

1 Q. Has Hydro implemented any operational measures or capital projects since 1993,
2 other than the WPLM program, aimed at improving outage statistics for its
3 Transmission Line Network? If yes, please identify and describe the other
4 operational measures or capital projects.

5

6

7 A. From 1995 to 2003 a capital program was in place to replace COB porcelain
8 suspension insulators on the following wood pole transmission lines: TL-210, TL-
9 212, TL-215, TL-222, TL-226, TL-229, TL-232, TL-233, TL-234, TL-251, TL-252, and TL-
10 253. Davit arms and anti fog insulators were installed on TL-227. This insulator
11 replacement program was launched as a result of a manufacturer's defect caused
12 by cement growth which was well known in the electrical utility industry for
13 insulators installed in the 1970s and 1980s.

14

15 Prior to the implementation of WPLM the following preventive maintenance
16 program was applied to wood pole transmission lines irrespective of the age of the
17 line:

- 18 • Helicopter patrols - four per year;
- 19 • Snowmobile patrol - one per year;
- 20 • Ground patrol - complete line every five years; and
- 21 • Climbing inspection - 1/5th of the line each year.

22

23 Deficiencies noted at the time of inspection were usually corrected the same year,
24 sometimes they were deferred to the following year. WPLM pole inspections do not
25 occur until the wood pole lines are 20 years old.

In addition to the Wood Pole Line Management program, the following operational measures are currently taken to maintain Hydro's transmission line network:

- Steel Lines: Helicopter patrol twice per year, climbing inspections 1/10th of the line each year, snowmobile patrol as requested;
- Wood Lines: Helicopter patrol twice per year, snowmobile patrol as requested;
- A Vegetation Management program is in place to ensure transmission line right-of-ways are kept clear; and
- Recently (2010 - 2012), Hydro has incorporated infrared inspections into the helicopter patrols for the Central Region only, with plans to expand the practice.

Again, any deficiencies noted at the time of inspection are usually corrected immediately or later in the year. Some deficiencies may be deferred to the following year.

The following capital projects were undertaken in the period 1997-2002.

Avalon Upgrades		\$Millions
TL-217 Western Avalon to Holyrood	Steel	17.4
TL-212 Sunnyside to Linton Lake	Alum/Wood/Steel	1.1
TL-242 Holyrood to Hardwoods	Wood	7.8
TL-236 Hardwoods to Oxen Pond	Wood	5.2
TL-207 Sunnyside to Come-By-Chance	Steel	2.9
TL-237 Western Avalon to come-By-Chance	Steel	11.8
Total Avalon Upgrades		46.2
 Connaigre Peninsula Upgrades		
TL-220 Bay d'Espoir to Barachoix	Wood	4.9
TL-206 Lightning Arrestors	Steel	5.0
Total Connaigre Peninsula Upgrades		9.9