA Boiler Refractory Replacement 2026 - $TBD**
- **2027 TBD POA Boiler Refractory Replacement 2027 - $TBD**

(a) Please confirm whether these Capital Investments (CIs) pertain to separate work not included in the current application.

(b) Please provide a detailed cost estimate or expense breakdown for each individual project.

(c) Please submit comprehensive project scopes, including:

(i) The work completed in previous projects, and

(ii) The planned scope of work for upcoming projects.

(d) All listed projects, including the current one (CI C0067908), involve refractory replacement within the boiler system and are scheduled over a six-year period.

(i) What criteria were used to define the scope of work for each individual project?

(ii) How does NS Power prioritize these projects and determine their respective start dates?

(iii) Please describe NS Power's overall strategy for segmenting the boiler system into components and organizing them into annual replacement projects.

Response IR-1:

(a) Confirmed. Each project addresses specific refractory components based on inspection findings and operational priorities.

(b) All boiler-related capital projects listed for 2025 were submitted to the Board as part of NS Power's 2025 Annual Capital Expenditure (ACE) Plan. However, NS Power is unable to provide comprehensive cost estimates or detailed expense breakdowns for these previously submitted projects due to the cybersecurity incident that impacted access to historical financial records. For the 2026 boiler refractory projects, cost estimates and detailed scopes are not yet finalized. These will be developed following the 2025 annual outage, once updated inspection data and condition assessments are available.

(c)

(i) The Project scope includes inspection and refurbishment of the boiler refractory lining in the following areas:

- Combustor
- Four Return Legs
- Two Cyclones, each requiring erection of 100-foot scaffold for access.
- Two Front to cyclone crossovers ducts.
- Two Cyclone to backpass crossovers ducts.
- Refractory at two startup duct burners
- Two loopseal cans

Typical replacement activities include replacement of refractory expansion joints and reapplication of wear face refractory in the combustor.

In cases where inspection identifies the need for extensive refractory replacement, stand alone refractory projects are created for the affected areas. Such projects are

classified either as U&U or as planned projects to be executed during subsequent outages.

(ii) It is anticipated that future projects will have a similar work to that described in part (c)(i). The extent and nature of the future refractory projects will be determined by the inspection findings.

(d)

(i) Scope definition is guided by NS Power's Asset Management Methodology, which incorporates risk ratings, inspection data, and historical performance.

(ii) Project timing is aligned with scheduled outages and prioritized based on component condition and operational risk.

(iii) The boiler system is segmented into manageable zones, allowing for phased annual replacements that minimize disruption and optimize resource use.

Request IR-2:

Reference to page 1 of 5, NS Power notes that "This work is crucial to maintaining safe and efficient boiler operation and minimizing the risk of unplanned outages. Refractory materials are installed in the following key areas:

- **Cyclones (two total)**
- **Combustor-to-cyclone crossover ducts (two total)**
- **Cyclone-to-back pass crossover ducts (two total)**
- **Loop seal cans (two total)**
- **Cyclone return legs (four total)**
- **Lower combustor**

(a) Please confirm whether any work has been undertaken to address the issues outlined above.

(b) If any work has been completed, please provide a detailed description of the specific activities undertaken and indicate the expected service life of the refurbishment or replacement.

(c) If no work has been completed to date, please explain how the project budget estimate was developed. Specifically, describe the process, assumptions, and methodology used to determine the estimate, and provide an explanation for the proposed cost variances.

(d) Please submit any professional studies or technical analyses that support the proposed refractory work.

Response IR-2:

(a) Confirmed. Work has been undertaken in several of the listed areas as part of annual maintenance outages in prior years. The scope and extent of this work varies by year and is based on inspection findings and assessed component conditions.

(b) Completed activities include: partial refurbishment of cyclone linings, selective replacement of return leg refractory, and localized refurbishments in the combustor. Service life expectations for these components generally range from 3 to 5 years, though some components may last longer depending on the specific operating conditions.

(c) The project budget estimate for boiler refractory refurbishment was developed using historical cost data from previous boiler refractory refurbishment projects at the Point Aconi Generating Station, adjusted for inflation to reflect current economic conditions. This approach aligns with the typical 3 to 5 year service life of refractory components, ensuring the planned scope is consistent with prior refurbishment cycles. Key assumptions include recurring component replacement requirements identified through annual inspections, labor and access costs defined according to planned outage logistics, and material pricing established through formal vendor engagement. The primary cost variance in the current estimate is due to updated refractory material pricing, driven by tariffs on imported goods and vendor adjustments reflecting current global market conditions.

(d) The refractory is visually inspected by experienced industry professionals to identify for thinning, cracking or missing refractory sections. The inspection findings, reviewed in consultation with NS Power personnel, form the technical basis for determining the scope of replacement during the current outage. The detailed inspection report is included as part of this response to support the assessment and replacement recommendations. Please refer to Attachment 1.

RHI MAGNESITA

Inspection Report

Customer: NSPI - POINT ACONI	**PO No.:**		
Customer reference No.:	**RHI Project No.:**		
Project description: Fall 2024	**Unit:**		
Initiated by (RHI): Daniel Copeland / Greg Martin	Date:	**Report No.: 01**	**Rev. No.:**

POINT ACONI

Nova Scotia POWER An Emera Company

Power Plant
Nova Scotia

RHI MAGNESITA

Inspection Report

(FIGURE #01) The cold feet chute, this area was repaired in August of 2024. The red area was all repaired, however there were anchors showing on the outside of this area that we recommend being repaired in 2025.

FIGURE #01

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RHI MAGNESITA

Inspection Report

(FIGURE #02) Thermal/ Dog box, this area was repaired in August of 2024, and these are repaired every outage.

FIGURE #02

RHI MAGNESITA

Inspection Report

(FIGURE #03) The coal feed chute, the red-painted area was repaired in August of 2024, however, the very tips of anchors were showing on the outside of this area that we recommend being repaired in 2025.

FIGURE #03

RHI MAGNESITA

Inspection Report

(FIGURE #04) Doghouse/Thermal well, this was also repaired last year, repairs are also recommended for 2025.

FIGURE #04

RHI MAGNESITA

Inspection Report

(FIGURE #05) The coal feed chute, was repaired in 2024.

FIGURE #05

RHI MAGNESITA

Inspection Report

(FIGURE #06)
Combustion chamber tube area, repaired in 2024.

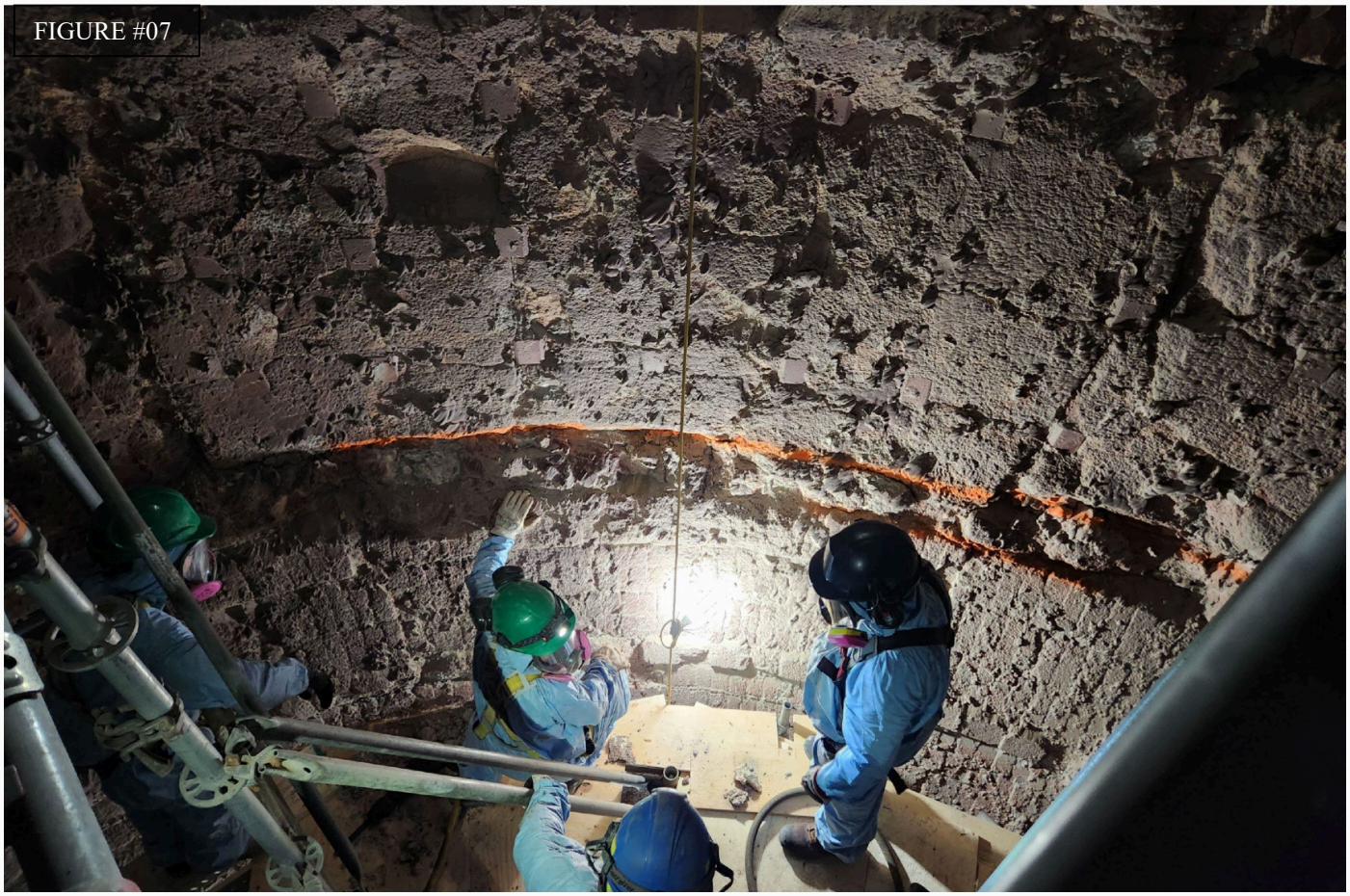
FIGURE #06

RHI MAGNESITA

Inspection Report

(FIGURE #07)
Repairs were done to the scroll floor in 2024.
Scroll floor north and south side will need repairs during 2025 outage.

FIGURE #07



RHI MAGNESITA

Inspection Report

(FIGURE #08 and #09)
Return lines from pictures during 2024 outage.
3 return lines from the south side need to refractory repairs.

FIGURE #08

FIGURE #09

Recommendations for the next outage (2025)

1-Three return legs will need to be replaced and we will need to order brick.
2-The bottom 20ft of the north cyclone will need to be replaced.
3-The combustion chamber will need major repairs walls are getting very thin.
4-We would recommend ordering two sets of loop seal expansion bricks.
5-Scroll floors both north and south will need repairs.

Request IR-3:

Reference to page 2 of 5, NS Power notes that "Therefore, executing this project during the scheduled 2025 maintenance outage is ideal, as it allows for a comprehensive refractory inspection, routine refurbishment, and a targeted replacement program of components that require replacements based on the risk rating in the Asset Management Methodology."

(a) Please explain the NS Power Asset Management Methodology, including a detailed explanation of the Risk Rating system used to assess and prioritize assets.

(b) Please provide a description of all major equipment within the POA, including:

- **Their primary functions**
- **Key components within each system**
- **Typical service life versus current age of those components, and**
- **The factors that influence their operational lifespan.**

The equipment categories to be addressed may include:

(i) Fuel handling systems — from fuel supply to burner delivery

(ii) Cooling water systems and condensers

(iii) Combustion systems, heat transfer processes, steam production, and utilization

(iv) Ash handling systems — from ash generation to final disposal

(v) Instrumentation and control systems

Response IR-3:

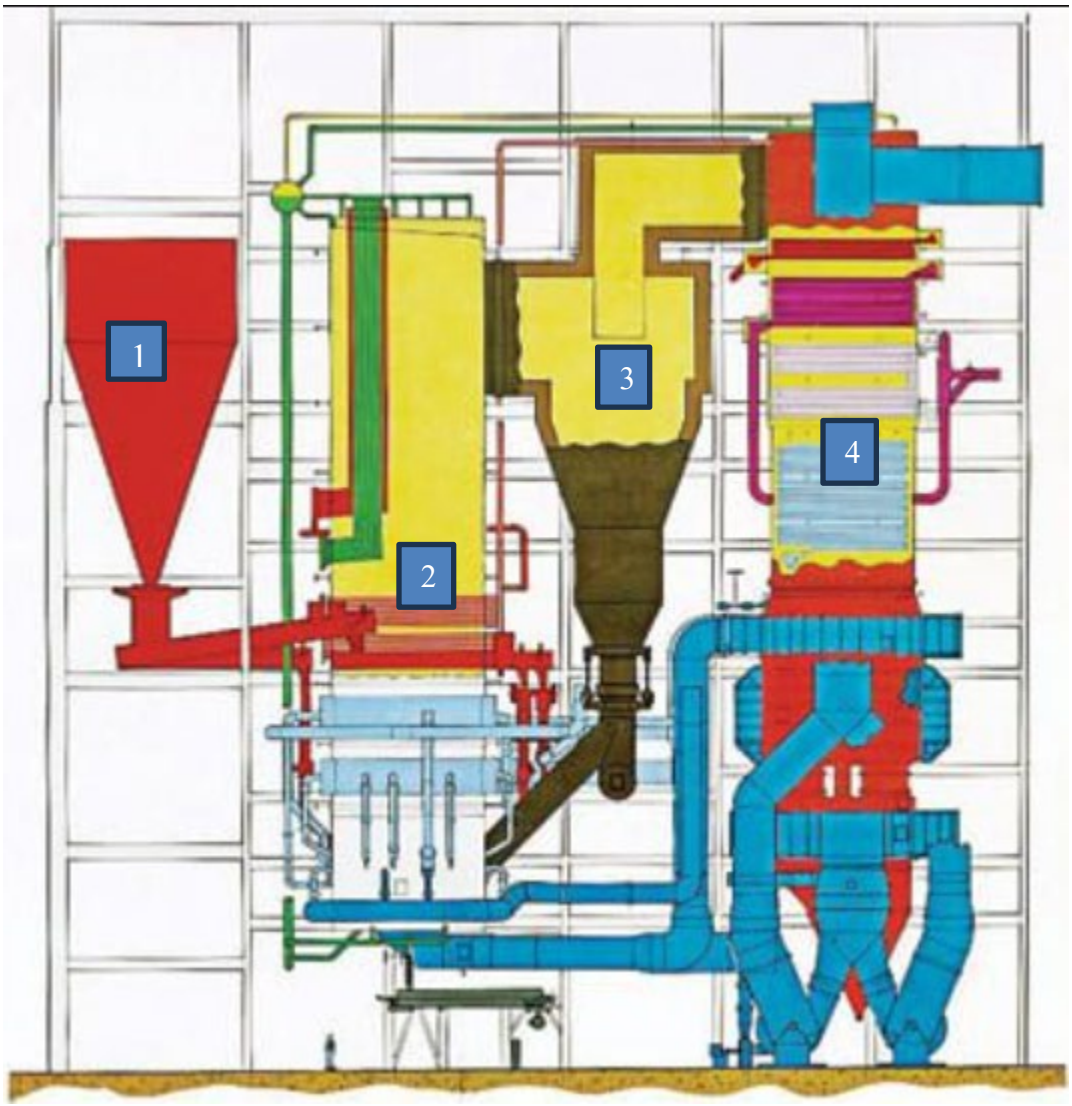
(a) NS Power's Asset Management Methodology is driven by the Company's Strategic Asset Management Plan, and is applied to asset classes or groupings as described by NS Power's Asset Strategy Committee Process (NSPI-AMS-001), which outlines a structured, enterprise-wide approach to the management of asset risk and reliability. As described in

the document, this methodology is deployed through Asset Strategy Committees composed of subject matter experts, engineers, operations staff, and other stakeholders. These Committees are responsible for developing and maintaining Asset Management Plans (AMPs) for critical asset classes. Please refer to non-confidential Attachment 1.

(b) Point Aconi operates a circulating fluidized bed (CFB) boiler, which differs fundamentally from a conventional pulverized fuel (PF) boiler in both fuel handling and combustion chemistry. In the CFB process, crushed (but not pulverized) fuel is introduced into the combustor via four front-wall screw conveyors, feeding into the ash return legs from the boiler's cyclones. Limestone is added to the combustor, where it reacts with sulfur present in the fuel to form calcium sulfate, thereby capturing sulfur dioxide within the ash stream and reducing SO_2 emissions.

The boiler incorporates a pair of high-efficiency cyclones located between the combustor/front pass and the back pass. These cyclones act as particle classifiers: lighter particles are carried with the flue gas to the back pass, while heavier particles are returned via the cyclone return legs to the combustor. This recirculation of solids maintains a continuously circulating bed of fuel, limestone, and ash, which increases residence time and optimizes the sulfur capture reaction.

This design provides improved fuel flexibility and emissions control compared to PF boilers, while eliminating the need for fine coal pulverization. A side elevation of the boiler illustrates the primary system components, including the fuel bunkers (1), combustor/front pass (2), one of the two cyclones (only one visible in side view) (3), and the back pass (4).



Major Systems and Components

A description of major systems follows below. It should be noted that, while investment timelines may be included within the text, this is subject to change based on an asset's current evaluated risk per the process described above.

Fuel and Limestone Handling System

- Fuel Conveyor Belt Line – Transports fuel from the fuel yard to the fuel crusher, and from the crusher to the tripper. Belt structures are original; belts and rollers are inspected regularly and replaced as appropriate based on condition assessment.

- Limestone Conveyor Belt Line – Transports limestone from the fuel yard to the limestone mill. Belt structures are original; belts and rollers are inspected regularly and replaced as appropriate based on condition assessment.

- Coal Crushers – Two original hammer mill coal crushers. Hammers and grates are wearing components, inspected regularly and replaced as appropriate based on condition assessment.

- Fuel Tripper – Delivers fuel to the four fuel bunkers, original to the plant. Conveyor belt and rollers are inspected regularly and replaced as appropriate based on condition assessment.

- Fuel Bunkers – Four bunkers (one per fuel feeder), original to the plant. Inspected according to the preventative maintenance schedule. No significant refurbishment anticipated to be required before retirement.

- Fuel Feeders – Meter fuel to the boiler based on required output. Original to the plant; belts and rollers are inspected regularly and replaced as appropriate based on condition assessment. Control panels are nearing end-of-life and are in the process of being replaced.

- Front Wall Feeder Screws – Deliver ~50 percent of the fuel to the boiler. Inspected annually; replaced as appropriate based on condition assessment, typically every two years, with refurbishments in the intervening year. Work is performed during planned outages.

- Loopseal Conveyors – Two conveyors deliver ~50 percent of the fuel to the ash returning from the cyclones. Conveyors and rollers are inspected regularly and replaced as appropriate based on condition assessment. Structures have been replaced once previously in the plant's life.

- Limestone Mill – Two original mills that pulverize limestone. Inspected at regular intervals; components replaced as appropriate based on condition assessment.

- Limestone Pneumatic Conveyor System – Includes blowers and piping to transport milled limestone from the limestone milling building to the bunkers, and from the feeders to the boiler. Blowers are inspected and replaced as appropriate based on condition assessment; spares for key components are maintained in inventory.

- Limestone Bunkers – Two bunkers supply limestone to the feeders. Filter system inspected regularly; filter bags replaced as appropriate based on condition assessment. No significant refurbishment anticipated before retirement.

- Limestone Feeders – Two feeders meter limestone into the boiler. Original units: belts and rollers are inspected and replaced as appropriate based on condition assessment. Control panels have been replaced once previously during service life. Similar in design to fuel feeders, but smaller.

Circulating Water System

- Intake Tunnel – Extends approximately one mile offshore, drawing cooler, deeper water to reduce debris ingress. Original to the plant; velocity cap cover inspected per preventative maintenance schedule. Expected to remain serviceable through plant retirement.

- Circulating Water Pumps – Two original pumps that draw water from the intake tunnel forebay through the circulating water piping. Pumps require periodic overhaul; one pump has been overhauled three times since commissioning; the other is due for its third overhaul. Both are expected to operate until retirement.

- Circulating Water Piping – Transports water from pumps to the condenser and general service cooling water heat exchangers, then to the outfall. Original to the plant; inspected

during planned outages with minimal maintenance required. Expected to remain serviceable through plant retirement.

- Condenser – Original titanium-tube condenser, inspected annually. Requires annual cleaning; steel casing is rubber-lined, with lining refurbishment scheduled for the 2025 outage. Expected to operate through plant retirement.

- General Service Cooling Water Heat Exchangers – Two exchangers interface between seawater cooling and fresh cooling water. Cleaned and inspected annually; anticipated to operate through plant retirement.

- Circulating Water Outfall – Discharges cooling water channel from the plant. Inspected annually; expected to operate through plant retirement.

Boiler

- Start-Up Burners – Six original light oil burners. Inspected during each planned outage; components replaced as appropriate based on condition assessment.

- Economizer – Heats feedwater prior to entering the steam drum. Original to plant, inspected annually with tubes and shields replaced or refurbished based on condition and tube thickness.

- Steam Drum – Separates steam from water, with steam routed to the superheater and water to the downcomers. Original to the plant, it is inspected annually. Steam separators replaced once during service life.

- Downcomers – Four pipes transferring water from the steam drum to the waterwalls. Original to the plant, connections to the steam drum are inspected biannually.

- Waterwalls – Form the combustor walls and heat water via natural circulation. Original to the plant, inspected annually in high-wear areas. One panel was replaced in 2012. Additional replacements will be based on assessed wear rate and tube thickness; at least one more panel replacement anticipated before retirement.

- Cyclones – Two units separate ash; lighter ash passes to the back pass; heavier ash is returned to the combustor. Steel shells with refractory lining, inspected annually and refurbished/replaced as appropriate based on condition assessment. Full refractory replacement has not been performed previously.

- Superheaters – Three units original to the plant that heat steam prior to entering the high-pressure turbine. Inspected annually; tubes and shields replaced or refurbished based on condition assessment.

- Reheaters – Two units reheat steam from the high-pressure turbine. Reheat I is original to the plant; Reheat II replaced prior to 2004. Inspected annually; tubes and shields replaced or refurbished based on condition assessment.

Ash Handling System

- Bottom Ash Screws – Four screws remove heavy ash from the boiler via water-cooled troughs. All screws have been replaced previously, and current assets are nearing end-of-life. Short trough sections require replacement approximately every 16–18 months; long sections are original. Inspected and refurbished as appropriate during each planned outage.

- Fly Ash Baghouse – Captures fly ash particulates from flue gas. Original unit; inspected annually with filter bags replaced as appropriate based on condition assessment. Two complete bag replacements have been performed since 2000. No additional full bag replacements are expected before retirement.

- Ash Pneumatic Conveyor System – Transports bottom and fly ash to silos. Original piping and blowers; inspected regularly and replaced as appropriate based on condition assessment.

- Ash Silos – Two silos (one for bottom ash, one for fly ash) discharge to conditioning equipment and off-highway trucks for transport to the ash storage site. Original structures; inspected annually. Filters replaced as appropriate based on condition assessment. Anticipated to remain serviceable through plant retirement.

Turbine and Generator

- Turbine – Three sections: high pressure (HP), intermediate pressure (IP), and low pressure (LP). Steam from the boiler passes through the HP section, reheats in the boiler, then passes through IP and LP sections before entering the condenser. These components are original to the plant. A comprehensive inspection and refurbishment of the LP, HP, and IP sections is scheduled for the 2025 outage, as outlined in CI C0061003. While the turbine itself is expected to operate through to retirement, turbine valve components are anticipated to require at least one more overhaul prior to end-of-life, based on condition assessments and operational history.

- Generator – Directly coupled to the turbine. Original unit; inspected and refurbished in 2024. Expected to operate through plant retirement without additional major refurbishment.

Nova Scotia POWER
An Emera Company

Asset Management System Procedure

AMS Number	NS POWER-AMS-001
AMS Title	Asset Strategy Committee Process
Effective Date	June 9, 2025
Revision	1

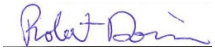
	NAME	TITLE	SIGNATURE	DATE
Author	Erin MacNeil	Manager, AM Operations		June 9, 2025
Reviewer	Dan Feehan	Asset Risk Lead		June 9, 2025
Approver	Robert Doiron	Sr. Manager, Risk & Reliability		June 9, 2025

Table of Contents

1. Purpose

The purpose of this procedure is to provide detail on the NS Power Asset Strategy Committee process administered by the Enterprise Asset Management (EAM) team to support the assessment and management of asset risks, and the reliability of NS Power assets.

Asset Strategy Committees were formerly referred to as Reliability Teams, and this language may still be present in organizational documentation at time of writing.

2. Introduction

All critical NS Power assets are supported by one or more Asset Strategy Committees (hereafter referred to as Strategy Committees, or Committees) whose overall mandate is to assess and manage asset risk, sometimes at the system level, e.g., substation, but most often at the asset level, e.g., power transformer (herein referred to as "assets" for simplicity).

Strategy Committees at the time of writing are as follows:

Air Quality	Dam Structures	Heat Exchangers	Telecom
Ash Residue	Distribution	Hydro Mechanical	Turbines & Generators
Boiler	Dynamic Equipment	Instrumentation & Controls	Transmission
Chemical	Electrical	Rotating Equipment	Vegetation
Civil Structures	Facilities	Submarine Cables	Wind Energy Converters
Combustion Turbines	Fire Protection*	Substations	

Note *: This committee operates outside of EAM oversight, but does have similar functions and deliverables. It is excluded from oversight and evaluation activities described herein.

Strategy Committees are composed of Engineers, scientists and technicians who are subject matter experts (SMEs) for the asset type, maintenance and operations staff with field expertise, and may include other stakeholders such as environmental, or procurement professionals. The mandate of Strategy Committees, in part, is to define the criticality of assets under their purview, understand and evaluate asset risk, and develop asset management plans. Typically, risk profiles are reviewed annually, but may be revisited at any time in response to changes to the asset's "mission", as new information becomes available, or for other reasons.

Some Strategy Committees feed information into others. For example, the Distribution and Transmission Strategy Committees feed information into the Vegetation Committee. NS Power may combine risk profiles for a collection of related assets (such as assets within a substation, or at the same plant) to create a "stacked" profile for the system or facility.

3. Scope

This procedure outlines the major processes for which the Strategy Committees are accountable, namely:

a. Criticality Assessment (see NSPI-AMS-002);
b. Risk Profiles & Risk Mitigation Plans;
c. Documenting and reviewing Asset Management Plans;
d. Maintenance Strategy Optimization;
e. Knowledge Transfer; and
f. Identifying and Leveraging new Operational Technologies (OT) and Industry Best Practice

4. Definitions

No definitions

5. Responsibilities

Business Unit Senior Managers

- Allocate resources from their area to ensure applicable Strategy Committees are properly populated; and
- Hold Strategy Committee members accountable for preparation for and participation in Committee meetings and completion of assigned actions within the Strategy Committee.

Asset Strategy Committee Manager

- Support the Strategy Committee leads in developing and maintaining Asset Management Plans (AMP);
- Work with Senior Managers and Strategy Committee Leads to ensure Strategy Committees have an assigned Lead, and good coverage and diversity of members from various functions and business units;
- Participate in Asset Strategy Committee meetings to ensure committees are aligning with the Asset Strategy Committee process, as outlined herein;
- Support the alignment and normalization of criticality assessment (ref NSPI-AMS-002) and evaluation of risk across all Asset Strategy Committees;
- Ensure continued alignment of the work and deliverables of Asset Strategy Committees with the Asset Management Policy and Strategy Asset Management Plan (SAMP);
- Update and communicate changes to the Asset Strategy Committee Process as needed; and
- Assess each Asset Strategy Committee annually in line with the Asset Strategy Committee scorecard definitions (see Section 6.5).

Asset Strategy Committee Leads

- Lead the development, communication and/or implementation of the AMP, ensuring sufficient consultation with internal stakeholders outside of the Strategy Committee;
- Provide functional oversight and leadership to the Strategy Committee and the production of its deliverables;
- Schedule at least two meetings a year, with the first focused on updating annual risk ratings in support of annual capital planning, and the second focusing on AMPs, knowledge transfer, share emerging technologies and industry best practices;
- Schedule other meetings as required to execute committee strategy and actions and/or address an emerging risk;
- Document meeting minutes and assign actions from Strategy Committee meetings;
- Capture result of annual review of asset risk assessments and actions: where available utilize the Risk Repository interface via GE APM;
- Capture annual review of the AMP, or as defined within the AMP itself; and
- Update the Strategy Committee distribution as new team members are assigned.
- Review ACE project submission lists to ensure alignment with Asset Strategy Committee risk profiles

Strategy Committee Members

- Be prepared for and attend Strategy Committee meetings whenever possible and actively participate;
- Complete assigned actions within the agreed upon timeline; and
- Proactively identify opportunities to improve asset management plans and/or asset performance and share them with Committee.

6. Specific Procedure

6.1.Asset Management Plans

The purpose of Asset Management Plans (AMPs, sometimes referred to as asset strategies or maintenance strategies) is to capture the approach NS Power takes to the management of an asset class/group to achieve the asset's performance goals, or "mission". The mission of an asset is driven by the organization's objectives, which drives the operational context in which the asset functions, therefore the approach to evaluation of an asset's condition and risk at any given time. The AMPS capture activities and resources required to achieve asset performance, as well as identification of risks and opportunities which may affect the asset's operation. The AMP template includes the following concepts, more fully described via Appendix A.

1. Overview – purpose of the Committee and context for the asset grouping
2. Scope – assets included within the purview of the Committee
3. Asset Risk Rating – methodology and considerations for the evaluation of risk for this asset grouping

4. Risks and Opportunities – trends and emerging risks which will impact the management of this asset class (e.g. new technologies, climate change, regulatory environment, etc.)
5. Asset Group Strategy – overview of the bounds in which this asset group is operated and maintained, including performance expectations.
6. Review Frequency – Typically annually for all Strategy Committees
7. References – includes references to other relevant information

The implementation of Asset Management Plans may impact Operational budgets and resourcing, Capital budgets, resourcing and/or future equipment utilization plans. As described in the SAMP (refer to Section 9), Planning is an iterative process combining top-down strategic direction and bottom-up identification of needs based on the current performance of assets, and asset-level objectives or "mission". Objectives and plans can be developed at different levels: Asset Management Plans can be developed for an asset portfolio and/or assets; for example, at business unit level, at a site/facility level or at the complex asset system level.

NS Power's Strategy Committees are at various levels of maturity, with the more developed Committees, typically for the most critical Power Production assets, having been active for over 10 year with newer Committees formed as recently as 2024. Therefore, AMPs are also at various stages of development, and while each Committee will have its own roadmap, each Committee is striving to advance through to "Advanced" as described in Appendix B.

6.2.AMP Reviews

Strategy Committees are tasked with reviewing the AMP regularly, typically during the Fall/Winter meetings, and identifying areas of improvement to optimize the performance of the assets covered by the team. One of the first priorities for Strategy Committees is to ensure assets within their prevue have defined criticalities, a method to assess condition (both discussed in Section 6.3), and a defined maintenance strategy.

Maintenance Strategy Review

When developing, updating or reviewing an asset's maintenance strategy, the Committee should utilize the reliability planning approach, as shown in the following figure. This 7-step process supports the development of a sustainable and reliable maintenance strategy.

Figure 1: Process for Maintenance Strategy Development and Reviews

Maintenance Strategy Optimization

As part of continual improvement of maintenance strategies, strategy Committees shall look for opportunities to deploy more proactive and less reactive, resource-intensive approaches to the management of an asset. NS Power utilizes various processes and technologies within its Maintenance Strategies, including:

a) **Preventative maintenance (PM)** activities deployed in the work management system, increasingly based on criteria other than "calendar time", such as unit or asset running hours;
b) **Condition Based Maintenance (CBM**), sometimes referred to as PdM (Predictive Maintenance) which includes technologies such as vibration monitoring (VA), ultrasonic emissions (UE), oil analysis (OA) and infrared monitoring (IR) to look for anomalies in equipment operation that are not detected through "online" means;
c) **Predictive Pattern Recognition (PdP**), a statistical analysis method which looks for early indication of equipment issues through analysis of historical and current operating data;
d) **Risk-Based Inspections (RBIs)** which direct inspection scope and frequency to assets deemed to have the highest risk, used for petroleum and chemical assets, as well as steam and boiler feedwater piping (commonly referred to as FAC/HEP);

e) **Surveillance** and regular **Testing**, often facilitated through digital operator rounds via GE APM; and
f) **Health Assessments** from third-party consultants or other subject matter experts (SMEs).

These approaches, and others, are represented in Figure 2 below.

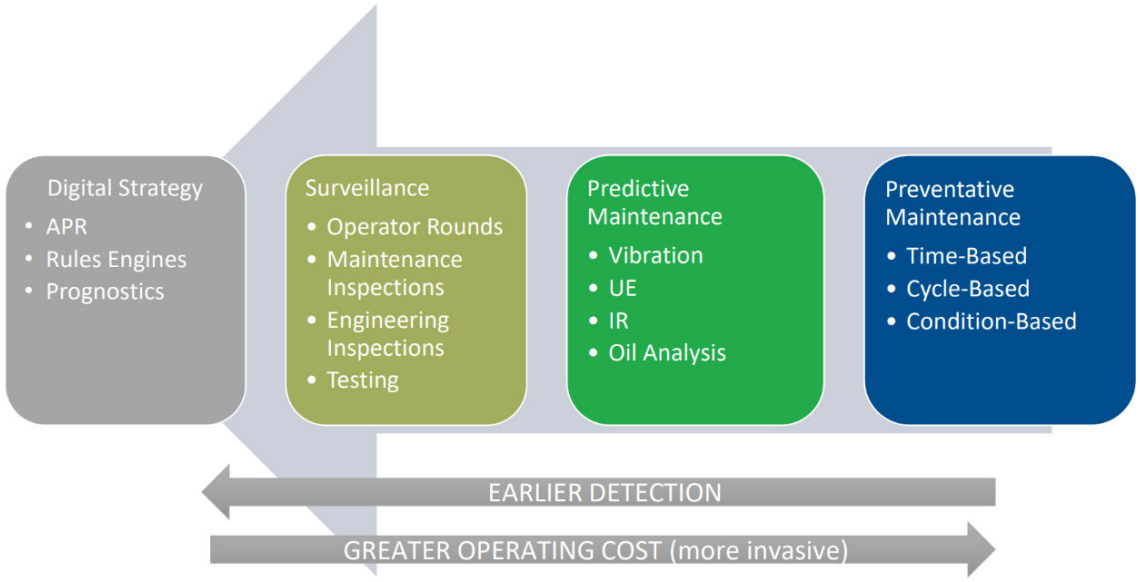


Figure 2: Maintenance Strategy Optimization

Moving to the left of Figure 2 often requires capital investment to establish, but ideally results in a reduction in preventative work which was not truly required, freeing personnel to work on higher value activities, and reducing risk of executing work that does not need to be done.

A Failure Modes and Effects Analysis (FMEA) can be performed on each asset to determine its failure modes, and guide which failure modes should be prioritized for mitigation. An FMEA is a component of a Reliability Centered Maintenance (RCM) approach. While NS Power does not often complete a full RCM for its assets, a "lite" version of this approach supported by FMEA has proven very effective for a number of asset classes.

Other AMP Elements

Scope, Criticality and Condition, as described in 6.3, are utilized and reviewed regularly through regular Risk Profiling and Risk Mitigation planning.

Other elements of the AMP including Risks and Opportunities evolve as the Strategy Committee matures, and becomes aware of trends or external factors which should be monitored for the asset grouping, including emerging technologies which may alter how an asset is managed, external factors which may drive requirements associated with the assets, planned obsolescence of asset components, or trends in asset performance which may need to be addressed.

These items are discussed in the Strategy Committee meetings, and captured in the AMP as deemed appropriate by the Committee.

6.3.Risk Profiles and Risk Mitigation Plans

Asset Management Mechanism

NS Power utilizes a 5x5 matrix for evaluating risk across all asset classes, as shown in Figure 3. Combined with risk mitigation options, it is often referred to as the Asset Management Mechanism. The matrix is defined on a 1 to 5 scale for Condition and a 1 to 5 scale for Criticality, when multiplied together produce a 1 to 25 risk score. Assets scoring greater than or equal to 15 are considered High Risk and require some form of risk mitigation. Assets deemed Medium-High Risk (10-12 score) will also be considered for mitigation.

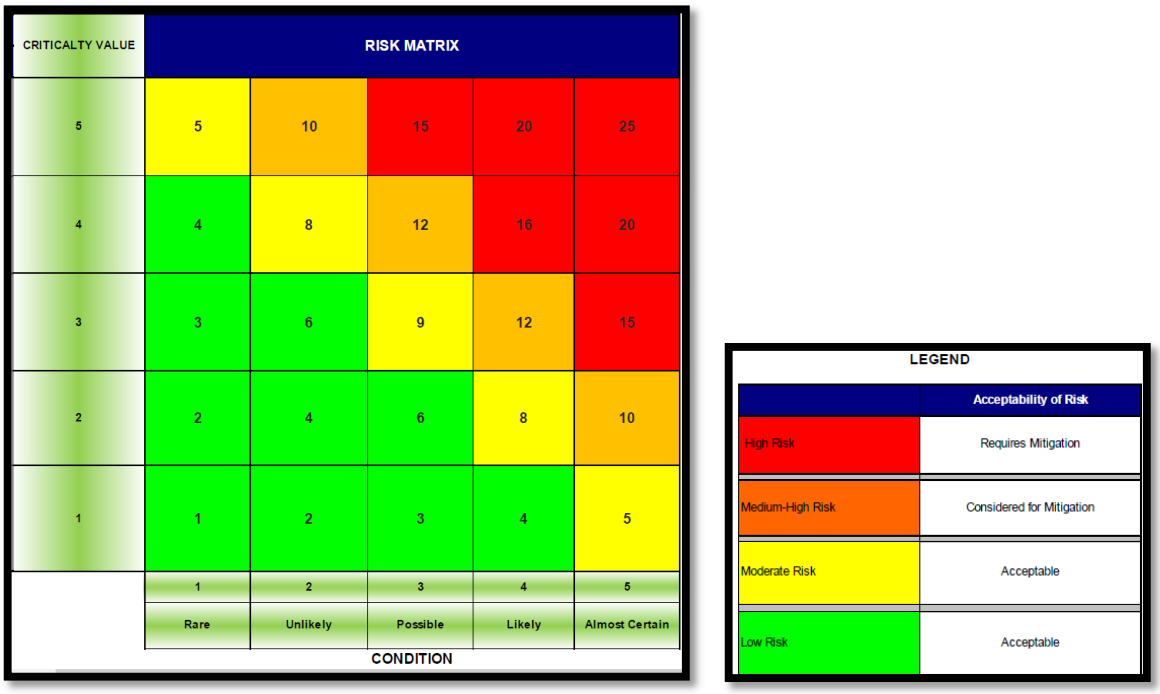


Figure 3: NS Power Risk Matrix from CEJC document

This matrix provides a starting point for the risk evaluation of assets. It is important to note that sole reliance on the risk matrix can result in “precision without accuracy”: the data available regarding asset condition may not be of sufficient quality, completeness, or from a long enough period to be utilized without Subject Matter Expert (SME) opinion, experience, and expertise. The Asset Management Mechanism is used to filter risks to those that require additional scrutiny and evaluation. Ultimately, a risk may be accepted, mitigated, or managed, regardless of its evaluated risk rating.

This consistent approach to risk evaluation allows for an enterprise-wide view and comparison of risks, to ensure NS Power is understanding and addressing the most pressing risks to the business. This

process is documented in the Capital Expenditure Justification Criteria (CEJC), maintained by Regulatory Affairs and approved by the Nova Scotia Energy Board (NSEB).

The condition criteria in the NS Power risk matrix can be defined in terms of probability of failure, as described in the CEJC and shown in Fig.4.

Condition Description	
Rare 1	Failure or occurrence is rare (0-10%). Available data, past experience and or subject matter expert input indicates an expected occurrence rate of less than 1 in 100 operating years.
Unlikely 2	Failure or occurrence is unlikely (11-25%). Available data, past experience and or subject matter expert input indicates an expected occurrence rate of less than 1 in 75 operating years.
Possible 3	Failure or occurrence is possible (26-75%). Available data, past experience and or subject matter expert input indicates an expected occurrence rate between 1 in 10 and 1 in 75 operating years.
Likely 4	Failure or occurrence is likely (76-90%). Available data, past experience and or subject matter expert input indicates an expected occurrence rate between once per year and 1 in 10 operating years.
Almost Certain 5	Failure or occurrence is almost certain (91-100%). Available data, past experience and or subject matter expert input indicates an expected occurrence rate of greater than once per year.

Figure 4: Probability definitions to support condition evaluation

The criticality criteria in the NS Power risk matrix can be defined in terms of consequence of failure, also as described in the CEJC and included as Figure 5 below. For additional information on Criticality Assessment, refer to NSPI-AMS-002.

Criticality (Based on Consequence)				CRITICALTY VALUE
Health & Safety	Environment	Business Sustainability	Consequence	
• Regulatory requirement breached. •Critical safety incident requiring support from external resources •Fatality or Permanent Disability.	• Regulatory requirement breached. • Loss of generating station or facility operating permit. • Critical liquid, chemical or particulate release with off-site or off-facility impact.	Business Sustainability Criticality Ranking is informed through factors such as replacement energy costs, Regulatory Requirements, SAIFI, SAIDI, DAFOR, System Upgrade Requirements, Code Requirements and Project Economics (payback period, NPV, Revenue Requirement).	Critical	5
• Major safety incident leading to JOHSC actions and controllable by internal resources. • Lost time Injury	• Corporate environmental target exceedence. • Major reportable environmental incident with off-site or off-facility impact.		Major	4
• Serious safety incident leading to JOHSC actions and controllable by internal resources. • Recordable injury, >1 medical Aid	• Serious reportable environmental release causing license exceedance and off-site or off-facility impact.		Serious	3
• Moderate safety incident controllable by internal resources and no JOHSC actions required. • Recordable injury, < 1 Medical Aid	• Moderate reportable environmental release without license exceedance and internal impact only.		Moderate	2
• Minor safety incident controllable by internal resources and no JOHSC actions required • First Aid Injury	• Minor non-reportable environmental release with internal impact only and no license exceedance.		Minor	1

Figure 5: Criticality Rating

The AMP for a given Asset Class will contain context and unique consideration for the assignment of Criticality, and assessment of Condition.

Asset Risk Assessment

As noted above, Criticality and Condition are utilized to assess the risk associated with an asset through the Asset Management Mechanism.

Generally, the criticality is assigned for an asset once, and does not change from year-to-year. There are exceptions when the criticality may change. For example, if redundant equipment is removed (resulting in higher criticality), or additional safety or environmental protections are installed for an asset to lower the potential consequences from a failure (resulting in lower criticality). Additionally, if there is a change of design or operation of an asset, the criticality may also need to be revisited.

The condition for a given asset relates to the probability that the asset will fail. Strategy Committees use available information from various sources to define a condition that is on the 1 to 5 scale. Information to inform the asset condition often includes, but is not limited to:

- Performance data, including any outages or disruptions to the asset's operation
- Health Assessments from third parties of subject matter experts
- Fleet Monitoring Data (PdP, PdM)
- Engineering Assessments
- Equipment history (age, last refurbishment, maintenance activities)

- Operating History (hours, cycles, etc.)
- Inspection information
- Maintenance Strategy compliance

The criticality and condition for an asset are then multiplied to define the risk level for the asset. Assets deemed to be high risk will be flagged as requiring risk mitigation.

Risk Mitigation and Options Analysis

Cost minimization is a key consideration whenever NS Power is developing a risk mitigation plan for a given asset. The aim is to do the right work at the right time to deliver the right level of service. Said another way: choose the right risk mitigation approach at the right time to meet the asset mission.

For each high-risk asset, Strategy Committees assess the asset risk, then consider the asset mission, or anticipated utilization of the asset to meet organizational goals. Said differently, the approach to risk mitigation is a function of criticality, condition, and an understanding of the mission of the asset.

The Committee then determines the most appropriate risk mitigation, typically from the following options:

1. Operating Limitations – adjusting maximum reservoir levels, limiting cycles, establishing temperature controls for ops to manage, etc.
2. Re-design – can control logic be changed to eliminate outage event? Can modification to design be made to add new functionality (e.g. winterization or bleed valves, etc.) that decreases the risk for failure.
3. Monitoring & Diagnostics – changing or increasing the existing practice associated with anomaly detection (PdP), vibration monitoring, gas monitoring, etc.
4. Critical Spares – run the equipment to failure, but have a spare on hand for a quick replacement to limit downtime and therefore the impact of failure
5. Refurbishment – can we extend the life of the asset with a refurbishment, rather than replace
6. Replacement – replace with a new asset

Multi-year Investment Plans

One deliverable of the Strategy Committee, for the sustainment of the assets within the Strategy Committee's purview as well as for financial and resource capacity planning, is to develop a long-term investment plan for the assets where possible. These plans rely on an understanding of the total number of assets within the asset class, their current condition from the risk assessment process, as well as a knowledge of the typical lifespan and failure rates for the assets and expected future utilization. For

example, a transformer installed after 1978 is expected to have a life of 50 years. This information allows for the generation of the long-term investment profile for the asset.

6.4.Knowledge Transfer

In keeping with NS Power's focus on diversity, equity and inclusion, by design, the Strategy Committees are populated with resources from across the business with diverse experiences and expertise, including operations, asset management, maintenance, environmental services, capital projects, planning, engineering etc. This provides a unique opportunity cross-functional committees to enable sharing of ideas and experiences with representation from many areas of the business. The following are examples of opportunities for knowledge sharing within the Strategy Committees.

Event Reviews

NS Power maintains an incident reporting database, which indirectly contains a log of asset failures with corrective actions, and some of these incidents are learnings applicable to locations and individuals across the Strategy Committee. Strategy Committee members will share information and learnings from these incidents with the Strategy Committee meetings, when possible.

In addition, the EAM Risk & Reliability Team tracks generation equipment evens through **Generation Equipment Reporting (GER)** in support of external benchmarking, and North American Reliability Council (NERC) compliance. There may also be learnings or corrective actions to be identified from these outages or derate events that are reviewed at the Strategy Committee level.

Root Cause Analysis Reviews

Some incidents may result in a Root Cause Analysis (RCA), Safety or Joint Occupational Health and Safety Committee (JOSHC) investigation. Reports from these investigations and the subsequent recommendations are to be reviewed with the applicable Strategy Committee(s).

Recommendation Reviews

The GE Asset Performance Management (APM) software is the central repository for a number of types of recommendations, but particularly those generated through:

- RCAs
- Dam Inspections
- Technical Advisories (TAs)
- NERC activities (for Power Production, such as vulnerability assessments)

Individuals are assigned the recommendations are notified via email, and updates to the recommendations come back through the EAM team until the recommendations are closed. Open recommendations may be periodically reviewed by the applicable Strategy Committee, to help confirm prioritization and timeline for completion.

Training

The Strategy Committees can provide a forum for various types of training and awareness.

Technology/Vendor Reviews

Third party vendors and service providers may be invited to Asset Strategy Committee meetings, which provides participants with an opportunity to learn about new tools and technologies or the capabilities of a particular vendor.

6.5.Strategy Committee Scorecard

The Asset Strategy Committee Manager will evaluate the Strategy Committees annually, and populate a scorecard to communicate their maturity, and progress towards development of deliverables, and implementation of strategic asset management activities.

Appendix B contains the criteria for assessment of the Strategy Committees.

7. Forms/Templates to be used

See Appendix A for the AMP Template.

8. References

Internal References

- NS Power Strategic Asset Management Plan (SAMP)
- NSPI-AMS-002 – Criticality Assessment
- QP-E002 – Root Cause Analysis
- QP-G044 – Generation Equipment Reporting

External References

- None

9. Change History

Revision no.	Effective Date	Significant Changes	Revised By
0	Jan.1, 2023	This is a new procedure	R. Doiron
1	Jun.9, 2025	General revision, issued for use	E. MacNeil

APPENDIX A: Asset Management Plan (AMP) Template

Throughout this template, **bold/blue** font will be used to provide samples from existing AMPS, though may not align with the last revision of the referenced AMP.

* * *

Asset Management Plan

Strategy Committee: Committee Name
Last Updated: Review Date

1. Overview

This section provides context for the asset class/grouping. For example:

NS Power operates and maintenance a group of assets covered by the Air Quality Strategy Committee, and these assets are critical to maintaining compliance with the NS Environment Act, and its associated Regulations. Operation and maintenance of the air pollution control equipment across the generation fleet is within the purview of the various Nova Scotia Industrial Approvals to Operate, with the following condition:

> ***The Approval Holder(s) Shall ensure that all pollution control equipment at the Site and Facility is maintained, operated and functional to ensure compliance with the Act and this Approval.***

2. Scope

The scope provides a more detailed listing of the assets overseen by the Strategy Committee, and provides clarity around the boundaries for the AMP. For example:

The following air pollution control equipment are included within the scope of the Air Quality Strategy Committee:

- **Powdered activated carbon (PAC) injection systems**
- **Calcium chloride injection systems**
- **Electrostatic Precipitators**
- **Baghouses**
- **Low-NOx combustion firing systems (LNCFS)**
- **Sprint NOx control systems for the LM6000s**

This section may also include a summary of the overall characteristics of the asset class, and should clarity how the asset class contributes to the achievement or organizational objectives.

An asset list may not be specifically included here, as the System of Record for equipment is the Computerized Maintenance Management System (CMMS) - which for Power Production is DirectLine,

and Maximo for Energy Delivery, though an asset list should be easily extractable from the System of Record to enable the work of the committee.

3. Asset Group Objectives

While organizational objectives indirectly guide the objectives for an asset class, specific considerations here may be related larger asset context such as retirements, modernization or emerging risks. For example, an objective from the Transmission Reliability Team:

- **Enhance climate resilience and wildfire mitigation**

This section may also be used to capture the "roadmap" for the team. As noted in Section 6.1, each committee is on a unique development path, and this section shall be used to capture their development goals.

4. Asset Risk Ranking

As further described below in Section 6.3, NS Power utilizes the Asset Management Mechanism to evaluate the risk associated with an asset, consider that with a view to asset mission, and determine if mitigating actions are required. The inputs into Mechanism are Criticality and Condition.

4.1. Criticality Assessment

This sub-section is used to summarize the criticality of the assets under the purview of the committee, including specific factors or unique location specific considerations. The System of Record for asset criticality is the CMMS, though the AMP provides clarity regarding consideration for this evaluation, and may summarize criticality by groupings. For example, a high-level example from the Transmission Strategy Committee:

Criticality Factors

- **Voltage level and load importance**
- **Redundancy and restoration time**
- **Environmental and safety exposure**
- **Customer and regulatory impact**

And a more detailed example from the from the Dam Structures Strategy Committee, which clarifies alignment with an industry classification as well.

CDA Dam Classification	Criticality Rating	Population at Risk	Health & Safety	Environment and Cultural Values	Infrastructure and Economics
Extreme	5	Permanent	> 100	Major loss of critical fish or wildlife habitat. Restoration or compensation in kind impossible.	Extreme losses affecting critical infrastructure or services […]
Very High	5	Permanent	≤ 100	Significant loss or deterioration of critical fish or wildlife habitat. Restoration or compensation in kind possible but impractical.	Very high economic losses affecting important infrastructure or services […]
High	5	Permanent	≤ 10	Significant loss or deterioration of important fish or wildlife habitat. Restoration or compensation in kind highly possible.	High economic losses affecting infrastructure, public transport, and commercial facilities.
Significant	4	Temporary Only	Unspecified	No significant loss or deterioration of fish or wildlife habitat. Restoration or compensation in kind highly possible.	Losses to recreational facilities, seasonal workplaces, and infrequently used transport routes.
Low	3	None	No loss of life	Minimal short-term loss. No long-term loss.	Low economic losses: area contains limited infrastructure or services.

See NSPI-AMS-002 for more detailed information regarding Criticality evaluation.

4.2. Condition Assessment

This sub-section clarifies what how the Committee evaluates the health of assets within its purview. For some asset groupings, this may be a formula. For others, the evaluation may be more qualitative. The approach will depend on the availability and quality of data and information such as PM compliance, operating data, test datasheets, etc. An example from the Transmission Strategy Committee:

Condition Factors

- **Inspection results (foot patrols, drones, LIDAR)**
- **Age, corrosion, and structural integrity**
- **Weather and wildfire exposure**
- **Maintenance and failure history**

Where the committee oversees a collection of different assets, each asset may have different considerations. For example, from the Chemical Strategy Committee:

- **Chemical Piping - A risked-based inspection (RBI) program is developed for full strength acid and caustic piping systems (93% sulfuric acid, 50% caustic). Refer to maintenance strategy section for details**
- **ROs/EDI - Various equipment such as the RO membranes and EDI skids have a combination of online performance data through DCS/PI and chemical technician manual readings that determine the asset health. This data is also used to determine cleaning frequency of the RO membranes. Monitoring of these assets drive future capital investment decisions for cell and membrane replacements.**

5. Risks and Opportunities

This section captures emerging risks or opportunities identified and monitored by the Strategy Committee. These emerging items may have an impact on operating or maintenance strategies for the in-scope assets. Risks may include anticipated changes to regulations, difficulties sourcing materials, emerging trends in performance the Committee wishes to monitor, or issues identified through Root Cause Analysis (RCAs), Audit or other sources.

From the Distribution Strategy Committee, some examples of risks include:

Category	Risk	Description	Mitigation
Cybersecurity & Data Overload	Increased connectivity and data from sensors and smart devices	System vulnerability, data management challenges	Cybersecurity protocols, data governance, AI-based analytics
Inspection Gaps	Manual processes and limited coverage of some asset types	Incomplete condition data, delayed interventions	Expansion of inspection programs, transition to internal resources […]

Examples of opportunities from the same Strategy Committee include:

Opportunity Area	Description	Benefits
Grid Modernization	Deployment of DSCADA, ADMS, AMI, and connected asset strategies	Enhanced visibility, faster restoration, predictive maintenance
Advanced Analytics	Use of AI, GIS dashboards, and feeder risk scoring	Improved prioritization, optimized capital planning
Vegetation Management	Satellite imaging and risk profiling	Reduced outage frequency, proactive trimming

The Strategy Committee shall consider mitigation or monitoring plans for these entries as they deem appropriate.

6. Asset Group Strategy

The asset group strategy includes both operating and maintenance elements, and describes the regular activities and processes undertaken by NS Power to monitor and manage an asset such that it meets the asset and organizational objectives.

6.1. Operating Strategy

This section identifies unique operating constraints or considerations for the asset class/group, including regulations which may govern their operation, considerations for starts/stops, etc. This section may also include performance monitoring. From the Chemical Strategy Committee:

> **Aside from environmental requirements outlined in the operating approval for each plant, the water treatment plants must be able to produce water quality sufficient for safe and reliable**

boiler operation. The cycle chemistry limits for each plant are based on the Electrical Power Research Institute (EPRI) guidelines, and vary by plant. Cycle chemistry limit charts are summarized here: Cycle Chemistry Limits. The cycle chemistry charts include required timeframes for bringing units back to within specification. Alarm points for various key chemistry limits are in place at each plants respective DCS. Should demineralized water supply not be available from the water treatment plant, third party demineralized water mobile treatment trailers are utilized to ensure operations can still meet their cycle chemistry limits.

Gross contamination procedures are in place for each of the plants should major chemical contamination occur. These procedures and other lab/operational procedures for each plant can be found here: Operating Procedures

6.2.Maintenance Strategy

This section refers to all activities designed to monitor or sustain asset performance including, but not limited to:

- preventative maintenance (PMs)
- condition-based maintenance (PDM, such as vibration analysis, infrared examination, etc.)
- predictive analytics (PDP)
- spares strategy
- operator rounds
- regular testing
- inspection

It is not necessary to detail out each activity here, but to identify to sufficient depth the type of activities being executed, and where/how they are managed. Detailed execution plans and monitoring are often contained and completed in the System of Record, or via the Program Manager where applicable.

Some assets also have a Quality Process (QP) which main contain significant asset strategy information. From the Boiler Strategy Committee:

Boiler Equipment Maintenance Guidelines are captured in the following quality processes:

- **QP-G004 Boiler Tube Repairs**
- **QP-G005 Boiler Safety and Pressure Relief Valves**
- **QP-G007 Boiler Header Inspection**
- **QP-G015 Sootblowers**
- **QP-G029 Boiler Waterwall Tube Sampling and Analysis**
- **QP-G064 Foreign Material Exclusion**

7. Review Frequency

The Strategy Committees define their AMP review frequencies, though this is typically annually.

8. References

References should include any internal and external resources used to inform and guide the AMP. This may include industry standards from ASME or IEEE, relevant Regulations, reports from industry organizations such as CEATI or EPRI, Strategic documents such as the 5-year Reliability Plan etc. The Committee may also cite audit reports or RCA reports which were of particular interest.

APPENDIX B: Strategy Committee Scorecard Criteria

Strategy Committee Function	1 – Not Functional	2 – Developing	3 – Implemented	4 – Advanced
Strategy Committee Status	No meetings in last 12 months	Only 1 meeting in last 12 months	Two meetings in last 12 months	3+ meetings in last 12 months
Annual AMP Review	AMP not reviewed	Portions of AMP reviewed	Full AMP reviewed	Full AMP reviewed, captured in meeting records or revision to AMP
Strategy Committee Membership	No team lead and/or limited cross functional representation	Team lead in place	Team Lead in place and members from varied roles and locations.	Diverse team from all major business units with contributions from all members
Formalize AMP	AMP not yet documented via template	AMP drafted	AMP finalized with maintenance and operating strategy deployed	AMP includes emerging risks and opportunities
Maintenance Strategy Optimization	No maintenance strategy. Equipment may be operated until failure.	Limited maintenance programs in place, often time-based. No oversight of maintenance compliance.	Detailed maintenance program with aspects of condition-based monitoring (PdMs such as VA, IR, UE, MCM, Oil analysis). Some enhanced monitoring equipment installed, or tools deployed.	Highly advanced maintenance program utilizing PDP and Surveillance techniques to gather equipment condition information real-time. Program support by instrumentation to monitor and alert on potential failure mechanisms.
Asset Maintenance Strategy Compliance	No compliance monitoring	Some elements of maintenance strategy have compliance reviews	All elements of maintenance strategy have compliance reviews	Action plans developed for risks/opportunities identified through compliance review

Strategy Committee Function	1 – Not Functional	2 – Developing	3 – Implemented	4 – Advanced
Risk Profile	No risk ranking of assets.	Risk ranking of some critical assets in place. Limited history to measure risk ranking effectiveness.	Detailed risk ranking process in place for assets.	Proven risk ranking utilized for several years to effectively manage risk.
Risk Mitigation	Risks not being mitigated	Risk mitigation not optimized, leading to overspend or investment in lower risk assets	Various risk mitigation options (capital, refurb, spares, re-design, operating limits) being utilized to meet most asset reliability targets.	Full range of risk mitigation options (capital, refurb, spares, re-design, operating limits) being utilized to meet or exceed asset reliability targets.
Investment Plan	No investment planning in place	Single year investment planning in place	5 or 10-year investment plan in place for some assets	10-yr+ investment plan in place for assets and good success in meeting plan
Critical Spares	Critical spares not defined	Spare components at miscellaneous locations, with no inventory	Inventory readily available of available critical spares	Risk-based assessment completed to determine number and type of critical spares to be made available, and spare inventory is maintained
RCAs	Completed RCAs associated with the asset class/group not reviewed	Completed RCAs reviewed for asset class/group	Completed RCAs and open recommendations reviewed	Completed and Open RCAs reviewed, open recommendations reviewed

Strategy Committee Function	1 – Not Functional	2 – Developing	3 – Implemented	4 – Advanced
Committee Action/Recommendation Management	No formal process for managing Committee actions	Committee action plan managed using inconsistent processes	Committee actions managed in consistent framework	Committee actions managed in consistent framework and consistently completed in a timely manner
Performance Assessment	Performance of assets not monitored	Operational data periodically collected to assess asset performance	Real-time assessment of asset performance against targets	Real-time assessment of asset performance, as well as tracking of KPIs for the asset, and automated recommendations when performance drops below targeted level
Enhanced and/or Remote Monitoring Deployed	No remote visibility into asset operation	Some parameters available remote, but missing some key parameters	Remote access to key asset operational parameters	Complete remote access to key asset operational parameters and tool in place to monitor and alert of excursions outside the norms

Request IR-4:

Does NS Power intend to carry out both Project CI C0067908 (refractory replacement) (M12373) and C0067906 (boiler refurbishment) (M12372) concurrently?

(a) If so, please explain why the projects have been planned separately.

(b) If not, please explain why not.

(c) Please explain why Boiler refractory projects are separated from other boiler refurbishment projects.

Response IR-4:

(a) While both projects are planned for the same outage window, they are managed separately to allow for:

- Clear scope delineation
- Independent cost tracking
- Focused execution planning

This separation ensures that each project can be evaluated and approved based on its own technical and financial merits.

(b) Not applicable.

(c) NS Power has used this approach consistently in the past and has separated boiler-related work into distinct capital projects when different components of the boilers are being addressed. This allows for better historical cost tracking on how / where NS Power invests in its assets and provides more clarity to the Board and intervenors when looking at historical spend / trends in investment. Boiler refurbishment projects at thermal plants are generally focused on boiler tube replacements. In the event that investment is required on different components within the boilers (burner nests for example, similar to C0073965 TRE5 Burner Nest Waterwall Tube Replacement which was filed with the NSEB as a

separate item from the TRE5 Boiler Refurbishment 2025 project), a separate capital project is initiated to allow for improved historical tracking of boiler investments.

Boiler refractory projects are separated from other boiler refurbishment projects because they involve a distinct scope of work compared to boiler pressure parts. At Point Aconi, boiler refurbishment focuses on metallic tube components such as division walls, superheaters, reheats, and economizers, which are subject to thermal fatigue, corrosion, and erosion and require specialized welding and tube replacement activities. Refractory, by contrast, is a non-metallic lining material used to protect the boiler structure from high temperatures and abrasive circulating bed material, and its inspection, installation, and refurbishment processes are fundamentally different from those required for pressure part work.

Boiler refurbishment projects at thermal plants are generally focused on boiler tube replacements. In the event that investment is required on different components within the boilers (burner nests for example, similar to C0073965 TRE5 Burner Nest Waterwall Tube Replacement which was filed with the NSEB as a separate item from the TRE5 Boiler Refurbishment 2025 project), a separate capital project is initiated to allow for improved historical tracking of boiler investments.

Refractory is installed in key areas of the Point Aconi CFB boiler, including the two cyclones, two combustor-to-cyclone crossover ducts, two cyclone-to-back pass crossover ducts, two loop seal cans, four cyclone return legs, and the lower combustor. These linings degrade due to spalling, chemical attack, and abrasion. Although refractory and tube replacement work are both scheduled and executed during the same planned outage, the scope of refractory work is unique and requires different materials, contractors, and quality control measures. Defining refractory projects as separate capital projects within the outage allows NS Power to clearly track costs and service life specific to refractory systems, while maintaining consistency and transparency in regulatory reporting.

Request IR-5:

Based on Nova Scotia Power's historical data:

(a) What is the typical service life expected from the proposed refurbishment?

(b) Could you please specify the date of the most recent refurbishment or replacement of the same refractory system?

(c) If a previous refurbishment was completed, what was the anticipated service life at the time of that work?

Response IR-5:

(a) Based on historical data and operational experience at Point Aconi, the typical service life expected from the proposed refractory refurbishment is approximately 3 to 5 years, depending on operating conditions and wear rates. Refurbishments are generally concentrated in high-wear areas, whereas refractory in lower-wear zones has remained in service for over 20 years. The annual inspection and replacement strategy currently in place is designed in consideration of these expectations.

(b) The most recent refurbishment of the refractory system was completed during the 2024 maintenance outage under CI C0060244. The work involved targeted replacement of specific refractory components based on inspection findings. Each year's refurbishment addresses different components as required by the inspection results. Previously replaced components continue to perform within their expected service life of approximately 3 to 5 years, depending on operating conditions and wear rates. The scope of work is determined by component condition and varies annually.

(c) At the time of the 2024 refurbishment, the anticipated service life for the replaced components was also 3 to 5 years, consistent with NS Power's condition-based maintenance approach and risk assessment methodology.

Request IR-6:

Reference to 2025 10-Year System Outlook (M12386), page 17 of 64 (Figure 7), NS Power notes that Point Aconi will be retired on 2029/2030.

(a) How does the proposed boiler refractory system refurbishment align with NS Power's goal of achieving 80% renewable energy generation by 2030?

(b) Please explain NS Power's regular maintenance strategies and procedures for Point Aconi.

(c) Does NS Power intend to adjust its maintenance strategies in light of the planned retirement?

(d) If so, please outline the revised maintenance strategies and provide a detailed plan covering the period from 2025 to 2030.

(e) If not, please explain the reasoning for maintaining the current maintenance approach.

Response IR-6:

(a) The proposed boiler refurbishment is intended to ensure the safe and reliable operation of the boiler through to its planned retirement in 2029/2030. While the facility is scheduled for retirement to support the transition toward 80 percent renewable energy generation by 2030, maintaining operational integrity in the interim is critical to system reliability. The refurbishment supports NS Power's broader energy transition strategy by ensuring that Point Aconi remains a dependable source of generation during this transitional period.

(b) NS Power's Asset Management Methodology, governed by the Company's Strategic Asset Management Plan and implemented through the Asset Strategy Committee Process (NSPI-AMS-001), provides a structured, enterprise-wide approach to managing asset risk and reliability. Asset Strategy Committees, composed of subject matter experts, engineers, operations staff, and other stakeholders, develop and maintain Asset Management Plans (AMPs) for critical asset classes (see NSEB IR-3 Attachment 1).

In line with this methodology, the Point Aconi Generating Station undergoes an annual planned maintenance outage. During the outage, all major boiler components including the refractory are inspected for structural integrity. Refractory components are refurbished or replaced only if they are not expected to remain serviceable until the next scheduled outage. This ensures that maintenance is risk-informed, targeted, and aligned with NS Power's broader asset management strategy.

(c) NS Power will continue to conduct an annual planned maintenance outage through to the unit's retirement, in part to inspect the refractory and ensure it will not fail during the operating year. A refractory failure could create a hot spot on the boiler casing shell, potentially forcing an unplanned outage. As such, only those refractory sections that are not expected to remain serviceable until the next inspection interval are replaced.

(d) The boiler refractory maintenance strategy has been revised to focus on annual inspections, with refurbishment or replacement limited to sections projected to fail before the next planned inspection interval. No complete refractory replacements are planned prior to plant retirement.

(e) Not applicable. Please refer to part (d).