

1 Q. Re: Burnt Spillway Refurbishment Volume II (Tab 6)
2 At page 7, Hydro outlines that, "A review of work order history indicates that there
3 have been at least four occasions when a gate could not be opened or closed due to
4 cold temperatures, ice accumulation, or hardening of the grease for the gate hoist
5 grooves stems." Is the hardening of the grease for the gate hoist grooves stems also
6 associated with cold? If this is the case, and cold appears to be an issue of concern,
7 how does the anticipated refurbishment address the issues of ice accumulation,
8 cold temperatures and hardening of grease?

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11 A. Hardening of the grease for the gate hoist groove stems is associated with cold and
12 with deterioration due to direct exposure to the weather. The screw stems at Burnt
13 Dam Spillway do not have covers to protect them from the weather or particulate
14 that may be blown into the grease by the wind. It is strongly suspected that during
15 the winter of 2006, when the screws did not operate properly because of hard
16 grease, the hardening of the grease at that time was caused by both factors. It is
17 also suspected that contamination of the grease made it more susceptible to the
18 adverse effect of cold temperature. When low temperature grease is used and it is
19 protected from the elements by covers, the hardening effect of cold temperatures
20 should be insignificant.

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22 Refurbishment of the gates will address the issues of ice accumulation and
23 hardening of the grease related to the stem screws. Installing protective covers over
24 the screws will protect them from particulate contamination caused by exposure to
25 environmental conditions.

1 Refurbishment of the gear boxes and drives will include replacement of the seals
2 and gaskets and installation of internal heating elements. Water ingress will be
3 minimized by the new seals and gaskets and any moisture that does enter over time
4 will be prevented from freezing in winter by the heaters.

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6 In 2013, the third year of the refurbishment program, and under a separate capital
7 proposal to be submitted to the Board in 2012, it is planned to refurbish the gates
8 and seals to minimize water leakage through the seals and the resultant
9 accumulation of ice in the gains and around the rollers.

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11 The work will also include refurbishment of the gate heating system to minimize the
12 accumulation of ice on the front of the gates, in the gains, and on the rollers.