

1 Q. List all investigations/analyses undertaken or to be undertaken by Hydro's internal
2 or external resources on the power outages and system events that occurred in
3 December 2013 and in January 2014. Include in the answer the purpose, scope,
4 anticipated date of completion of the analysis/investigation and the party
5 completing each.

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8 A. Several analyses and investigations have been initiated or are planned during the
9 course of the Hydro's internal review to assist in identifying lessons learned, causal
10 factors, immediate term actions, and opportunities for improvement. The following
11 list is an interim assessment, and other analyses may be identified during the
12 course of Hydro's internal review. However, the key activities currently underway
13 or imminent include the following:

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15 a) Transmission/terminal station failures: Structured root cause analyses will
16 be completed in relation to the B1L17 breaker failure in Holyrood; the
17 failure of T1 transformer in Sunnyside; the 230 KV bus lockout in Sunnyside;
18 and the T5 transformer lockout at Western Avalon. These are in progress
19 and are being facilitated by an external expert in root cause and system
20 failure analysis. The initial outcome will be an identification of probable
21 cause factors, and the second stage will involve the determination of
22 appropriate corrective actions;

23 b) Thermal generation operations and asset management: Hydro has
24 undertaken an internal review of its thermal generation operations and
25 asset managements and has engaged the support of external resources
26 experienced in thermal generation operations and maintenance to provide

an independent assessment on Hydro's asset management practices and any possible opportunities for improvement;

c) Protection and control and overall system reliability: Hydro has engaged an external resource extensively experienced in electricity system protection and control and overall system performance to provide an independent assessment on Hydro's protection and control systems and the factors that potentially contributed to the system events more generally;

d) Load forecasting and generation planning: Hydro has engaged a consultant to complete an external review of its load forecasting and generation planning methodologies. Please refer to Hydro's response to PUB-NLH-010 for additional details; and

e) Lessons learned: Several groups are conducting lessons learned sessions in relation to various aspects of system operations and maintenance and the system restoration activities executed by Hydro during the system events and power outages.

Where possible, appropriate changes and corrective actions will be implemented during the course of Hydro's internal review. It is also expected that other analyses or initiatives will require further assessment or longer time lines for implementation. The above review is anticipated to be completed towards the end of Q1 2014.