

December 10, 2025

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PO Box 910
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Dear Ms. Myatt:

M12417 – Nova Scotia Power Inc. - CI C0071528 – FLISR Implementation – \$4,638,245

On August 6, 2025, Nova Scotia Power Inc. submitted a subsequent capital approval application in the amount of \$4,638,245 to the Nova Scotia Energy Board (Board). This application is related to the CI C0071528 - Fault Location, Isolation, Service Restoration (FLISR) Implementation project originally approved by the Board in the *2025 Annual Capital Expenditure (ACE) Plan*, Matter M12012. NS Power estimates the project will cost \$4,638,245; \$661,003 less than the Board approved original amount of \$5,299,248. The utility stated that the decrease was due to a change in the original scope of the project, which resulted in less equipment and installation work.

Board staff issued Information Requests (IRs) regarding this matter on August 28, 2025, and October 31, 2025, and received responses on October 2, 2025, and November 24, 2025, respectively. A request for confidentiality following Rule 12 of the *Board Regulatory Rules* was submitted by NS Power on August 6, 2025. The Board approves NS Power's request for confidentiality.

FLISR is a smart grid technology that restores electrical power flow during outages by identifying alternative paths. It employs automated switches, line monitoring sensors, communication systems, and data processing tools that work together to automate power restoration, reducing both the impact and duration of power interruptions.

In the application, NS Power noted that FLISR capabilities are identified in the NS Power 5-Year Reliability Plan as an advanced grid modernization initiative. These grid modernization investments are key to achieving the goals set out in the Plan. NS Power stated that, based on distribution feeder requirements, it will deploy three types of FLISR technologies. It identified a total of seven feeders across four locations within Nova Scotia, as outlined below:

- Cape Breton: The feeders include 85S-401 in Wreck Cove and 11S-411 in Eskasoni, which together serve approximately 5,500 customers.

- Halifax Regional Municipality: The identified feeders are 137H in Hammonds Plains and 129H in Kearney Lake, serving a combined total of 4,200 customers.
- Halifax Peninsula: The feeders include 2H in Armdale, 104H in Kempt Road, and 103H in Lakeside, which collectively serve approximately 13,000 customers.

Through IRs, the Board questioned the reasons for pursuing FLISR, how this investment will deliver value, and the methods to track its performance, particularly since other outage causes within the utility's control, such as defective equipment and tree contacts continue to represent a substantial share of the total Customer Hours of Interruption (CHI). Further, the Board asked why feeders with no history of issues, and with performance well below the Circuit Average Interruption Index (CKAIDI) and Circuit Average Interruption Frequency Index (CKAIFI) targets, were selected for FLISR upgrades in this project. The Board also questioned why the circuits identified as problem circuits in Matter M12185 were not selected.

In response to IR-3, NS Power provided CKAIDI and CKAIFI metrics for the feeders selected in this project, covering the period from 2020 through year-to-date 2025. Board analysis showed that if only the 2024 CKAIDI and CKAIFI performance targets set by the Board (M12185) are considered, all feeders proposed by the utility meet the 2024 targets except for the CKAIFI of feeder 137H-414. However, for analysis purposes, the Board considered the maximum performance values for the past five years (year-to-date). In that case, the following feeders do not meet the 2024 targets:

- Feeder 11S-411 (both CKAIFI and CKAIDI)
- Feeder 137H-414 (CKAIFI)
- Feeder 85S-401 (both CKAIFI and CKAIDI)

In response to IR-1(d), IR-5 and IR-10, NS Power noted that it believes appropriate measures have been implemented to address reliability concerns under increasingly challenging conditions. Projects such as FLISR are being pursued to further strengthen reliability and resilience.

The proposed Halifax region feeders, as noted above, were selected as a strategy to mitigate emerging risks in urban, customer-dense areas, such as motor vehicle accidents damaging utility infrastructure and construction-related incidents. The feeders selected for deployment of FLISR technology are located in high customer density areas of the grid, where outages can impact a large number of customers. The close proximity of many of these feeders to one another in this area provides alternative power flow sources for deployment. The density and complex network of feeders in this area make it an ideal candidate for the flexibility and network analysis functionality of centralized FLISR.

Feeders 85S-401 (Wreck Cove) and 11S-411 (Keltic Drive) have been identified as problematic circuits in the performance standards. Given their remote and rural locations, it takes longer to patrol and/or identify the location of a fault during emergency restoration, particularly where off-road lines exist. In addition, these feeders are radial lines, meaning there is no alternative path for power flow to customers in the event of a fault. The FLISR solution selected for these feeders will enable improved fault location, resulting in quicker responses to outages, as well as tighter segmentation, allowing more customers to be automatically restored when an unplanned outage occurs.



In response to IR-11, the utility stated that no single risk mitigation strategy can fully address all outage causes, including equipment defects or vegetation encroachments, so investments such as FLISR provide an additional layer of reliability improvement. In cases of vehicle accidents, off-ROW tree contacts, lightning strikes, animal contacts, equipment manufacturing defects, adverse weather, and other outage causes where many risk mitigation strategies are less effective, FLISR can provide reliability improvements for customers through faster switching, increased segmentation, and/or fault detection.

In response to IR-12, NS Power stated that FLISR benefits are well established and demonstrated in comparable utility implementations. It quantified high-level avoided time and potential operational cost savings. Historical data for the selected feeders was used to identify the annualized average number and duration of outages affecting more than 100 customers. The utility noted that the estimated reduction in outage duration conservatively ranges from 12 to 25 percent. Using the average avoided outage duration, PLT labour, and administrative and vehicle overheads, the resulting potential avoided operational costs from this FLISR installation are estimated at approximately \$16,500 annually.

Based on the information provided, the Board finds that the project represents a step toward grid modernization and will provide an additional reliability measure to improve service for the selected feeders, along with other potential benefits such as CHI reduction and cost avoidance, as noted above. Accordingly, the Board approves NS Power's capital project request in the amount of \$4,638,245.

Furthermore, the Board understands that the successful implementation of the FLISR technologies require specialized skills compared to traditional distribution. Communication networks and software installation and subsequently their effective operation and management are critical to achieving benefits from FLISR operations. It will also require implementation of new training, and procedures for maintenance and cybersecurity protection.

NS Power is currently undertaking multiple initiatives to improve reliability performance and meet the performance targets set by the Board. In response to the IRs, the utility offered a very general approach to measuring the collective performance of all reliability measures, rather than focusing specifically on this technology.

The Board notes that this project is part of the Advanced Grid Modernization investment identified in NS Power's Five-Year Reliability Plan. While the Board acknowledges that this solution is a step in the right direction, it remains concerned about how to measure and verify the effectiveness and improvement of the FLISR technologies, given that there are multiple reliability initiatives underway. Therefore, the Board encourages NS Power to develop metrics to measure and validate the technology's performance.

Yours truly,



Darlene Willcott, LL.B.
Member



NSEB APPROVAL SHEET

Project Title: FLISR Implementation

CI Number: C0071528

Date: August 5, 2025

Expenditure Profile			Type of Filing	
Year	Budget Amount	Project Estimate	☒	Capital Project Authorization
2025	1,578,360	1,195,855	☐	Unforeseen and Unbudgeted (U&U)
2026	3,720,888	3,442,389	☐	Planned & Advanced (P&A)
			☒	Subsequent Approval Item
			☐	Authorization to Overspend (ATO)
			☐	Scope Change
			☐	Final Cost (FIN)
Total	\$5,299,248	\$4,638,245		

COMMENTS

Submitted on behalf of NOVA SCOTIA POWER INCORPORATED



Authorized Signatory
Dave Pickles
Chief Operating Officer

DATE
August 5, 2025

Approved on behalf of NOVA SCOTIA ENERGY BOARD



DATE
December 10, 2025