

1 Q. Reference: Hydro's 2016 Standby Fuel Deferral Application, February 5, 2016,
2 response to Request for Information NP-NLH-003. Hydro states:

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4 *"...Hydro uses guidance from the results of the Vista Decision Support System which*
5 *provides recommended hydro and thermal generation schedules using simulations*
6 *of all historic inflow scenarios. In addition, other factors are taken into consideration*
7 *such as: weather and load forecasts, snow pack, distribution of the storage within*
8 *the reservoir system, and the available thermal capacity."*

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10 Please describe the process whereby the Vista Decision Support System ("Vista")
11 determines whether additional thermal production is required to support hydraulic
12 reservoir levels and indicate if there are circumstances when management
13 intervention in the process occurs.

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16 A. Hydro's Vista model simulates the system to optimize the dispatch of the
17 generating units within the known physical and operational constraints and with
18 consideration of the uncertainty of reservoir inflows. Vista is a decision support
19 system; engineers use its guidance as well as other factors to prepare the weekly
20 generation guidelines.

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22 Vista was originally developed to model only hydroelectric production and that is
23 still its strength. In the Hydro model, Holyrood is modelled with a minimum and
24 maximum capacity and a cost. The user enters the minimum schedule as dictated
25 by reliability and the maximum based on unit availability.

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1 Typically, Hydro simulates a three to four year period starting in the current week
2 with actual water levels in the reservoirs, and considers 56 historic scenarios which
3 represent 56 possible futures. Vista takes into account the load and target end
4 water levels and then determines the optimal scheduling of each unit in each
5 weekly time step for each future. It will maximize the use of available hydro to
6 minimize the cost of running the thermal units, while keeping sufficient water in
7 storage for future periods.

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9 If reservoirs were low, as they were in early 2016, Hydro closely reviews the
10 thermal use recommended by Vista, both with the probabilistic output and by
11 examination of the recommended thermal use in the historic dry sequence, prior to
12 preparing the water management guidelines. Management intervention would
13 occur and Vista recommendations could be overridden or adjusted if the results
14 arising from Vista did not appear to accurately reflect any situations that Vista may
15 not be able to consider.