

1 Q. Please explain the impact that the operational and maintenance issues associated
2 with the following had on the fuel conversion rates for Holyrood in 2013 and 2014:

- 3 • The high content aluminum and silicon oil consumed by the Holyrood
4 thermal generating station in 2013.
- 5 • Unit 1 being out of service for much of the year due to damage incurred on
6 January 11, 2013.
- 7 • Maintenance and repairs associated with the January 2014 outages.
- 8 • Any changes in the dispatch of the Holyrood plant or the requirement to
9 maintain sufficient generation reserves on the Island Interconnected System
10 in 2014.

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13 A. It is difficult to quantify the impact that each of the above operational and
14 maintenance issues had on the Holyrood fuel conversion rates in 2013 and 2014.
15 However, Hydro does provide the following qualitative explanation for each.

16

17 *"The high content aluminum and silicon oil consumed by the Holyrood thermal*
18 *generating station in 2013."*

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20 While the higher content of aluminum and silicon in the oil consumed at the
21 Holyrood thermal plant resulted in burner maintenance issues, this had no effect on
22 the fuel conversion rates.

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24 *"Unit 1 being out of service for much of the year due to damage incurred on January*
25 *11, 2013."*

Unit 1 has the best fuel conversion performance at the plant and the loss of this unit, with all other things being equal, would lower the overall plant conversion rate. However, with Unit 1 unavailable, the other units were operated at higher levels of generation than they otherwise would have been for system security reasons. The fuel conversion rate of thermal units increases at higher levels of generation.

"Maintenance and repairs associated with the January 2014 outages."

The lower generating levels experienced at Unit 3 in December 2013 and January 2014¹, in isolation, would have lowered the overall plant conversion rate. However, with Unit 3 derated, the other units were operated at higher levels of generation than they otherwise would have been for system security reasons. The fuel conversion rate of thermal units increases at higher levels of generation.

Each trip of the units during this period would have lowered the overall plant fuel conversion rate due to the energy lost during the trip (i.e., lost steam/heat) and the additional energy required (i.e., fuel usage) to get the unit back online.

"Any changes in the dispatch of the Holyrood plant or the requirement to maintain sufficient generation reserves on the Island Interconnected System in 2014."

As indicated in Hydro's Amended Application, Volume I Section 2: Regulated Activities, page 2.74, lines 26 to 27 *"All things being equal, a thermal unit operates most efficiently at higher levels of generation."* Any changes in dispatch to increase the generation levels at the Holyrood units to maintain sufficient generation

¹ As a result of the unit derating due to the forced draft fan motor failure.

- 1 reserves on the Island Interconnected System in 2014 would have resulted in an
- 2 improvement in overall plant efficiency.