Q. **Project C-56, Replace Diesel Units**

On page 4 of the report filed at Volume II, Tab 21, Hydro states that the project is justified on the established criteria for reliability to replace gensets when they approach 100,000 operating hours. Provide details of the source for this information, as well as specifics about the risk increase after 100,000 hours (if known).

A. The source of the 100,000 hour replacement criteria is based upon an historical overhaul cycle of 90,000 hours and an update to 100,000 hours following a maintenance review in 2003.

Prior to 2003, the engine replacement criteria was based upon an engine being replaced after five 15,000 hour overhauls plus an additional 15,000 hours of running time or 90,000 hours in total. In 2003, following a maintenance review, the overhaul interval was increased to 20,000 hours and replacements were moved to being completed 20,000 hours after the fourth overhaul or 100,000 hours in total.

In 2007, a survey was completed of other Canadian utilities to determine how Hydro aligned with respect to engine replacement criteria. The following outlines data received at that time.

- Hydro-Québec – 1,200 RPM and 1,800 RPM units are replaced after three overhauls or 84,000 hours (28,000 hour overhaul interval);

- Hydro One - Three overhauls and then replace. (1,800 RPM at 20,000 hour overhaul interval or 60,000 hour replacement, 1,200 RPM at 42,000 hour overhaul interval or 126,000 hour replacement);

- BC Hydro - Unit replacement based on manufacturer's recommendation, mostly 100,000 hours; and

- Qulliq Energy Corporation – 1,800 RPM units vary; 1,200 RPM units are replaced after 100,000 hours.

It can be noted that Hydro is, for the most part, completing overhauls on a longer or similar frequency as other utilities. (The majority of engines within Hydro's isolated diesel fleet are 1,800 RPM units).

The specifics of the risk increase after 100,000 hours are not known, as no utility, including Newfoundland and Labrador, has indicated that they run 1,800 RPM units beyond 100,000 hours. In fact, most state they replace 1,800 RPM units earlier.