

1    Q.    At page 2 of Hydro's Application, it is stated: "It has also identified that a major  
2    contributor to the loss of lubrication oil was a failure of the DC oil pump set to  
3    deliver sufficient lubricating oil when the two AC oil pumps shut down due to the  
4    disturbance of the power system. The investigation has identified that weekly  
5    testing of the DC oil pump set was completed as required consistent with the  
6    original equipment manufacturer guidelines. However, it was found that the test  
7    procedure lacked a check that would have identified the particular failure  
8    experienced within the pump set which made the pump unable to deliver the  
9    required oil flow to the bearings. The test procedure has now been enhanced."

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11    Further, at page 11 of AMEC's Assessment Report (Appendix D) it is recommended  
12    that the root cause of the Unit 1 DC lube oil pump failure should be identified and  
13    mitigated.

14

15    (i)    This incident occurred on January 11, 2013, almost 3 months ago. Has the  
16    root cause of the failure of the DC oil pump to deliver sufficient lubricating  
17    oil when the two (2) AC oil pumps shut down been determined by Hydro or  
18    by its consultants? If the answer is "yes", identify and explain the root cause.  
19    If the answer is "no", is the identification and explanation of the root cause  
20    within the scope of the final root cause analysis report, referred to at page 2  
21    of Hydro's own report in support of this project?

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23    (ii)    Have, other than the root cause, the contributory causes of the failure of the  
24    DC oil pump to deliver sufficient lubricating oil when the two (2) AC oil  
25    pumps shut down been determined by Hydro or its consultants? If the  
26    answer is "yes", identify and explain the contributory causes. If the answer is  
27    "no", is the identification and explanation of the contributory causes within

1 the scope of the final root cause analysis report, referred to at page 2 of  
2 Hydro's own report in support of this project?

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4 (iii) Has Hydro prepared or approved a document (or series of documents)  
5 setting out the scope of the final root cause analysis report? If the answer is  
6 "yes", provide a copy of this document (or documents). If the answer is "no"  
7 please explain how and when the scope of this report will be determined.

8

9 (iv) Who is preparing the final root cause analysis report?

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11 (v) Hydro indicates that the final root cause analysis report will be submitted to  
12 the Board of Commissioners of Public Utilities when it is completed. When is  
13 the final root cause analysis report expected to be completed? Will Hydro be  
14 objecting to or opposing the disclosure of the report to the intervenors,  
15 including the Island Industrial Customers?

16

17 (vi) Is Hydro confident that the DC oil pumps for Unit 2 and Unit 3 are not at risk  
18 of the same or similar type of failure as was experienced for the DC oil pump  
19 for Unit 1? If the answer is "yes", identify and explain the factors giving rise  
20 to this confidence. If the answer is "no", identify and explain how this risk is  
21 intended to be addressed.

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23

24 A. (i) No, Hydro has not conclusively determined the root cause(s) of the failure of  
25 the DC oil pump, as the investigation is ongoing. Numerous checks and tests  
26 have been carried out as part of the investigation on the DC pump. It has  
27 been found that the DC pump motor was not running at the required speed.  
28 Further work is required to determine the contributing factors. As well,

1                   further operational tests are required and the final root cause analysis  
2                   report will outline all findings and resulting corrective actions.

3

4                   (ii) The investigation is ongoing, and details of all contributory causes will be  
5                   included in the final report.

6

7                   (iii) The scope of the investigation covers all of the potential causes of the failure  
8                   within the Holyrood Thermal Generating Station. This is in accordance with  
9                   the TapRooT methodology, a recognized and widely used format for root  
10                  cause analysis across numerous industries.

11

12                  (iv) The root cause analysis is being prepared by a team of Hydro staff who are  
13                  trained in the TapRooT methodology, with review by external consultants  
14                  with extensive TapRooT expertise.

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16                  (v) Although the investigation continues, it is anticipated that the final root  
17                  cause analysis report will be available by May 31, 2013. At this time, Hydro  
18                  has not determined whether the report will be widely distributed.

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20                  (vi) A modified weekly test procedure for the DC lube oil pumps for all units is  
21                  now in effect, based on the findings of the Unit 1 failure root cause analysis  
22                  to date. Hydro is confident that should a similar issue develop with a DC  
23                  lube oil pump from another unit, the modified test will identify the issue and  
24                  appropriate corrective action will be undertaken.