Q. **Reference: Attachment 1, page 8, 4.0 Alternatives.**

a) Has Hydro reviewed and updated all the options identified in the original application?

b) Did Hydro consider deferral of the project given the significant increase in costs?

A. **a)** The original application submitted that the section replacement and weld refurbishment option (Option 3) is the only option to fully address the design issues in the 17-foot diameter section, and provides the lowest risk rating and the highest level of reliability. It is the only technically feasible option to return the penstock to safe, reliable operation. This was acknowledged by the Board of Commissioners of Public Utilities in its Order.[1] Option 1 (Status Quo) presents an unacceptable risk given the history of ruptures, and the three other options presented in the original application remain not feasible as detailed in the original proposal and recognized in the subsequent Order. As a result, the cost estimates for these options were not updated. An additional option involving the application of a structural lining was discussed during the original request for information process. As per Attachment 1 of the update,[2] Hydro requested Kleinschmidt review the assessment of the liner options with updated pricing reflecting the escalation and scope change. The conclusion of the updated analysis was consistent with the original recommendation: that the installation of a structural lining is expected to cost more than a steel replacement, has potentially higher performance risks than replacement, has a shorter expected service life, and potentially impacts generation.

b) Deferral of the project was considered and was found to be imprudent. Deferral of the project would effectively translate to the status quo option, which as noted above, presents unacceptable risks. Annual inspections, maintenance, weld refurbishment and other required repairs would have to continue; therefore, a deferral increases the likelihood of failure as the penstock ages. The current operational restrictions of operating Penstock 1 in

[1] Board Order No. P.U. 6(2023).
[2] "Application for Approval of Capital Expenditures for Section Replacement and Weld Refurbishment for Bay d'Espoir Hydroelectric Generating Facility Penstock 1," Newfoundland and Labrador Hydro, October 16, 2024, att. 1.

the rough zone would also continue, restricting Hydro's flexibility in economically and efficiently operating Units 1 and 2. This option was deemed to present an unacceptable risk given the history of ruptures and the potentially significant costs and reliability impacts of a rupture. Additionally, Hydro has incorporated the outage associated with Penstock 1 refurbishment into the provincial generation plan. Changes to this schedule may have implications to Hydro's scheduled capital improvements and maintenance plan for assets both within and outside Bay d'Espoir. With the above risks and the potential for additional escalation pressures on the construction costs, Hydro recommends proceeding with the project as currently planned.