

1    Q.    **Transmission Operations**

2            Provide the following information on Hydro's Emergency Management System  
3            (EMS).

- 4            a) Whether the same system is used for both Generation and Transmission  
5            management. If different, respond to the following for both systems.  
6            b) The name of the Vendor, original installation date, version currently  
7            used and the date of the most current version.  
8            c) Hydro's budget for maintaining the EMS including annual license and/or  
9            maintenance fees, IT support, and training.  
10           d) The capabilities of the EMS regarding monitoring and control of the  
11           facilities. Include discussion on human/machine interfaces.  
12           e) Hydro facilities that are *not* under the control of the EMS.

15    A.    The following is information on Hydro's Emergency Management System:

- 16           a) The same system is used for both Generation and Transmission  
17           management.  
18           b) The Hydro EMS is a Monarch system from Open Systems International. It  
19           was commissioned in June 2006. The current version is brick 37, which  
20           was installed in June 2013.  
21           c) The annual license/maintenance fee for the Hydro EMS is \$62,300 (USD).  
22           The Energy Systems (ES) team, which is a part of the Information  
23           Systems (IS) department, has eight members that support the hardware  
24           and applications on the EMS, as well as the hardware for the Hydro  
25           administrative infrastructure. The training budget for ES is a part of the  
26           overall training budget for the IS department. The ES team can use this  
27           budget for any EMS related training.

- 1                   d) The SCADA system utilizes the DNP3 and Harris 5000 communications  
2                   protocols to monitor and control transmission and generation facilities.  
3                   The Human Machine Interface is Monarch OpenView which runs on  
4                   Microsoft Windows 7 workstations.
- 5                   e) Please refer to Hydro's responses to PUB-NLH-405 and PUB-NLH-406 for  
6                   the answer to part (e).