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Request IR-66:

Please refer to NS Power’s response to IR-7 (a-g) which states, “NS Power does not assess reliability by specific customer classes or customer types. Reliability is tracked on both a system-wide basis and on an individual feeder basis. Typically, multiple different customer classes and customer types could would be represented on a single feeder. NS Power can identify the rate class of a given customer on each feeder; however, it does not currently assess reliability performance using rate class information and does not currently plan to do so.”

(a) Please identify the feeder IDs that serve Mi’kmaq of Nova Scotia communities (as well as other customers on those feeders).

(b) Please provide Total Investments (\$), Circuit Kilometres Addressed, CKAIDI, and CKAIFI on average for those feeders that serve Mi’kmaq of Nova Scotia communities (as well as other customers on those feeders), on an annual basis from 2020 to 2025. Please provide the data in the format requested in the attached Excel file titled Synapse_IR_M12558_Set 2 Data Template 2026.05.22.xlsx, in the IR-66 Data Template tab.

(c) Please provide Total Investments (\$), Circuit Kilometres Addressed, CKAIDI, and CKAIFI on average for feeders that do not serve Mi’kmaq of Nova Scotia communities, on an annual basis from 2020 to 2025. Please provide the data in the format requested in the attached Excel file titled Synapse_IR_M12558_Set 2 Data Template 2026.05.22.xlsx, in the IR-66 Data Template tab.

Response IR-66:

(a) NS Power has identified the following 30 feeders totalling approximately 3,900 km (of more than 400 circuits and over 28,000 km total in NS Power’s system) that supply

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Mi'kmaw communities in whole or in part. The portion of a feeder supplying a community may vary significantly, so direct comparisons between this subset of circuits and all others would not necessarily fully reflect the performance experienced by individual customers within those communities. Furthermore, the differences between these individual feeders (including variation between feeder sections, branch lines, etc.) are also not captured by this analysis. The Company notes that the list below is based solely on community boundaries as currently understood and should not be considered exhaustive of all customers identifying as Mi'kmaq.

Feeders		
103W-311	13V-303	55V-323
103W-312	15N-401	57W-401
104S-311	15N-402	58H-421
111S-311	15N-403	59C-402
111S-312	1N-402	67C-412
111S-313	1V-443	82V-401
111S-314	1W-411	82V-422
113H-434	20V-311	88H-402
11S-411	4C-441	88W-322
12V-304	4S-333	91W-411
137H-412	50N-415	96H-411

(b-c) Please refer to Attachment 1. NS Power notes that the total investments per year are only those that can be assigned to specific feeders and excludes programs and routines administered at a provincial level. Actual investments across the system are higher in each year. Further, the Company does not track circuit kilometers addressed for all investments (many of these projects involve targeted equipment replacements and would not have kilometers associated with the work) and has accordingly left these cells as "N/A".

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2025-2029 Five Year Reliability Plan Review IR-66
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Request IR-67:

Please refer to NS Power’s response to IR-11 (b) which states, “The concerns raised through engagement activities with customers have been incorporated into the development of the Five-Year Reliability Plan primarily by providing further context that can be used to inform NS Power’s asset management framework. Feedback from customers on their experience would assist in better understanding key areas of concern that can be incorporated with other key condition and criticality factors such as historical reliability performance.

Additionally, customer feedback regarding affordability and potential rate impacts has informed NS Power's approach to the pace of reliability performance improvement with costs, as discussed previously.”

(a) Please summarize the concerns raised through engagement activities with customers.

(b) Please describe how these concerns provided further context to inform NS Power’s asset management framework.

(c) Please summarize the customer feedback NS Power received with regards to affordability and potential rate impacts.

(d) Please describe how this feedback informed NS Power’s approach to the pace of reliability performance improvement.

Response IR-67:

(a) The primary concerns of customers through engagement activities (from the 2025 Performance Standards report) are localized tree trimming and vegetation management, and concern for equipment upgrades. These are aligned with the main pillars of the Five-Year Reliability Plan.

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1 (b) Customer concerns are not included directly in the asset management framework; however,
2 they can help identify reliability risks through highlighting additional information on asset
3 or vegetation condition.

4
5 (c) Generally, public sentiment about rising costs and inflation across many expenditures,
6 including shelter, food, oil/gas, and electricity was noted. This feedback aligns with what
7 electric utilities across Canada are hearing from customers and is consistent with the input
8 provided by formal Nova Scotia customer stakeholders such as the Consumer Advocate
9 and Affordable Energy Coalition.

10
11 (d) NS Power's investment plans are designed and optimized to effectively manage risk and
12 to balance that against affordability for customers. The Five-Year Reliability Plan
13 considers affordability by pacing investments at a sustainable rate. While the Company
14 could accelerate progress with higher investment levels, the plan represents a measured
15 approach that aligns the pace of work with customer impact. More specifically, customer
16 feedback may also result in adjustments at a local, or operational level, where NS Power
17 may adjust the scope or order of localized work, but not the overall investment portfolio of
18 the program.

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Request IR-68:

Please refer to NS Power’s response to IR-14 which states, “NS Power’s participation in working groups within Electricity Canada along with member utilities across Canada as well as reviews of and discussions on the best practices of these utilities provides the Company with valuable insight into how other Canadian utilities are targeting reliability improvements.”

(a) Please provide information on the best practices of these utilities with regards to reliability improvements.

(b) Please identify which best practices were incorporated into NS Power’s Five-Year Reliability Plan and how they were incorporated.

Response IR-68:

(a) Best practices for reliability improvement identified through NS Power’s participation in industry groups like Electricity Canada, Centre for Energy Advancement through Technological Innovation (CEATI), Electric Power Research Institute (EPRI), and direct engagement with peer utilities generally include the use of risk-based asset management approaches that prioritize investments based on asset condition, performance, and criticality. More specifically, best practices that have been identified, validated, and refined as part of these engagements include, but are not limited to:

- Targeted vegetation management and corridor widening programs to address key outage drivers such as tree contacts. Collaboration with other utilities through CEATI has helped NS Power to identify new condition assessment technologies like satellite image analysis and define criteria for right-of-way widening.

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- Storm hardening and targeted equipment replacement programs focused on high-risk assets. Continued engagement with the Canadian Standards Association (CSA) has led to the adoption of new distribution equipment standards better able to resist stresses from a changing climate.
- Deployment of advanced protection and automation technologies such as reclosers and fault isolation systems to reduce outage frequency and duration. Discussions with other Canadian utilities through participation in Electricity Canada working groups provided valuable insights into the application of TripSavers for protection improvement.
- Grid modernization initiatives that enhance system monitoring, communications, and operational visibility. NS Power leverages membership in EPRI to learn from participating utilities, including comprehensive guidance documents, tailored advisory, and technical support arrangements to advance more specialized, in-depth, or unique areas of work.

Identification, review, and adoption of these practices are supported by NS Power subject matter experts as appropriate and are subject to ongoing data analysis and continuous improvement processes that integrate new or evolving best practices along with inspection results, outage performance data, and lessons learned into planning and execution.

- (b) NS Power's Five-Year Reliability Plan incorporates these best practices through its three core program areas: Storm Hardening – Vegetation Management, Storm Hardening – Targeted Equipment Replacements and Upgrades, and Advanced Grid Modernization. As discussed in part (a) above, ongoing engagement with these groups and utilities occurs across the scope of the Five-Year Reliability Plan, and results in the applications of best practices in technology, data analysis, and design among other areas. Best practices represented in the Five-Year Reliability Plan include:

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- 1 • The vegetation management program reflects industry best practices through
2 expanded rights-of-way, targeted tree trimming, and data-driven prioritization
3 aimed at reducing tree-related outages.
4
- 5 • The targeted equipment replacement and upgrade program applies risk-based asset
6 management principles by focusing on the replacement and improvement of aging
7 or high-risk infrastructure, while also deploying protective devices to reduce outage
8 frequency and improve restoration times.
9
- 10 • The Advanced Grid Modernization program aligns with industry practices through
11 investments in automation, remote monitoring, and enhanced system control to
12 improve fault detection, isolation, and service restoration capabilities.
13

14 Collectively, these programs are informed by data- and risk-based decision-making
15 processes that use asset condition, historical performance, and outage analysis to prioritize
16 investments and maximize reliability improvements.

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Request IR-69:

NS Power states in its response to IR-16 that “Reactive investments address assets that have failed or are at imminent risk of failure based on lagging indicators and require timely intervention to restore service, maintain safety, or ensure regulatory compliance.” Please provide a definition for “imminent risk of failure” and explain how NS Power determines if assets are at “imminent risk of failure”.

Response IR-69:

An asset is considered to be at “imminent risk of failure” when available condition, performance, or operational information indicates that failure is likely in the near term or within 1 year without intervention. Through the asset management mechanism imminent risk of failure is categorized as a 5 on the condition rating.

This determination is based on lagging indicators and observed asset condition, including evidence of active deterioration or damage, abnormal performance, recurring faults, or conditions exceeding acceptable limits. NS Power evaluates these factors through inspections, performance monitoring, and engineering assessment, and applies risk-based prioritization considering asset criticality and likelihood of failure.

Where these indicators demonstrate an unacceptable risk to safety, reliability or compliance, the asset is classified as being at imminent risk of failure and addressed through reactive investment.

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1 **Request IR-70:**

2
3 **Please refer to the table in NS Power's response to IR-17.**

4
5 **(a) Please provide data for a longer time period (2005 through 2026) as shown in the**
6 **attached Excel file titled Synapse_IR_M12558_Set 2 Data Template 2026.05.22.xlsx,**
7 **in the IR-70 Data Template tab.**

8
9 **(b) For years with reactive investments, does NS Power defer proactive investments from**
10 **its most recent ACE Plan to the next year such that the total planned investments**
11 **(inclusive of reactive and proactive investments) remain the same as what was**
12 **included in its ACE Plan? Please explain.**

13
14 **Response IR-70:**

15
16 **(a) Please refer to Attachment 1. NS Power's capital accounting software (PowerPlan) only**
17 **goes back to 2008; therefore, Attachment 1 does not include spend between 2005-2007.**

18
19 **(b) There are reactive investments made in all years, and an estimate of how much reactive**
20 **work will occur is included in the Annual Capital Expenditure Plan. NS Power does not**
21 **manage its capital plan in a way to invest a targeted amount of capital. If significantly more**
22 **reactive work occurs in a given year compared to the budgeted amount (i.e., a significant**
23 **storm event) then proactive work may be deferred due to a lack of resources available to**
24 **complete the work. In these cases, the risks associated with the proactive project are**
25 **assessed and that project is only deferred if the risks are deemed acceptable or another risk**
26 **mitigation approach is acceptable.**

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2025-2029 Five Year Reliability Plan Review IR-70
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1 **Request IR-71:**

2
3 **Regarding NS Power's response to IR-17, please explain how reactive reliability costs are**
4 **collected from customers (i.e. the proceeding in which they are requested and authorized for**
5 **recovery and when they are recovered).**

6
7 Response IR-71:

8
9 Reactive reliability costs are recovered from customers in the same manner as proactive reliability
10 costs. The only difference is that in some cases, reactive reliability investment may be submitted
11 for NSEB review after the work is complete via an individual capital project application. This is
12 only in certain cases, as the majority of reactive reliability investment (primarily completed
13 through the capital routine program) is submitted for approval proactively as part of the Annual
14 Capital Expenditure Plan.

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1 **Request IR-72:**

2
3 **Please refer to NS Power’s response to IR-18 which states, “Specific projects had not been**
4 **defined for 2026–2029, at the time of filing the Five-Year Reliability Plan. Investment levels**
5 **for these years therefore reflect high-level program budgets. Where investment is shown in**
6 **the Plan for individual sub-programs, those amounts were derived by:**

- 7
8 • **determining each sub-program’s relative share of the total program investment in**
9 **2025; and**
10
11 • **applying that same proportion to the program-level investment totals for the 2025–**
12 **2029 planning period.”**
13

14 **Does NS Power track the condition of assets to facilitate projections of which assets may**
15 **reach their end of life, fail, or require upgrade for reliability purposes within the next 1 year,**
16 **3 years, and 5 years (as an example)? If so, please explain. If not, why not?**

17
18 **(a) Does NS Power anticipate the need for any particularly large reliability investments**
19 **(>\$1 million) in the 2027-2031 planning period? If so, what are those investments and**
20 **how are they accounted for in the Reliability Plan?**

21
22 **(b) Please explain how NS Power determines when feeders with a criticality score of 5**
23 **and a condition score of 4, 3, 2, and 1 will likely require reliability investments.**
24

25 **Response IR-72:**

26
27 NS Power does track the condition of its assets as part of the Company’s Asset Management
28 Framework and risk-based decision-making approach. This condition is used in combination with
29 criticality to understand risk and necessary mitigating measures. However, in most cases, this
30 condition is not used to determine a time-based projection of failure. Not all time-based risk factors

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1 may be related to an asset failure, so the risk rating process and results are better considered as a
2 method to identify areas requiring potential mitigation that can be reviewed in detail by NS Power
3 Asset Strategy Committees to determine mitigating measures. For critical asset classes such as
4 power transformers, NS Power develops multi-year plans that project the number of replacements.
5 However, final determination would occur during the ACE Plan process with the most up to date
6 condition assessments.

7
8 (a) Yes. NS Power does anticipate that there will be significant reliability-related projects
9 undertaken between 2027 and 2031 as has been typical in the first two years of the Five-
10 Year Reliability Plan. Any upcoming projects greater than \$1 million will be filed as
11 required with the NSEB in future Annual Capital Expenditure (ACE) Plans or standalone
12 capital submissions for approval. As described in NS Power's ACE Plans (most recently
13 the 2026 ACE Plan, M12619), capital projects in a given year are determined as a result of
14 the Asset Management Framework in response to risk scoring and available mitigating
15 measures. They are not determined in advance. The Five-Year Reliability Plan covers the
16 period of 2025-2029, so any future investments in 2030 and 2031 would not be envisioned
17 within this plan.

18
19 (b) The combination of both Condition and Criticality are necessary to determine risk and
20 required mitigation as may be appropriate. Typically, a risk score of 15 or higher would
21 require some risk mitigation measure. For a feeder with a criticality score of 5, this would
22 correspond to a condition score of 3, 4, or 5. However, within the Asset Management
23 Framework, risk mitigation does not always mean capital investment. The specific
24 mitigating measures and timing are a function of the specific risk drivers and may take
25 different forms such as increased inspections, asset replacements, upgrades, protective
26 devices, or other activities. The risk rating itself does not determine the timing of this
27 action.

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1 **Request IR-73:**

2
3 **Please refer to NS Power's response to IR-19 (c) (ii). Does NS Power have any plans to more**
4 **accurately characterize and quantify tree contacts in its tracking of the cause of outages?**

5
6 **(a) If so, what are those plans?**

7
8 **(b) If not, why not?**

9
10 **Response IR-73:**

11
12 **No.**

13
14 **(a) N/A.**

15
16 **(b) NS Power will continue with the methodology as presented in IR-19 (c) (ii) to remain**
17 **consistent with previous reporting and provide additional context to stakeholders. Where**
18 **feasible, additional information on outage cause is leveraged, however as noted elsewhere,**
19 **the nature of adverse weather-related tree contacts makes direct attribution difficult. As the**
20 **Company continues to improve its understanding of vegetation condition, including**
21 **through analysis of satellite imagery, further refinement of the 40% estimate is not**
22 **anticipated to materially change risk-based decision-making in the regard. NS Power will**
23 **primarily utilize direct assessment of tree condition data and feeder criticality to prioritize**
24 **vegetation intervention.**

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1 **Request IR-74:**

2
3 **Please refer to NS Power's response to IR-19 (d) (iii). Has the 2025 ransomware attack**
4 **compromised reliability in 2025 and/or 2026?**

5
6 **(a) For 2025, when was reliability compromised, how, and by how much?**

7
8 **(b) For 2026, by how much is reliability anticipated to be compromised? Are any**
9 **proposed reliability investments on postponed or canceled due to this attack?**

10
11 **(c) For 2027, 2028, and 2029, are any future reliability investments contemplated in**
12 **response to this attack? Which ones and what is the proposed investment? Are any**
13 **updates to the Five-Year Reliability Plan needed to accommodate these**
14 **changes/additions?**

15
16 **Response IR-74:**

17
18 **No.**

19
20 **(a-b) Customer reliability was not comprised due to the 2025 cyber incident and no 2026 projects**
21 **are impacted. As stated in the 2025 Annual Performance Standards report, the cyber attack**
22 **that occurred in April 2025 was a significant disruption to the business, but did not affect**
23 **NS Power's core field operations or response to customer outages.**

24
25 **(c) No changes to the plan are required due to the 2025 cyber incident.**

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Request IR-75:

Please refer to NS Power’s response to IR-20 which states, “Further, emerging risks such as those from a changing climate would help to inform the development of the plan, including the development of new distribution standards to better resist high winds that would subsequently be incorporated into specific projects.”

(a) Please identify all new distribution standards that were adopted from 2015-2025.

(b) Are any new distribution standards proposed for 2026-2031? If so, please identify these as well and indicate their potential timeline for adoption.

Response IR-75:

(a) All updated and newly created distribution standards from 2015-2025 are detailed below. These updates have been implemented to support the Five-Year Reliability Plan, with a focus on grid hardening and accommodating load growth. Key revisions to the standards from 2015-2025 include a full overhaul of the following sections:

- Section 40: Voltages and Clearances
- Section 60: Poles and Settings
- Section 160: Secondary Construction and Services
- Section 200: Joint Use
- Section 220: Transformer Connections and Installations
- Section 260: Street and Area Lighting
- Section 550: Padmounted Transformers

Many individual overhead standards drawings have been revised or newly created. These include new grounding standards (Section 140), revised framing standards (Section 80), and new equipment standards (Sections 280, 340, and 360). The newly developed framing

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standards include special designs for use in high-wind regions (Section 80 -drawings 81-40, 81-55, 82-50, 83-40). The new equipment standards include designs for wildlife mitigation (Section 340), telecommunication infrastructure (Section 360 – drawings 360-5, 360-10, 360-15, 360-20, 360-30, and 360-35), and AMI network infrastructure (360-25).

Additionally, many individual underground standards have been revised or newly created. These include updating underground clearance requirements (Section 500), new trench and conduit designs (Section 510), revised cable terminations (Section 530), revised riser pole designs (Section 540), new and revised designs for underground residential distribution (Section 570 and 580) and revised grounding standards for underground systems (Section 590).

(b) The following sections of the standards manuals are planned for revision over the next four years. New revisions to the Canadian Standards Association (CSA) standards on Overhead Systems (C22.3 No. 1) and Underground Systems (C22.3 No. 7) will be released in 2030. The standards work plan from 2030 and beyond will be heavily influenced by the content of these newly released CSA standards.

- Section 120 (Anchoring and Guying) – Released and in effect January 2026
- Section 180 (Conductors) – Released and in effect January 2026
- Section 400 (Hardware and Materials) – Work complete with expected release June 2026
- Section 140 (Grounding) – In progress with release targeting for end of 2026
- Section 80 (Framing) – In progress with new/revised designs to be released and implemented in 2026 and 2027.
- Section 520 (Underground Cables) – Targeted for 2027
- Section 570 (Underground Residential Distribution) – Targeted for 2027
- Section 60 (Poles and Settings) – New designs for Fiberglass poles to be trialed in 2026 with expected released in 2027.

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- 1 • Section 240 (Protection and Sectionalizing) – Targeted for 2028
- 2 • Section 600 (Underground Fusing and Protection) – Targeted for 2028
- 3 • Section 590 (Grounding for Underground Systems) – Targeted for 2029
- 4 • Section 500 (Underground Clearances) – Targeted for 2029

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Request IR-76:

Please refer to NS Power’s response to IR-21 which states, “Electricity Canada’s methodology for calculating performance metrics does not account for behind-the-meter generation or other sources of backup power.” Please provide documentation associated with Electricity Canada’s methodology for calculating performance metrics.

Response IR-76:

Please refer to Confidential Attachment 1 for Section 3 of Electricity Canada’s Service Continuity Committee User Manual containing supporting documentation. NS Power can confirm that the definition of an interruption in this methodology is “the loss of service (not restored by automatic reclosure or immediate supervisory control) to one or more customers”, with customers defined as “a metered service.” Ultimately, a loss of service to the metered service, regardless of conditions behind the meter, would be counted as an interruption for outage reporting purposes. Although not discussed within the manual directly, discussions within the Service Continuity Committee have confirmed that behind-the-meter batteries or back-up power are not considered to mitigate interruptions for the purposes of calculating performance metrics.

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**2025-2029 Five Year Reliability Plan Review IR-76
Confidential Attachment 1 has been removed due to
confidentiality.**

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1 **Request IR-77:**

2
3 **Please refer to NS Power’s response to IR-24 (a) which states, “Diminishing returns were**
4 **represented as a reduction in the effectiveness of investments in the later years of the**
5 **program, such that an equivalent program investment in year 5 would deliver a smaller**
6 **reliability benefit than in year 1 of the plan.” Please provide the data which shows the**
7 **diminishing returns that are assumed over the five years of the Reliability Plan. Please**
8 **provide in Excel with all supporting data and assumptions.**
9

10 **Response IR-77:**
11

12 The diminishing returns of additional investments in different program tracks were developed by
13 NS Power subject matter experts and represented as reduced avoided customer hours of
14 interruptions. The diminishing returns assumed for each program during the development of the
15 Five-Year Reliability Plan are provided in Attachment 1.

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Attachment 1 has been filed electronically.

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1 **Request IR-78:**

2
3 **Regarding NS Power's response to IR-30:**

4
5 **(a) Using an actual feeder and corresponding data from the response to IR-28, please**
6 **provide an Excel spreadsheet that calculates, with working formulas, the feeder risk**
7 **score. Please clearly identify the inputs used (e.g. "feeder condition component," etc.).**
8 **Please provide an accompanying explanation of the calculation.**

9
10 **(b) Please provide the definition for "problem feeder."**

11
12 **(c) Please explain and show in the spreadsheet for (a) how the "control" variables of**
13 **communications and maintenance access affect the score.**

14
15 **(d) Does having a score of 1 for communications and maintenance increase or decrease**
16 **the feeder risk score? By how much? Please explain and provide an illustrative**
17 **calculation.**

18
19 **(e) Regarding "maintenance access" defined as "if feeder has >30 percent of structures**
20 **off-road:**

21
22 **(i) How is the 30 percent calculated? Please provide an illustrative example.**

23 **(ii) Please provide a definition of "structures."**

24
25 **Response IR-78:**

26
27 **(a) Please refer to Attachment 1 for an example feeder calculation as well as IR-29, IR-30, and**
28 **IR-31 for details of the specific structure of the calculations.**

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(b) A problem feeder is defined by the Performance Standards as a feeder that has been among the worst 5 percent of all NS Power's circuits with respect to either CKAIFI or CKAIFI respectively for two consecutive years.

(c-d) As detailed in Synapse IR-30, these two factors impact a feeder's criticality rating. As shown in the criticality equation provided in that response and reproduced below, maintenance access and communication are applied as modifiers to the maximum value of the other three factors.

$$\text{Criticality} = \text{Max} (\text{Usage}, \text{Customer}, \text{Perf. Stand.}) + \text{Maint. Access} \\ - \text{Communication}$$

Maintenance access and communications are only rated as follows:

- Communications: If feeder telemetered for indication and/or control = 1, otherwise 0.
- Maintenance Access: If feeder has >30 percent of structures off-road = 1, otherwise 0.

An example of how this is applied to scoring is as follows:

- Usage: 3
- Customer: 4
- Performance Standards: 1

In this case, the maximum of these three factors is a 4 for criticality. Then assuming an un-telemetered feeder (Communications = 0) and significant off-road construction (Maintenance Access = 1) we can adjust the criticality as follows:

$$\text{Criticality} = 4 (\text{Customer}) + 1 (\text{Maint. Access}) - 0 (\text{Communication}) = 5$$

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This methodology is reflected in the example provided in Attachment 1.

(e)

(i) The percentage of off-road structures for a given feeder is calculated by dividing the number of off-road structures (defined as more than ~15m away from a roadway) by the total number of structures on the feeder. These totals are determined largely based on feedback from line inspection resources and other field personnel and supplemented as needed by querying NS Power's GIS for structure locations by feeder. An example of a calculation would be as follows:

- Total structures: 1,000
- Total off-road structures: 500

$$\text{Percentage of Structures Off - Road} = \frac{\text{Off - Road Structures}}{\text{Total Structures}}$$

$$\text{Percentage of Structures Off - Road} = \frac{500}{1,000} = 50\%$$

(ii) A structure is defined as a distribution pole used to mount primary conductor and associated equipment.

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1 **Request IR-79:**

2
3 **Regarding NS Power's response to IR-34, please provide the relevant page numbers for the**
4 **two documents cited here:**

5
6 **(a) 2026 ACE Plan (M12619)**

7
8 **(b) Property and Assets proceeding (M11067)**

9
10 **Response IR-79:**

11
12 **NS Power's risk based decision-making approach is detailed in the following:**

13
14 **(a) 2026 ACE Plan (M12619): Exhibit N-1, Application, PDF pages 17-20, and 52.**

15
16 **(b) Property and Assets Proceeding (M11067): Exhibit N-1, NS Power Capital Expenditure**
17 **Justification Criteria (Summary Document), PDF pages 14-18.**

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Request IR-80:

Please refer to NS Power’s response to IR-35 (e) which states, “Consistent criteria and a comprehensive list of critical facilities in the province are not available to NS Power.”

(a) Please provide the criteria that NS Power is aware of for defining critical facilities.

(b) Please provide the number of critical facilities that NS Power is aware of.

(c) How does NS Power become aware of critical facilities? Who provides notification to NS Power of the existence of a critical facility?

(d) What actions is NS Power required to take with regards to critical facilities it is aware of/notified about? Please explain.

Response IR-80:

(a) NS Power is not aware of any criteria used today to define critical facilities in a systematic manner. The identification of critical infrastructure is not determined by NS Power. During emergency response, critical infrastructure is identified by the Nova Scotia Emergency Management Office (EMO).

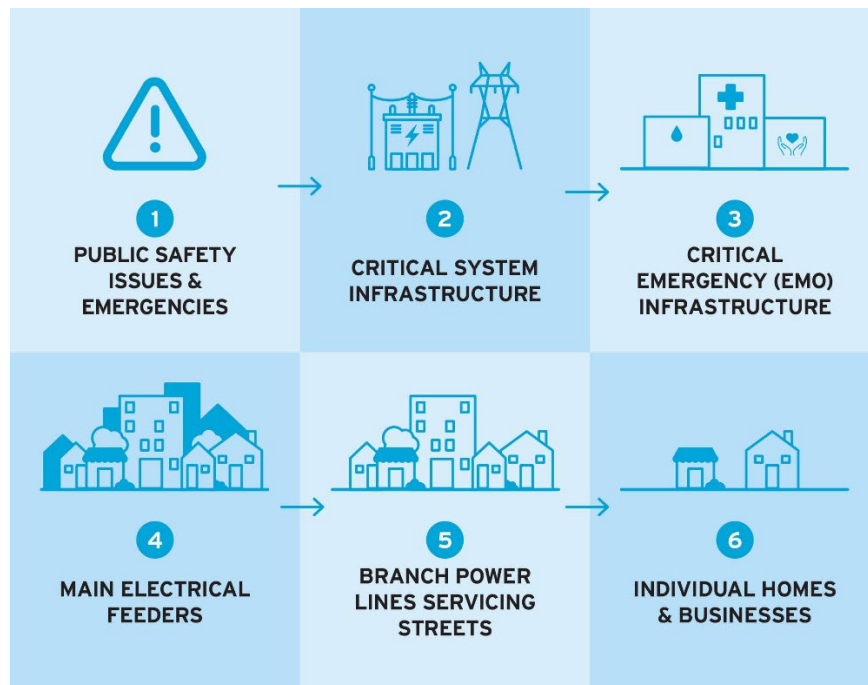
Critical facilities are not incorporated into NS Power’s distribution feeder risk rating or used in the Asset Management Mechanism. As noted in response to IR-35(e), consistent criteria and a comprehensive list of such facilities are not available to NS Power for planning purposes.

(b) A comprehensive list of critical facilities in the province is not available to NS Power. Accordingly, NS Power does not have a defined number of critical facilities.

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- (c) NS Power becomes aware of critical infrastructure through coordination with the Nova Scotia EMO during storm and emergency response. EMO identifies impacted critical infrastructure and communicates restoration priorities to NS Power, as required.
- (d) Upon notification from EMO, NS Power considers identified critical infrastructure as part of its restoration decision making. Where operationally feasible, NS Power may adjust restoration activities to support EMO-identified priorities. These actions are undertaken within NS Power's established restoration framework, as shown in the figure below.



This process is distinct from NS Power's planning and risk evaluation of distribution feeders. Distribution feeder risk and prioritization are determined based on system condition, performance, and load-related factors (e.g., equipment condition, failure history, and customer exposure), rather than the presence of specific customer types or facilities.

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1 **Request IR-81:**

2
3 **NS Power states in response to IR-37,**

4
5 **“Once reliability investments were prioritized at a feeder, NS Power**
6 **considered cost-effective approaches to address the identified reliability needs**
7 **by comparing alternative investment options and selecting those expected to**
8 **deliver the required reliability improvement efficiently.”**
9

10 **(a) Does NS Power calculate cost-effectiveness of various reliability investment and or**
11 **expenditures at the feeder level? If yes, please provide this calculation for a historical**
12 **or forecast project.**

13
14 **(b) How does NS Power evaluate alternatives to improve reliability at the feeder level?**
15 **Please describe whether this is a quantitative evaluation or qualitative evaluation, and**
16 **provide a specific historical example with all source documents and calculations (if**
17 **applicable).**
18

19 **Response IR-81:**

20
21 **(a) No. The evaluation of alternative risk mitigation measures is not typically performed at the**
22 **feeder level. Only very rarely would an intervention be considered to address an entire**
23 **circuit, and most often be targeted on only a sub-section of the circuit.**
24

25 **(b) Consistent with NS Power’s Asset Management framework, all risks, including those**
26 **related to reliability, are identified, prioritized, and mitigated based on their contributing**
27 **factors. For feeders where higher risk scores are driven by the frequency and duration of**
28 **outages, NS Power asset strategy committees identify the outage causes and locations**
29 **contributing to frequency and/or duration as appropriate. This provides a first screening for**
30 **potential alternatives, as mitigating measures that would not address these causes, or not**
31 **be appropriate for those locations can be immediately removed from consideration. For**

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1 potentially applicable interventions, additional screening for executability and cost
2 effectiveness at the local, rather than feeder level, can then be applied.

3
4 A specific example of this approach would be on feeder 85S-401 where tree contacts are
5 identified as a leading cause of outage impacts on a sub-section of the feeder.

6
7 Since failed equipment in this area is not a major driver of interruptions, NS Power would
8 not choose to pursue targeted device replacement to mitigate this risk and would screen out
9 these types of interventions.

10
11 To address tree contacts, NS Power can consider right-of-way (ROW) widening or Build-
12 to-Roadside projects as appropriate risk mitigating measures. Among these two
13 alternatives, some areas may already be roadside, build-to-roadside costs may be
14 prohibitive, or permission to move lines may not be granted by Parks Canada, and
15 consequently ROW widening may be the only viable option to address this specific risk.

16
17 However, in other areas (e.g. Pleasant Bay), a planned Parks Canada road-widening project
18 provides NS Power an opportunity to achieve reliability benefits by moving existing
19 distribution infrastructure from an off-road ROW to the new roadside at a lower cost.

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Request IR-82:

Please refer to Attachments 1 and 2 in NS Power’s response to IR-38. Please provide a detailed demonstration of how the data and calculations in Attachment 2 map to the data and calculations in Attachment 1.

Response IR-82:

The calculations in Appendix 2 provide the range of potential SAIDI reductions envisioned by each program included in the Five-Year Reliability Plan. The totals of each program can be combined to yield a range in total for each investment track. Due to the inherent uncertainty in resulting effects in these tracks at the program and project level previously discussed, NS Power considers that a range of potential outcomes are possible within the scope of the Five-Year Reliability Plan. NS Power recognizes that within the Plan, various programs may contribute more or less to the SAIDI reduction originally projected over the life of the plan. For the purposes of providing a single projection (Appendix 1), NS Power subject matter experts assessed a best estimate within the range for each track within the Plan.

In addition, the resulting totals shown in Appendix 1 form the net result of the Five-Year Reliability Plan in 2029 compared with the average performance in 2019-2023. Not represented in this figure is the natural upward pressure in Performance Standards SAIDI in a “Business as Usual” scenario due to the impacts from a changing climate. NS Power estimates that this represents an increase of approximately 0.26 SAIDI (excluding years with extreme weather events) over the lifetime of the plan. As a result, the anticipated SAIDI improvement ranges from Appendix 2 are adjusted downwards (primarily in Storm Hardening - Vegetation Management and Storm Hardening - Targeted Equipment Replacement and Upgrades) by NS Power to account for this effect.

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1 **Request IR-83:**

2
3 **Please refer to Attachment 2 in NS Power’s response to IR-38. Please also refer to NS Power’s**
4 **response to IR-39 (a-b) which states,**

5
6 **“As detailed in Synapse IR-38, cost and SAIDI reduction projections are**
7 **informed by historical outage performance and historical cost data and**
8 **therefore represent planning-level projections rather than project-specific**
9 **commitments.”**

10
11 **(a) Please define the term “proposed incremental investments”.**

12
13 **(b) Please discuss why the proposed incremental investments do not equal the total**
14 **Reliability Plan investments of \$1.3 billion - the total for all five-years of the Plan.**

15
16 **(c) Please provide all data and an illustrative example of how SAIDI hour per \$1M and**
17 **SAIDI reduction projections are informed by historical outage performance and**
18 **historical cost data for each sub-program in Attachment 2.**

19
20 **(d) What historical time period was utilized to quantify SAIDI reduction projections for**
21 **each sub-program in Attachment 2? Please be specific about which year(s) of outage**
22 **performance are used to quantify the impacts of which year(s) of costs and provide**
23 **the underlying data for those years.**

24
25 **(e) Regarding the column labeled SAIDI Hour Per \$1M (Low) in Attachment 2, please**
26 **provide the data sources, inputs, and calculations used to derive each value in the**
27 **table.**

28
29 **(f) Regarding the column labeled SAIDI Hour Per \$1M (High) in Attachment 2, please**
30 **provide the data sources, inputs, and calculations used to derive each value in the**
31 **table.**

Five Year Reliability Plan 2025-2029 (NSEB M12558)
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1 **(g) Regarding the column labeled SAIDI Reduction (Low) in Attachment 2, please**
2 **provide the data sources, inputs, and calculations used to derive each value in the**
3 **table.**

4
5 **(h) Regarding the column labeled SAIDI Reduction (High) in Attachment 2, please**
6 **provide the data sources, inputs, and calculations used to derive each value in the**
7 **table.**

8
9 Response IR-83:

10
11 (a) In IR-38 Attachment 2, “Proposed Incremental Investment” refers to the total incremental
12 investment envisioned for each investment program within the Five-Year Reliability Plan.

13
14 (b) This total represents only the investments where NS Power has assigned a defined
15 projected SAIDI improvement. The remaining portion of the total investment is largely
16 considered as investments required to maintain the current level of performance. While
17 these have a positive impact on reliability, NS Power has considered only the incremental
18 ~\$238 million investments when determining the overall SAIDI benefit expected by 2029.

19
20 (c) The projected SAIDI improvements based on previous projects are a result of analysis by
21 NS Power SMEs on the estimated avoided customer hours of interruption following a
22 project’s completion compared against its cost. By focusing in on a set of specific, well
23 understood targeted locations, some directional insights on potential reliability gains can
24 be understood and quantified by NS Power. However, as previously detailed, these
25 estimates cannot account for all the potential factors or specific nuance of different
26 locations that would influence future performance in a given year, or at a different location
27 where applied. Consequently, the reduced SAIDI per dollar spent used to project SAIDI
28 improvements should be considered an estimate and is anticipated to vary (as captured
29 within the range of outcomes) across the system. The guidance and criteria used to

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determine investment SAIDI reduction used to produce the projections are provided in Attachment 1.

(d) Specific years were not used to develop the estimates for SAIDI reduction projections and are rather based on NS Power SMEs selecting suitable mitigation strategies for subsequent analysis since approximately 2009. As discussed in part (c) above, estimating improvements given the large volume of potential variables can be challenging and NS Power strongly leveraged internal expertise to determine the impact of suitable mitigation strategies rather than a system-wide, or even a project-wide review of performance to generate estimates.

(e-f) The High and Low ranges for SAIDI Hour Per \$1M in each program are a +30% and -30% adjustment of the estimate for SAIDI Hour Per \$1M projected for each program. These original estimated projections are as follows:

Sub-Program	Projected SAIDI Hour Per \$1M
Vegetation Management	0.0053
Distribution System Equipment Upgrades and Replacements	0.0533
Build-to-Roadside Program	0.0048
Distribution System Conductor Upgrades	0.0259
Distribution System Underground Upgrades	0.0156
Remote Terminal Units (RTUs)	0.0016
Downline Connectivity / FLISR	0.0117

(g-h) The High and Low ranges for SAIDI reductions in each program are the multiplication of the High and Low SAIDI Hour Per \$1M with the Proposed Incremental Investment.

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2025-2029 Five Year Reliability Plan Review IR-83
Attachment 1 has been filed electronically.

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Request IR-84:

NS Power's response to IR-39 states

“Each investment stream, including vegetation management, is evaluated using a baseline cost-per-SAIDI assessment, with considerations for operational resources, execution, and scalability constraints by NS Power SMEs.”

(a) Please provide a mapping of how the notes column translates to the scalability designation for each investment stream.

(b) Please describe how the scalability designation translates to the proposed incremental investment levels for each investment stream.

Response IR-84:

(a) NS Power assumes that the reference above to a “notes column” is referring to IR-38 Attachment 2 where the Company has provided additional detail on investment tracks. The details provided do not map directly to scalability and are provided as notes for context to better understand the factors that are considered. As discussed in the response to IR-39, scalability is one of several considerations evaluated by NS Power subject matter experts to help guide the development of the Five-Year Reliability Plan.

(b) Scalability does not necessarily directly translate into the level of proposed incremental investment. But as discussed in part (a) the scalability of a potential intervention is one of several considerations assessed to inform the overall breakdown of the incremental investment. The consequence of the relative scalability of different interventions is that NS Power does not center the Company's Five-Year Reliability Plan on low scalability interventions to deliver large volumes of projected SAIDI reductions.

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1 **Request IR-85:**

2
3 **Regarding NS Power's response to IR-40, please provide the table in Excel with supporting**
4 **data, calculations and assumptions.**

5
6 Response IR-85:

7
8 Please refer to Attachments 1-4 for a detailed breakdown of the number of spans and/or kilometres
9 worked on each feeder or transmission line. Recent data audits have improved the accuracy of the
10 historical records and as a result changed kilometers worked. Establishing New Rights-of-Way
11 (ROW) increased from 256 kilometers worked to 281 kilometers and trimming and removal of
12 trees around existing power lines increased from 231 kilometers to 234 kilometers. These
13 adjustments are reflected in Attachment 5. The cost per span and kilometre values were
14 determined by taking the total cost divided by the units worked.

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2025-2029 Five Year Reliability Plan Review IR-85
Attachments 1-5 have been filed electronically.

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1 **Request IR-86:**

2
3 **Regarding NS Power's response to IR-41, attachment 2, please provide the forecasted**
4 **expenditure at the time of the Reliability Plan filing at the feeder level or in aggregate for the**
5 **feeders listed.**

6
7 Response IR-86:

8
9 At the time of filing, the aggregated forecast costs for the feeders listed was \$9,331,469, and in
10 line with the totals forecast up to that time.

Five Year Reliability Plan 2025-2029 (NSEB M12558)
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1 **Request IR-87:**

2
3 **Regarding NS Power's response to IR-41, attachment 3, please add for each Feeder listed the**
4 **amount of expenditure on the Distribution Vegetation Management Right of Way Widening**
5 **program in 2025. Please provide in Excel.**

6
7 Response IR-87:

8
9 Please refer to Attachment 1.

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2025-2029 Five Year Reliability Plan Review IR-87
Attachment 1 has been filed electronically.

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Request IR-88:

Regarding NS Power's response to IR-42:

(a) Please provide the amount of expenditures on each of the "added" lines in 2025 (Transmission lines L-6503 and L-6002).

(b) Does NS Power compute risk scores for transmission lines (e.g. as provided in IR-41, attachment 1)? If yes, please provide the methodology of risk scoring. If no, please explain why not.

(c) In Excel, please provide a reliability risk ranking, including Transmission Line ID risk score, and risk score components, for all Transmission Lines in 2025. Please include all supporting workpapers and calculations. Please indicate which were targeted in 2025 and which will be targeted in 2026.

Response IR-88:

(a) The T010 Transmission Corridor Widening expenditure for L-6503 and L-6002 was included in IR-42 part (c), (i) and is reproduced in the table below.

Line	2025 T010 Expenditure
L-6503	\$408,170
L-6002	\$288,120

(b) Yes. NS Power calculates a risk rating for all lines on its transmission system. Like the distribution feeder risk rating, it includes condition and criticality factors.

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Condition Ratings

$$\text{Condition} = 0.8 * \text{Inspection} + 0.05 * \text{Ground Clearance} + 0.15 * \text{Line Reliability}$$

- Inspection Rating: Max of either Structure Failure or Deficiency Identification ratings based on thresholds
- Ground Clearance Rating: Percentage of spans with ground clearance violations (any violation of a critical span is an automatic rating of 5)
- Line Reliability Rating: Based on thresholds for reported transmission line events

Criticality Ratings

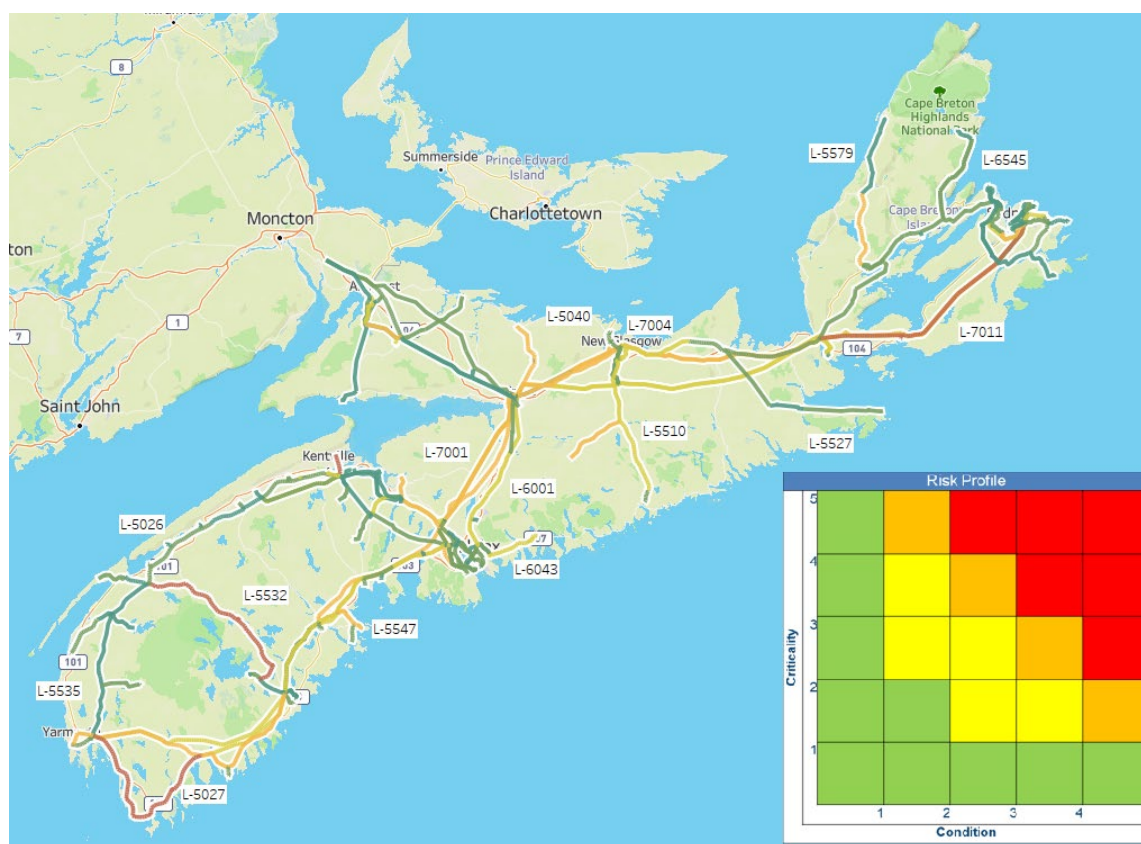
$$\text{Criticality} = \text{Max}(\text{System Impact}, \text{Performance Standards}) \\ + \text{Modifiers} (\text{Crit. Crossings}, \text{Remoteness}, \text{Safety})$$

- System Impact Rating: Scoring based on Load, Customer Impact, Voltage, and/or Generation Impact
- Performance Standards Rating: 5 if Problem Feeder, 3 if Potential Problem Feeder Impact, otherwise 1.
- Modifiers:
 - Critical Crossings: +0.25 for Critical Crossing with Standard Construction, +0.5 for non-standard Critical Crossing
 - Remoteness: 1-5 range based on percentage of line considered remote (scaled to a 0 to +0.5 modifier)

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- Safety: 1-5 range based on location of line compared to residential properties (scaled to a 0 to +0.5 modifier)
 - Modifiers are added to a max total rating of 5 for criticality.
- (c) Please refer to Attachment 1 for risk rating for each transmission line. Please refer to IR-42 (a) for lines targeted for widening under T010 in 2025 and the table below for lines targeted in in 2026. A sample map of transmission line risk ratings is provided below.



2026 T010 Transmission Corridor Widening		
Transmission Line	Geographic Location of the Line	2026 Planned km
L-7003	Northeast	27
L-7004	Northeast	28

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2026 T010 Transmission Corridor Widening		
Transmission Line	Geographic Location of the Line	2026 Planned km
L-7009	West	27
L-6503	Northeast	30
L-6511	Northeast	8
	Total km	120

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2025-2029 Five Year Reliability Plan Review IR-88
Attachment 1 has been filed electronically.

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1 **Request IR-89:**

2
3 **Regarding NS Power's response to IR-43, attachment 3, for each Feeder listed please add the**
4 **amount of expenditure on the New Rights-of-Way for Distribution Feeders program in 2025.**
5 **Please provide in Excel.**

6
7 Response IR-89:

8
9 Please refer to Attachment 1.

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2025-2029 Five Year Reliability Plan Review IR-89
Attachment 1 has been filed electronically.

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1 **Request IR-90:**

2
3 **Regarding NS Power's response to IR-47:**

4
5 **(a) Response b(ii) shows a table below the statement ("Work completed at the feeder level**
6 **is as follows"). Please provide this table in Excel and indicate 1) which feeders were**
7 **originally included in the Reliability Plan and 2) the amount of expenditure on each**
8 **feeder for this program.**

9
10 **(b) Response b(iv) shows a table below the statement ("Work that was completed but not**
11 **initially identified"). Please provide this table in Excel and indicate the amount of**
12 **expenditure on each feeder for this program.**

13
14 **Response IR-90:**

15
16 **(a-b) Please refer to Attachment 1.**

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2025-2029 Five Year Reliability Plan Review IR-90
Attachment 1 has been filed electronically.

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1 **Request IR-91:**

2
3 **Regarding NS Power's response to IR-48, please provide the full list of feeders related to this**
4 **program including feeder ID and expenditure amount. Please confirm that feeders listed**
5 **under b(iv) are included in this response. If not, please explain and provide the amount of**
6 **expenditure associated with each feeder listed in Excel.**

7
8 Response IR-91:

9
10 The feeders included under IR-48 (e)(iv) are included in IR-48(e)(i) within the response. The
11 additional work not originally identified was included as a part of the 2024 Padmount Replacement
12 Program and 2025 Padmount Replacement Program. The feeders with work completed are
13 included in Attachment 1; the expenditures at the feeder level are part of the total program cost
14 and are not broken out individually.

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2025-2029 Five Year Reliability Plan Review IR-91
Attachment 1 has been filed electronically.

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1 **Request IR-92:**

2
3 **Regarding NS Power's response to IR-52:**

4
5 **(a) Please provide all NS Power forecasts of measure types, number of measures, costs,**
6 **and SAIDI and SAIFI reductions from these grid modernization investments related**
7 **to reliability from its 2020 to 2026 ACE Plans. Please include references to specific**
8 **page numbers where these values appear in each ACE Plan.**

9
10 **(b) Please provide references to other proceedings where the NSEB has evaluated these**
11 **types of investments.**

12
13 **Response IR-92:**

14
15 **(a) Please see IR-83 Attachment 1 for forecasted SAIDI reduction calculations. Note that**
16 **“Advanced Grid Modernization” program as presented for the Five-Year Reliability Plan**
17 **was not a named program with forecast SAIDI / SAIFI measures prior to the 2025 ACE**
18 **Plan. Specific projects for a given year are reviewed and assessed annually through NS**
19 **Power's ACE Plan proceedings based on updated risk assessments, asset condition, and**
20 **system performance. Additionally, SAIFI / SAIDI improvements are not predicted from**
21 **individual projects. Lastly, given the broad scope of “grid modernization,” which**
22 **encompasses a wide range of initiatives of varying scale such as, but not limited to,**
23 **Advanced Metering Infrastructure, Dynamic Voltage Restoration, Smart Grid Nova Scotia,**
24 **Dynamic Line Ratings, ADMS and SCADA projects, providing a complete list of all**
25 **relevant projects would not be practical nor align to the purpose of the Five-Year**
26 **Reliability Plan filing. As such, a comprehensive project inventory from 2020 has not been**
27 **included.**

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2025 ACE Plan (M12012 / referenced in M12619):

- Advanced Grid Modernization 2025 investment: \$9.2 million
- Sub-breakdown: RTUs \$5,155,261 | Downline Connectivity \$2,499,247 | FLISR \$1,578,360
- 2025 targets: 11 RTUs, 35 downline devices, 24 FLISR devices
- Five-Year Plan SAIDI reduction target (entire Program 2025–2029): 0.06 to 0.11 hours
- Source pages: Five-Year Reliability Plan 2025 Update (Appendix G of 2026 ACE Plan, M12619), Pages 43–51

2026 ACE Plan (M12619):

- Advanced Grid Modernization 2026 anticipated spend: \$10.7 million
- Detailed 2026 breakdown (Figure 31 of the Update, at page 49): 8 RTUs, 35 downline connectivity devices, 24 FLISR devices
- 40 priority feeders (31 new, 9 carryover from 2025)
- Source pages: 2026 ACE Plan (M12619), Appendix G (Five-Year Reliability Plan Update), Pages 49–51

The 2026 ACE Plan also references C0080111 2026 RTU Deployment (21 additional distribution substations).

(b) As explained in part (a), a comprehensive project inventory has not been included. Below are examples of grid modernization related projects that NSEB has evaluated:

- CI 47124 - Advanced Metering Infrastructure (AMI) (original application: M08349, Authorization to Overspend application: M11003)

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- 1 • CI C0021109 - New RTU Deployment Project (23 substations) (included in 2020
- 2 ACE Plan for approval: M09499)
- 3 • CI C0010778 - Smart Grid Nova Scotia Project (M09519)
- 4 • CI 46075 - IT T&D WAM Phase 2 - Work Management and Scheduling &
- 5 Dispatch (original application: M10400, Final Cost application: M11886)
- 6 • CI C0045132 - Battery Energy Storage System (BESS) Project (M11539)

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Request IR-93:

Please refer to page 6 of NS Power’s response to IR-52 which states,

“Condition-Based Replacement: Enhanced asset management data from RTUs and connected devices enables more targeted equipment replacement based on actual condition rather than age alone.”

(a) Please describe the portion of the system that has this enhanced data. Please break out the response for i) RTUs, ii) downline connectivity improvements and Fault Location Isolation and Service Restoration (FLISR), and iii) distributed energy resources.

(b) Please provide a description of the types of enhanced data received from RTUs and connected devices on actual condition.

(c) Please describe if/how this enhanced data is used to improve the prioritization of assets. Does this enhanced data enable increased confidence with regards to the predicted timing of asset failure, such that projections for 1, 3, and 5 years into the future are more accurate? Please explain.

Response IR-93:

(a)

(i) RTUs – Please refer to IR-94.

(ii) Downline Connectivity – a small portion of the system has enhanced data. Currently less than 5 percent of devices. FLISR – N/A see Downline Connectivity. FLISR adds operational capabilities but does not add further asset management data beyond Downline Connectivity.

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1 (iii) Distributed Energy Resources (DERs) – NS Power does not currently have
2 enhanced condition data from DERs in any systematic program and DER-related
3 enhanced data is not yet a feature of NS Power's asset management system. The
4 DERMS platform that may support this capability has not yet been deployed and
5 remains under evaluation.
6

7 (b) Enhanced data received through Remote Terminal Units (RTUs) provides NS Power with
8 improved visibility into the actual condition, abnormal operating indications, and operating
9 state of electric utility assets across substations, distribution, transmission, and generation
10 facilities. RTUs collect and transmit both status and analog information from field
11 equipment and associated Intelligent Electronic Devices (IEDs) into SCADA, including
12 alarms, measurements, event indications, and accumulated operating quantities. Depending
13 on site design and connected instrumentation, this information includes equipment status
14 and abnormal condition alarms, such as breaker or recloser open/close indications, lockout
15 alarms, SF₆ density and control block alarms, transformer oil and winding temperature
16 alarms, online dissolved gas analysis (DGA) alarms, oil level alarms, and station battery or
17 charger alarms. RTUs also provide analog measurements such as transformer main tank oil
18 temperature, LTC oil temperature, winding temperature, hydrogen and moisture readings
19 from online DGA equipment, battery voltage, motor current, and measured electrical
20 quantities such as current, voltage, MW, MVAR, and MWh where applicable. RTUs also
21 support improved outage awareness, faster fault detection, remote control, and quicker
22 isolation and restoration of service, while also providing enhanced data that can be used to
23 support more in-depth asset management activities.
24

25 This enhanced data can support a more complete understanding of the assets by providing
26 both real-time operating values and time-stamped abnormal condition indications that can
27 be trended and assessed over time. For example, repeated temperature alarms, abnormal
28 DGA readings, low oil level indications, SF₆ alarms, battery/charger alarms, or increasing
29 lockout and operation history can indicate deteriorating equipment condition, emerging
30 failure modes, or increased operational risk. Similarly, analog trends such as transformer

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1 temperature, hydrogen or moisture levels, battery voltage, motor current, and loading-
2 related measurements can assist Asset Strategy Committees in identifying assets subject to
3 chronic stress, abnormal operating conditions, or changes in equipment performance.
4 Accumulated values, such as MWh or other operating totals, can also provide context
5 regarding asset duty and utilization. In all cases, these types of datasets are more
6 informative when reviewed as trends and in combination with other asset information,
7 rather than in isolation.

8
9 NS Power uses this RTU data as one input within its broader data-driven and risk-based
10 asset management approach. The information does not, on its own, determine whether an
11 asset will be replaced; rather, it is considered together with inspection results, maintenance
12 history, outage performance, criticality, loading, asset condition assessments, and
13 engineering judgment. This aligns with NS Power's broader approach, which considers
14 leading and lagging condition indicators, including outage causes and inspection results, in
15 support of targeted and risk-based investment decisions. In that context, enhanced RTU
16 data improves NS Power's ability to identify and monitor equipment issues, prioritize field
17 investigation, support operating and maintenance decisions, and inform capital planning
18 where asset condition or operational risk supports replacement, refurbishment, or other
19 corrective action. This is consistent with NS Power's Five-Year Reliability Plan, which
20 focuses on risk-based investments, targeted equipment replacements and upgrades, and
21 advanced grid modernization to improve reliability, resilience, and restoration
22 performance.

- 23
24 (c) Enhanced data improves the quality of inputs to NS Power's Asset Management
25 Mechanism to rank and prioritize asset maintenance and make more informed decisions,
26 enabling more targeted condition-based decisions relative to a purely age-based approach.
27 The condition scoring framework does not enable precise asset-failure timing projects at
28 the 1, 3, or 5-year horizon.

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1 **Request IR-94:**

2
3 **Regarding NS Power's IR-55, attachment 1, please provide all information in this**
4 **spreadsheet for all substations (not just those targeted for RTU connectivity) in Excel.**

5
6 Response IR-94:

7
8 Please refer to Attachment 1 for the current data (as of 2026) for all customer substations. This list
9 includes substations where RTUs are already installed, as well as those currently without
10 connectivity. No information is provided for Project Criticality Adjusted, Project Risk Adjusted,
11 or Additional Risk Factors, as these are project specific data points only.

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

2025-2029 Five Year Reliability Plan Review IR-94
Attachment 1 has been filed electronically.

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Request IR-95:

Please provide all data for 2005 through 2026 as shown the attached Excel file titled Synapse_IR_M12558_Set 2 Data Template 2026.05.22.xlsx, in the IR-95 Data Template tab. Please include the following for each year in which the data is available:

- **Five-Year Reliability Plans: Total investments (\$), Circuit Kilometres Addressed, SAIDI, SAIFI, and Maximum hours for customer service restoration on major event days.**
- **Reliability Components of ACE Plans: Total investments (\$), Circuit Kilometres Addressed, SAIDI, SAIFI, and Maximum hours for customer service restoration on major event days.**
- **Actual Reliability Investments: Reactive investments (\$), Proactive investments (\$), Total investments (\$), Circuit Kilometres Addressed, SAIDI, SAIFI, Maximum hours for customer service restoration on major event days, and Number of major event days.**
- **Reliability standards met (Y/N).**
- **If not met, penalties assessed (\$).**

Please provide all available data. If any data is not available, please identify that data in the written response, explain why it is not available, and populate those cells with a “n/a”.

Response IR-95:

Please refer to Attachment 1, which has been updated with all available data. The following is a summary of what was not available.

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Five-Year Reliability Plan

- Total Investment – All years prior to 2025 are captured under the Actuals category.
- Circuit KMs Addressed – No fulsome forecast related to all work was provided in the Five-Year Reliability Plan.
- SAIDI / SAIFI – The Five-Year Reliability Plan only provided a forecast of SAIDI / SAIFI for 2029.
- Maximum Hours for Customer Service restoration on major event days This was not forecasted as part of the Five-Year Reliability Plan.

ACE Plan

- Total Investments – NS Power’s capital software, PowerPlan, only includes costs back to 2008. The total investment figure from the ACE Plan only includes Transmission & Distribution investment. The level of effort to review all prior ACE Plans in order to capture all reliability spend under General Plant (such as Telecom investment) can not be completed within the timelines of this IR process.
- Circuit Kilometres (KM) Addressed, SAIDI, SAIFI, Maximum hours for customer service restoration on major event days – The ACE Plan does not provide a forecast for KM addressed, SAIDI / SAIFI or Maximum hours for Customer Service restoration on major event days.

Actuals

- Reactive Investments, Proactive Investments, Total Investments – NS Power’s capital software, PowerPlan, only includes costs back to 2008.

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- 1 • Circuit KMs Addressed – NS Power does not track total kilometres addressed for all capital
2 projects. Total kilometres addressed is only applicable to certain work types, such as
3 vegetation management and build-to-roadside.
4
- 5 • Maximum Hours for Customer Service restoration on major event days – This is not
6 historically tracked.
7

8 **Performance Standards**
9

10 Performance Standards came into effect in 2017, so no information prior to that is provided.

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

2025-2029 Five Year Reliability Plan Review IR-95
Attachment 1 has been filed electronically.

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1 **Request IR-96:**

2
3 **To what degree does NS Power factor an increasing prevalence and severity of minor and**
4 **major events into its Reliability Plan?**

5
6 **(a) What types and sources of weather data does NS Power use to understand how the**
7 **prevalence and severity of minor and major events is changing over time? Please**
8 **provide the sources as well as the specific data utilized within each source.**

9
10 **(b) Do the standards account for the increasing prevalence and severity of minor and**
11 **major events? If so, which ones and how?**

12
13 **(c) Would other metrics do a better job accounting for the increasing prevalence and**
14 **severity of minor and major events? If so, which ones and how?**

15
16 **(d) Has NS Power normalized any of its planned or actual reliability plan metrics to**
17 **better control for the increasing prevalence and severity of minor and major events?**
18 **If so, which ones and how?**

19
20 **Response IR-96:**

21
22 As filed in the 2026 GRA Direct Evidence Appendix 3B Climate Adaptation Plan, there is direct
23 reference to the Five-Year Reliability Plan. The Plans are linked to one another, ensuring that NS
24 Power's infrastructure is prepared to withstand the increasing frequency and severity of climate-
25 related events, including severe weather. Leveraging the Climate Adaptation Plan and associated
26 processes, these are applied to the three main objectives of the Five-Year Reliability Plan. By
27 aligning reliability investments with climate adaptation strategies, as appropriate, NS Power is
28 committed to building a power system that not only meets current reliability standards but is also
29 equipped to handle future climate challenges.

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1 (a) NS Power uses weather data from Environment Canada weather stations. Annual wind gust
2 data is analyzed over time, and wind gust data is summarized to specific locations relevant
3 to NS Power assets. While the wind-gust approach does not capture all climate hazards
4 (e.g. flooding, lightning, wildfires, or ice storms, etc.) NS Power supplements this analysis
5 with broader climate projection datasets.

6
7 NS Power evaluated climate datasets that reflect physical impacts to assets with the climate
8 hazards and variables identified in Table 3.1 of the Climate Adaptation Plan. In addition,
9 Table 3.3 of the Climate Adaptation Plan outlines the climate datasets and their sources
10 considered for NS Power assets including, but not limited to, sea level rise, changes in
11 annual temperature, precipitation trends, and changing drought and wildfire conditions.
12 These climate scenario datasets provides valuable insights into the degree of impact that
13 can be expected for NS Power's operations and assets over time.

14
15 (b) The IEEE 1366 2.5 Beta Methodology would partially account for this through storm
16 threshold calculations, as the thresholds change based on the rolling average of daily outage
17 hours and therefore adjust over time in response to changing conditions.

18
19 In addition, NS Power incorporates evolving climate conditions into its design,
20 construction, and asset replacement standards. As described in response to IR-10 in Matter
21 M11692, the Company integrates both observed weather trends and forward-looking
22 climate projections into engineering criteria used for system design and refurbishment.
23 This includes the use of projected extreme weather parameters—such as wind gusts,
24 freezing precipitation, and temperature extremes—expressed through defined return period
25 values (e.g., 1:50-year events) to establish design thresholds for transmission and
26 distribution assets.

27
28 These projected parameters reflect anticipated changes in climate drivers, including
29 increases in extreme wind speeds, shifts in icing conditions, and changes in temperature
30 profiles (e.g., reduced extreme cold and increased heat events), and are used to support

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1 more resilient design. Through this approach, NS Power's standards evolve to account not
2 only for historical conditions but also for the expected future operating environment,
3 thereby embedding climate change considerations directly into infrastructure design and
4 investment decisions, consistent with the practices described in Matter M11692.

5
6 (c) While NS Power has previously cited the 2008 Technical Report from Electric Power
7 Research Institute (EPRI) "*Weather Normalization of Reliability Indices*" as well as
8 proposing a Wind-Normalized SAIDI metric, there are inherent limitations in achieving
9 precise normalization. For example, a wind-normalized metric does not capture the impacts
10 from non-wind events like ice storms or heavy, wet snowfall.

11
12 NS Power continues to monitor industry developments and would align with CEATI,
13 EPRI, Electricity Canada and its utility peers on appropriateness of metrics for an industry
14 standard. NS Power acknowledges having wet snowfall amounts would be helpful. Items
15 such as degree days (for colder winters), hurricanes formed, and other indicators of climate
16 change are all useful, but may not be correlated with what contributes to customer outages
17 on the Transmission and Distribution systems.

18
19 (d) NS Power has reported on Normalized SAIDI to account for increasingly severe weather
20 and wind exposure hours. Under this approach, SAIDI would be divided by the provincial
21 annual hours of gusts greater than or equal to 80 km/h across a set of Environment Canada
22 weather stations. NS Power was directed by the NSEB not to report any further on this
23 metric in its 2025 ACE Plan Decision and Order.

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1 **Request IR-97:**

2
3 **Please provide the following for each year of the Five-Year Reliability Plan:**

4
5 **(a) Revenue requirements of the investments by rate class**

6 **(b) Sales by rate class**

7 **(c) Customers by rate class**

8 **(d) Reductions in CMI by rate class**

9 **(e) Rate impacts by rate class**

10 **(f) Bill impacts by rate class**

11
12 **Response IR-97:**

13
14 (a) NS Power has not completed an analysis that produces revenue requirement, rates, or bill
15 impacts by rate class and is unable to provide a reliable result, due to the significant amount
16 of inputs and uncertainties regarding those inputs. Revenue requirement and Cost of
17 Service Studies (COSS) are produced during General Rate Applications (GRAs). These
18 studies are significant undertakings that are conducted on all of the investments made to
19 provide service for its customers. NS Power previously provided revenue requirement
20 changes (not by rate class) for the planned capital expenditures as part of prior ACE Plans;
21 however, the Board, in its 2022 ACE Plan decision provided the following:

22
23 While several years ago the Board directed the impact of proposed capital
24 spending on revenue requirement be included in the ACE Plan applications,
25 the Board now questions whether the information proves useful. As NS
26 Power has acknowledged, it is an estimate only. In the Board's view, given
27 the uncertainties surrounding estimates in the calculation, and the lack of
28 consensus on the inputs, the information does not appear to be useful.¹
29

¹ M10366, NS Power 2022 Annual Capital Expenditure (ACE) Plan, Board Decision, paragraph 148.

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NS Power agrees with the Board regarding the usefulness of this type of analysis given the lack of consensus on inputs and the uncertainties around estimates to produce a revenue requirement. In addition, NS Power is required to produce an Application for its COSS in 2026 regarding the continued use of the minimum system study and to address issues raised by Ms. Palmer in her 2026/2027 GRA evidence. The COSS Application could lead to changes in the apportioned rate base investment and its associated cost of service among rate classes approved in the 2026/2027 GRA. This in turn could lead to changes in class revenue responsibilities in the next GRA.

(b) Sales from the 2026 Load Forecast Report are provided in the following table:

	Sales (GWh)				
Class	2026	2027	2028	2029	2030
Residential	5,315	5,310	5,335	5,321	5,327
Commercial	3,165	3,008	3,003	3,014	3,031
Industrial	2,183	2,105	2,161	2,194	2,182
Other	131	236	258	258	258

(c) Estimated customer counts are provided in the following table. Note that the “Other” category has 6 customers in each year.

	Count (‘000)				
Class	2026	2027	2028	2029	2030
Residential	518.3	522.0	528.7	537.7	540.2
Commercial	48.6	47.3	47.8	48.2	48.6
Industrial	2.3	2.2	2.2	2.2	2.2

(d) As previously discussed in IR-7, NS Power does not assess reliability by specific customer classes or customer types. Reliability is tracked on both a system-wide basis and on an individual feeder basis regardless of the breakdown of rate classes. Accordingly, NS Power has not projected reliability improvements by rate class as part of the Five-Year Reliability Plan and consistent with the calculation of Performance Standards SAIFI and SAIDI (as

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1 well as CKAIFI and CKAIDI) the Company does not distinguish between customer types
2 under this plan.

3

4 (e) Please refer to part (a).

5

6 (f) Please refer to part (a).