

1 Q. At page 8 of AMEC's Assessment Report (page 18 of 21 of Appendix D), it is stated:
2 "It should be noted that the unit was not barred after the shutdown so it probably
3 also subsequently suffered unequal cooling."

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5 Further, at page 10 of AMEC's Assessment Report (page 20 of 21 of Appendix D), it
6 is stated: "Given the unit was not barred after the shutdown and probably suffered
7 uneven cooling and hotspots caused by rubs, the rotor should be checked for
8 straightness."

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10 (i) What is meant by the term "barring" of the unit?
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12 (ii) Would it have been normal operating procedure for Hydro personnel to
13 have barred the unit after the January 11, 2013 shutdown of Unit 1, and if
14 so, within what time frame following the shutdown?
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16 (iii) If the answer to (ii) is in the affirmative, why was the unit not barred in this
17 instance?
18
19 (iv) If the answer to (ii) is in the negative, will barring of the unit in the event of
20 a shutdown be part of Hydro's normal operating procedure in the future?
21
22 (v) How much of the currently-estimated project cost is attributable to the non-
23 barring of the unit?
24
25 (vi) Is it possible that further, at present unascertained costs will be incurred to
26 address the effects of the non-barring of the unit?

1 A. (i) Barring means slowly turning the turbine rotor by a motor.

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3 (ii) No, as noted in the responses to (iii) and (iv) below.

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5 (iii) The normal operating procedure for barring requires the unit to come to
6 rest with lubrication oil being supplied to healthy bearings. On January 11,
7 2003, the unit came to rest quickly, without lubrication oil and with the
8 bearings having been damaged.

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10 (iv) Barring of the unit in the event of a shutdown is already part of Hydro's
11 operating procedure, and it occurs automatically on shutdown.

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13 (v) There cannot be any project cost attributable to non-barring as it was not
14 possible to follow this procedure January 11, 2003 due to seized bearings
15 and unavailability of bearing oil to lubricate the unit.

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17 (vi) No.