

1 Q. On page 3 of the Report it is stated that Hydro initiated a review of its generation
 2 capacity shortfalls experienced in January 2014 and that it expanded its 2013 Base
 3 Case analysis to include sensitivities relating to weather and reduced thermal
 4 generation availability. On page 4 it is stated that as one of the sensitivities Hydro
 5 increased the thermal outage rate assumptions. On page 22 of the Report it is
 6 stated that DAFOR was increased by 2% and UFOP was increased by 10%. Provide
 7 the actual DAFOR and UFOP for 2003-2013 and explain how Hydro determined
 8 what the appropriate increase should be. In the response state whether Hydro
 9 completed any sensitivities around the selected increased outage rate. If it did so,
 10 provide a copy of the sensitivities completed.

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13 A. Hydro used the following forced outage rates for Holyrood, Hardwoods and
 14 Stephenville:

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Unit/Class of Units	Derated Adjusted Forced Outage Rate, %	Utilization Forced Outage Rate, %
Combustion Turbine (CT)	N/A	10.62 (Also 20.62 as a sensitivity)
Holyrood	9.64 (Also 11.64, as a sensitivity)	N/A

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17 The recent performance of Holyrood, Hardwoods, and Stephenville are as follows:

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19 Holyrood (2007 - 2012) – 10.39% (Holyrood 1 Forced Outage Rate for 2013 is
 20 consider to be an outlier). 9.64% is being used as a base, with 11.64% as a
 21 sensitivity.

100 MW Combustion Turbine Generation - Holyrood**Page 2 of 3**

1 Hardwoods (2008 - 2013) – 18.95% 10.62% is being used as base, with 20.62% as a
 2 sensitivity.

3 Stephenville (2008 - 2012) – 11.18% 10.62% is being used as base, with 20.62% as
 4 a sensitivity.

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6 By inspection, from these figures, it was decided to use +2% DAFOR at Holyrood and
 7 +10% UFOP for Stephenville and Hardwoods as sensitivities. Hydro did not
 8 complete any sensitivity analysis around the selected increased outage rate.

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10 The actual DAFORs and UFOPs for 2003-2014 are provided below.

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UFOP (%)	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 YTD*
Combustion Turbine Units (Gas Turbines)												
Stephenville	1.51	6.44	7.08	1.37	5.08	9.77	12.70	5.83	16.41	N/A ³	50.00	7.97
Hardwoods	1.01	4.81	3.37	10.32	12.68	13.23	16.84	19.34	10.20	35.14	15.94	13.62

DAFOR (%)	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 YTD*
Thermal Units												
Holyrood 1	14.56	4.72	0.61	9.94	38.58	32.35	32.52	4.22	4.21	4.73	75.70	9.52
Holyrood 2	3.22	13.51	9.18	31.65	19.05	3.54	5.50	5.28	3.64	0.77	6.44	0.84
Holyrood 3	3.67	4.21	11.80	3.25	6.57	8.80	7.69	6.20	21.80	0.77	12.77	11.51
Holyrood Plant	7.26	7.44	7.32	13.22	23.59	15.65	17.38	5.07	7.88	5.98	36.58	6.81

*Data to May 31, 2014

While the DAFORs and UFOPs above reflect Hydro's actual experiences, there is a possibility some of the outage rates could have been lower. The time of year at which a forced outage occurs can dictate the urgency for the repair and the time taken to return a unit to service. When a forced outage occurs during the winter peak period, all efforts are taken to repair the unit and have it available for service as soon as possible as it could be required to supply customer load. In these situations time is of the essence and often the speed of repair takes priority over cost. On the other hand, if a forced outage were to occur at the end of the winter season, the urgency for completing the repair would not be as great as the unit may not be required for several months (presenting an opportunity to allow a lower repair cost to take priority over the speed of repair without adversely impacting system reliability but resulting in a higher DAFOR or UFOP). The data provided above reflects this reality.