

1 **Q. Re: Stationary Battery and Charger Replacement Program, Vol II, Tab 23.**

2 Why are the 48V Batteries at Deer Lake, Hinds Lake and Happy Valley being
3 replaced when their capacity has not fallen to eighty percent (80%) of its rated
4 capacity as recommended by IEEE standards 450 and 1188, the standard referenced
5 at page B-50 at Vol 1.?

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8 **A.** Batteries deteriorate over time, usually at an accelerating rate. IEEE Standards 450
9 and 1188 both state that a battery should be replaced at 80% capacity, and that a
10 battery that has reached this level is in an accelerated stage of deterioration. As
11 well, IEEE Standard 450 recommends replacing the battery within one year when
12 the battery reaches 80% capacity. As discussed in the report submitted with
13 Hydro's 2010 Capital Budget Application, conductance testing is used as a proxy for
14 capacity testing as it is less disruptive and causes less stress to the battery. The
15 significant conductance changes in these batteries, as measured in 2007 and 2008,
16 and the age of the batteries, both indicate a need for replacement. Experience
17 indicates that these batteries will meet the criteria in 2010.