

1 Q. Is Hydro aware of any likely barriers, including costs, that are significant enough to rule out
2 Holyrood as a competitive option for providing a backup source supply for the medium to
3 long term.

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5 - If yes, please identify and describe them.

6 - If no, please describe the work and effort required to identify any such barriers.

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8 A: Newfoundland and Labrador Hydro (“Hydro”) is proposing to operate in line with the North
9 American Electric Reliability Corporation (“NERC”) requirements for operating reserves as
10 discussed in Reliability and Resource Adequacy Study¹. The primary barrier preventing
11 Holyrood from becoming a viable cost-effective option as a backup source for the medium-
12 to long-term is the unit start-up time. Hydro’s experience is that typically a minimum of
13 eight hours are required to transition a Holyrood unit from hot-standby state to power
14 generation. In order for a Holyrood unit to be included in Hydro’s operating reserve mix, as
15 10-minute and 30-minute reserve, it would have to be in an on-line state generating at
16 minimum load. This could potentially cost upwards of \$280,000 per day² to maintain the
17 unit in a ready state to position the system for a contingency. Alternatively, if the unit was
18 to be held in a hot standby state and placed online only following the contingency (i.e., due
19 to Holyrood start-up time, it must be excluded from 10-minute and 30-minute reserve)
20 there could be outages required to customers.

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22 It is conceivable that the time to transition a unit from hot standby to generate mode could
23 be reduced from that noted above; however, it would not be within or near the window of
24 10-minute and 30-minute reserve requirements. It should be noted that the existing eight-
25 hour time frame has been the historical experience when the unit is being exercised

¹ “Reliability and Resource Adequacy Study,” Vol. I, Section 3.3.1.2, at p. 15. Northeast Power Coordinating Council requirements state that compliant utilities will ensure that “Each Balancing Authority shall have ten-minute reserve available to it that is at least equal to its first contingency loss.”; and “Each Balancing Authority shall have thirty-minute reserve available to it that is at least equal to one-half its second contingency loss.”

² At 70 MW minimum loading, oil price of \$100/bbl. and a fuel conversion rate of 600 kWh/bbl.

1 through regular generation, and this may not be the case go-forward. One should be aware
2 a risk exists that the exact start-up time when in hot standby could vary and the variability
3 of time to being online is uncertain.

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5 Another lower cost option would be that a Holyrood unit is not maintained in hot standby,
6 but is maintained in cold standby. In this instance, it could take multiple days to bring a unit
7 online exposing the power system and Hydro's customers to a risk of extended outages in
8 the event of a contingency.

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10 Regarding equipment suitability for longer operation, Hydro's current asset condition
11 assessment information does not identify any related barriers to Holyrood providing a
12 backup source supply for the medium- to long-term; however, these condition assessments
13 were completed based on a planned end of steam production of March 31, 2021.

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15 Inside of the barriers and constraints noted above, Holyrood could continue to operate
16 with continued capital investment to sustain and renew assets as they age. Similarly,
17 Holyrood operation and maintenance costs would continue, including the need for
18 appropriate staffing.

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20 To answer the cost question properly, as discussed in the response to PUB-NLH-048 part c,
21 a third-party assessment would be required. This assessment would be an extension to that
22 discussed in Hydro's response to PUB-NLH-049, which would determine the required
23 capital investments as part of the asset management plan. It is envisioned that this
24 combined work package could be completed in approximately six months dependent on
25 funding approval and consultant availability, with a combined order of magnitude cost
26 estimated at \$350,000.

1 Considerations for this assessment would include:

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3 • Required Capital Investments/Asset Management Plan: study discussed in response
4 to PUB-NLH-049;

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6 • Environmental Aspects: currently, Holyrood operates in compliance and a renewed
7 Certificate of Approval could be possible as long as regulations do not change;

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9 • Human Resource Planning/Staffing Requirements;

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11 • Fuel contract extensions, fuel storage tanks, and potentially the availability of
12 tankers small enough to meet our dock design criteria;

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14 • Continued boiler assessments and overhaul—similarly for other critical equipment;

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16 • Standby requirements and expectations including start-up times;

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18 • Hot standby or cold standby and costs, including auxiliary steam source and plant
19 heating; and

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21 • Equipment preservation and lay-up to suit standby operation.