

1 Q. **Asset Management**

2 According to the Report to the Board Related to Terminal and Protection and
3 Control Resource Requirements dated June 16, 2014, Hydro is considering adding to
4 the base Protection and Control (P&C) work plan in 2015 and in future years.

5 Describe the base P&C work plan in general terms, and explain the additions to the
6 work plan planned for 2015 and future years. Include in the response how many
7 technologists will be hired to accomplish the planned work.

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10 A. Hydro's base protection and control (P&C) preventative maintenance work plan in
11 its Transmission and Rural Operations Division, includes:

- 12 • Doble power factor testing of power transformers, current transformers,
13 potential transformers and oil circuit breakers (six year cycle);
- 14 • Relay testing and maintenance, including: cleaning, function testing, and
15 verification of correct settings (six year cycle); and
- 16 • Meter testing and maintenance, including: cleaning, calibration checks
17 and verification of correct operation (six year cycle).

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19 Additions to the P&C work plan for 2014 and beyond include: 1) exercising of all
20 breakers to verify correct operation (one year cycle); and 2) operation of circuit
21 breakers directly from protection systems by simulating actual system conditions.
22 (four year cycle for air blast breakers, six year cycle for all other breakers). In both
23 cases, P&C personnel will monitor equipment operation, collect and analyze
24 sequence of events (SOE) data, document findings and take necessary steps to
25 correct deficiencies. Currently, no further additions to the base P&C work plan are
26 planned for 2015 and beyond. However, it is predicted that some new programs
27 will have to be added and existing programs modified, as a result of the diverse

1 nature of equipment being added to the system, associated with the Muskrat Falls
2 development.

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4 In 2014, Hydro has increased its full time complement of P&C Technologists by two
5 (one at Whitbourne, and one at Happy Valley - Goose Bay) for its base work and has
6 increased its temporary complement by 0.5 full time equivalent (FTE), to aid in the
7 completion of incremental P&C work.

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9 Hydro has developed and reviewed its 2015 annual work plan and has determined
10 that no additional resources are required to complete base P&C work. An
11 additional 1.5 FTE positions will be retained to complete the remainder of
12 incremental P&C work for 2015 only.