Bay d'Espoir Penstock 1 Life Extension Project Update

Period Ended June 30, 2025

August 15, 2025

A report to the Board of Commissioners of Public Utilities

newfoundland labrador hydro

Contents

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1.0 Progress to Date

As part of ongoing project execution activities, the following update outlines the current status of key project plans, engineering deliverables, penstock fabrication progress, and site works.

Development, submission, and review of key project plans and procedures are effectively complete. Plans and procedures will be updated as needed throughout the project.

Plan submission and review timelines are being actively managed and are tracking in accordance with agreed timelines as per the contract agreement.

1.1 Fabrication

The contractor continues to advance the fabrication and delivery of the penstock sections (commonly referred to as "cans") as shown in Figure 1 through Figure 4. Fabrication and coatings have been completed on 26 of 27 cans. Barge load 2 arrived in St. Joseph's Cove on June 14, 2025, and all nine cans were delivered to the site on June 16, 2025. Nine of the ten remaining cans for barge load 3 are completed and ready for load out at the fabrication facility.

Figure 1: Can 27 and 28 Segment Fabrication

Figure 2: Completed Cans, Ready for Loadout

Figure 3: Barge 2 Offloading

Figure 4: Transporting Cans off Barge 2

Engineering work and the development of shop drawings for all can segments is complete, with submissions under review for approval. A summary of progress through the Reporting Period[1] is provided in Table 1.

[1] The reporting period refers to the monthly timeframe summarized in the Project Schedule Milestone Table and Detailed Cost Information attached as appendices to this report. To complete those reports, Newfoundland and Labrador Hydro ("Hydro") reviews the contractor(s)' progress reports to assess compliance with project milestones, timelines, and contractual obligations. The time between the end of the reporting period and the date of this report to the Board of Commissioners of Public Utilities ("Board") includes both the time taken by the contractor to prepare the report and the time Hydro requires to review and incorporate the data into the monthly summary. Hydro will provide the information in this report based on the reporting period, to align with the appendices, with additional updates for any material developments that occur after the reporting period up to the filing of the report.

Table 1: Cans Progress to June 30, 2025[2,3]

ME June, 25		Fabrication		Coatings		Delivered to
Barge	**Can #**	**In-Progress**	**Complete**	**In-Progress**	**Complete**	**Site**
1a	2 (Elbow)		X		X	X
	3		X		X	X
	4		X		X	X
	5		X		X	X
1b	6		X		X	X
	7		X		X	X
	8		X		X	X
	9 (Elbow)		X		X	X
2	10		X		X	X
	11		X		X	X
	12		X		X	X
	13		X		X	X
	14		X		X	X
	15 (Elbow)		X		X	X
	16		X		X	X
	17		X		X	X
	18		X		X	X
3	19		X		X	
	20		X		X	
	21		X		X	
	22		X		X	
	23		X		X	
	24		X		X	
	25 (Reducer)	X				
	26		X		X	
	27		X		X	
	28		X		X	

[2] Can 1 is no longer required due to a change in the splice location. However, because fabrication shop drawings had already been initiated prior to this change, the numbering sequence of the cans was not updated. As a result, Can 1 will be skipped in the final numbering.

[3] As of the date of this submission, the fabrication and coating of Can 25 has been completed, and final barge delivery has been received on-site.

1.2 Site Works

In order to track working points for penstock fabrication and installation, and to provide the location of the work along the length of the penstock, stations are used as a reference. The stations begin at the intake structure, 0+00 and continue the full length of the penstock to the powerhouse, station 11+58.[4] The replacement section starts at station 0+65 (Cut 1) and continues to station 4+28 (Cut 2). The refurbishment section starts at station 4+28 and continues the full length of the penstock to station 11+58.

On-site construction continued during the reporting period with excavation and demolition, can placement, as well as refurbishment activities. Excavation and demolition were completed for all remaining cans in the replacement section. Drain piping and bedding placement continued and were completed from Cans 7 to 18. Cans 5 through 12 were lifted, fitted, and tack-welded into place, with welding and non-destructive examination completed up to Can 8. Exterior coating product was applied to the circumferential weld joints in the replacement section up to Can 6.

There are a total of three planned temporary access points to be cut into the existing penstock. Work on all three temporary access points was completed during this reporting period. Scaffold platforms, stairs, and scaffolding tugger frames were completed at all temporary access points.

Buffing, cleaning, and Non-Destructive Testing ("NDT") of the existing welds on the lower refurbishment section, station 04+28 to 11+58, continued. Pressure washing of the interior of the cans continued between temporary access points two and three. Weld repairs also began on areas identified through the inspection process.

Figure 5 to Figure 11 show progress within the current reporting period.

[4] In these references X+Y, X= hundreds of meters, and Y= meters. 11+58= 1,158 meters from the intake.

Figure 5: Placement of Can 5

Figure 6: Preparing to Lift Can 7

Figure 7: Placement of Can 10

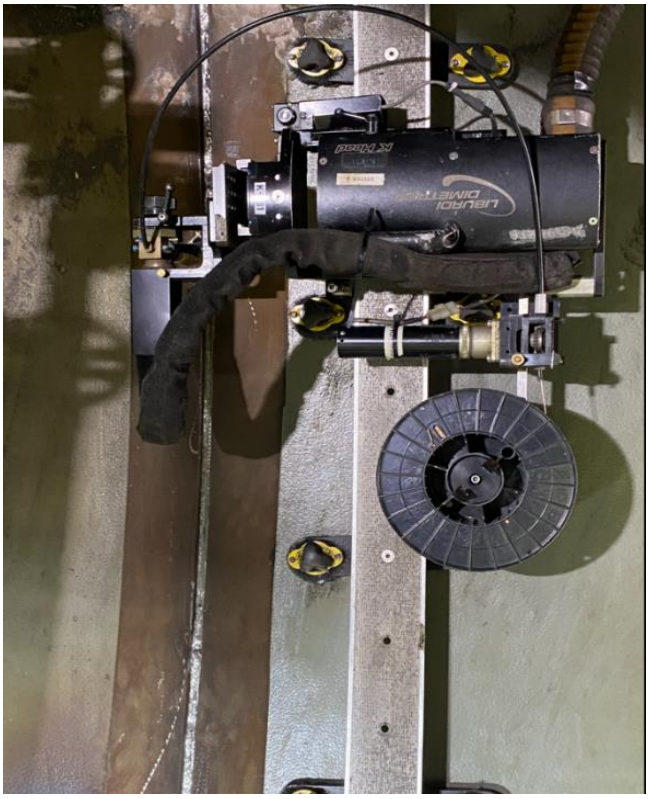


Figure 8: Automated Welding Set Up

Figure 9: Refurbishment Section Cut 2 to Temporary Opening #3

Figure 10: Typical Scaffold Set Up – Refurbishment Section

Figure 11: Exterior Coating Product on Circumferential Welds – Can 3

Since the end of the reporting period, fabrication and coating activities for all 27 cans have been successfully completed. This milestone marks a significant step forward in ensuring readiness for installation. The last barge shipment of cans has been delivered and transported to the site, finalizing the logistics and delivery phase for this major component. Delivery of the final shipment of cans allows both the risk of delays during transportation and the risk of damage during transportation to be closed.

2.0 Project Risks and Mitigations

2.1 Key Risks and Mitigations

A summary of key risks identified during the planning and execution of the project, as well as associated mitigations and status, are provided in Table 2.

Table 2: Key Risks[5,6]

Risk Title/Description	Mitigations	Status
Ability of penstock near toe of dam that was unable to be replaced to meet project performance expectations, including service life and removal of operational restrictions.	• Hydro is working with the EPCM[7] Consultant to assess alternative refurbishment options to achieve performance outcomes without replacing this section.	Open – discussions are ongoing with the EPCM Consultant regarding mitigations and options, as further outlined in Section 2.2.
Delay in penstock transportation.	• Schedule developed to include float for weather events, barge offloading structure constructed early, conducted route survey to identify any restrictions/issues with ground transportation.	Closed – final barge delivery complete.
Damage to penstock during transportation.	• Contractor to obtain the required information for load and barging tie-down and engage a third-party engineering firm to perform required calculations for proper loading and fastening of material on the barge. Procure and roll additional steel plate material.	Closed – final barge delivery complete.
Quantity/scope of weld repairs in the refurbishment section is higher than estimated.	• Begin cleaning and inspection of the refurbished section as early as possible. If required, increase resources for repairs, adjust shift durations and/or add a second shift.	Open – requirements reflected in contractors' schedule. The work required to sufficiently clean the existing welds for inspection has proven more difficult and labour intensive than contractor originally anticipated, which in turn has increased the duration of this scope. The contractor has implemented a recovery plan to address the increased effort to complete the work. Hydro will continue to monitor as work progresses. Further, based on inspections completed to date, there appear to be fewer repairs required than originally estimated.

[5] This table is intended to highlight only key risks that may impact project success. Hydro uses a more comprehensive project risk register to facilitate risk management. Hydro regularly updates the risk register, and should a risk escalate in ranking or a new high risk be identified, it will be added to this table in future updates.
[6] Risks which have been shown as closed in a previous report have been removed.
[7] Engineering, Procurement and Construction Management ("EPCM").

Risk Title/Description	Mitigations	Status
Penstock coating quality and/or application efficiency.	• Quality concerns are to be mitigated by the Contractor implementing a quality assurance/quality control program, development of an Inspection Test Plan, and using National Association of Corrosion Engineers-qualified inspectors to perform testing on the surface preparation/blasting and coating application, as well as including on-site manufacturer support of the coating product. Contractors with previous experience in applying the specified coating are to be selected. Robotic blasting and coating application methods are to be used to mitigate quality concerns and provide more certainty on application rates. Backup equipment to be on site in case of breakdown.	Open – requirements included in the contract and reflected in the contractors' schedule. Hydro will continue to monitor as work progresses.

2.2 Geotechnical Assessment and Execution Planning

As indicated in previous reports, the adjustment to relocate the splice location will result in a short section of the existing penstock, approximately 17 meters, remaining in place. Hydro, in collaboration with the EPCM consultants, has been further developing alternatives to refurbish this section of the penstock to ensure it meets project performance criteria, including expected service life and the removal of any existing operational restrictions. During the reporting period, the recommendation for phased array ultrasonic testing inspection on the longitudinal weld joints was accepted, and the contractor was directed to proceed with the planning to get the work completed.

In July, subsequent to the end of the reporting period, the additional NDT was completed in conjunction with the other NDT testing carried out in this section as part of the project scope. Additional Phased Array Ultrasonic Testing was completed on the upper 17-meter section of Penstock 1. Initial analysis confirms that no major issues or defects were identified, providing further assurance on weld integrity and structural performance. These results significantly reduce the severity of the risk that refurbishment of this section will not meet project performance criteria.

The potential impact on project cost and schedule remains under evaluation, but is not considered to be significant at this time. The engineering consultant is formalizing the final refurbishment strategy based on the results of the additional inspection. It is still anticipated that the required refurbishment work in this section will be completed within the current construction window, and it will not impact the planned return to service of the assets. Hydro will continue to provide updates in subsequent reports until a preferred refurbishment approach is selected and any cost and schedule impacts are confirmed.

3.0 Project Schedule

The Contractor's Milestone Schedule is included in Appendix A. It was noted that the contractor was starting to trend behind schedule. Hydro requested a recovery plan and schedule, which was provided and implemented by the contractor. Based on progress to the end of June, and as a result of the recovery plan, the contractor is slightly ahead of schedule to meet the project's approved milestones and overall timeline for project completion in the fourth quarter of 2025.

4.0 Project Budget

The Board approved a revised project budget of $65,876,021. Hydro is progressing the work in alignment with the approved budget, with no deviations noted for the reporting period. The project remains on track to meet approved cost and schedule targets, and Hydro continues to actively manage risks to maintain compliance with all regulatory requirements.

5.0 Project Expenditures

As of June 30, 2025, the project expenditure forecast remains below the approved project budget. The prior indication of a potential forecast increase in future reporting periods has been reassessed and is no longer expected based on changes identified to date. While Hydro is in a strong position and reasonably confident in its outlook, construction risks remain and will continue to be managed closely.

Appendix B provides further detailed cost information, including an overview of costs incurred to June 30, 2025. Please note that Appendix B has been redacted as it contains commercially sensitive information.

6.0 Conclusion

As of the end of the reporting period, the Penstock 1 Life Extension Project remains on track to achieve the project deliverables, meet approved cost and schedule targets, and Hydro continues to actively manage risks to maintain compliance with all regulatory requirements.

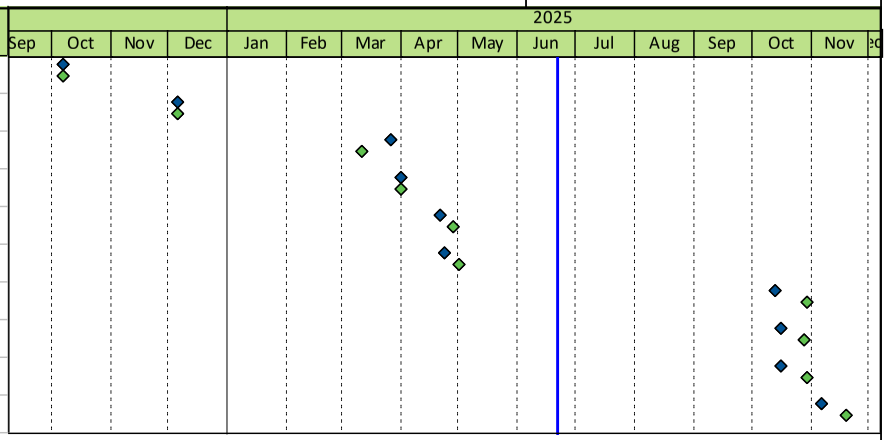
Appendix A

Project Schedule Milestone Table

BDE Penstock No. 1 Refurbishment
Project Schedule

Data Date: 22-Jun-25

Activity Name	Baseline	Forecast	Variance
LNTP Execution Approval	07-Oct-24	07-Oct-24 A	0d
Contract Award	06-Dec-24	06-Dec-24 A	0d
Mobilization to Site	12-Mar-25	27-Mar-25 A	-11d
Penstock Site Handover to Contractor	01-Apr-25	01-Apr-25 A	0d
Start of Replacement Section Works	28-Apr-25	22-Apr-25 A	6d
Start of Refurbishment Section Works	01-May-25	24-Apr-25 A	6d
Completion of Replacement Section	29-Oct-25	13-Oct-25	13d
Completion of Refurbishment Section Works	28-Oct-25	16-Oct-25	10d
Completion of Construction Works	29-Oct-25	16-Oct-25	9d
Completion of all Works and Demobilization	19-Nov-25	06-Nov-25	11d



Notes:

1 The Project Schedule Report presents a forecast that indicates a variance against the baseline. Forecasts are data-driven and subject to fluctuation as the project evolves. The variance represents a snapshot of the project's schedule status at a specific point in time. As progress continues and additional information becomes available, adjustments will be reflected accordingly.
2 Asterisks in the milestone schedule serve as visual indicators of scheduling constraints, which are integral to the Critical Path Method in project scheduling. These constraints are highlighted because the milestone table is an embedded component of the overall project schedule.
3 Blue line in the milestone schedule represents the project status date.

◆ Milestone
◆ Baseline MS

Layout:MP:PEN1_PUB Report MS
Filter:TASK filter: MP_PEN1_PUB MS Table_2.

Appendix B

Detailed Cost Information

Redacted

Redacted