

1 Q. **Reference: Schedule 1 – Upgrade Report – Penstock 1 Life Extension – Bay d’Espoir.**

2 The Application states in Appendix A, page 8 of 43, item 6, that Kleinschmidt “advised that the
3 soil backfill was not required for the structural integrity of the penstock in this location.” What is
4 the present position of Hydro on the requirement of backfill for Penstock 1 given the input from
5 Hydro’s three consultants?

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8 A. Newfoundland and Labrador Hydro (“Hydro”) is aligned with the analysis of the consultants
9 regarding the backfill on Penstock 1. The reference cited from Appendix A¹ refers to
10 Kleinschmidt’s opinion on the necessity of backfill at a specific location of the penstock at that
11 time; it does not reflect the consultant’s position on the necessity of backfill in general. Backfill
12 is important to the structural integrity of a penstock in reducing stresses, providing protection,
13 and mitigating thermal stresses. The observed asymmetry and sloughing of some regions of the
14 penstock backfill have been determined to not be significant contributors to the recent cracking
15 and ruptures experienced in Penstock 1. The backfill profile will be reviewed as part of the
16 proposed design process; however, work to modify the existing backfill profile will not improve
17 the penstock’s reliability at present.

¹ “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, December 7, 2022, sch. 1, app. A, p. 8, Item 6.