

1 Q. Further to the response to PUB-NLH-043, explain in detail the specific action taken
2 to implement the initiatives listed.

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5 A. The specific actions taken to implement the initiatives listed in PUB-NLH-043 are
6 listed below:

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8 1. Deployment of work crews to remote plants and terminal stations prior to the
9 onset of a severe storm to reduce response time.

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11 As referenced in PUB-NLH-054, Attachment 3, System Operations (upon receipt
12 of warnings from Environment Canada) issues notices of weather warnings to
13 regional and plant managers. More recently, Hydro has further refined the
14 criteria for when the deployment of work crews should be considered. These
15 refined criteria will be continually reviewed and optimized based on operating
16 experience. Hydro relies on Environment Canada data to determine what is a
17 storm¹ event when considering the deployment of work crews. Since every
18 weather event is different and warrants a unique response, the deployment of
19 crews is determined on an individual storm basis through communications with
20 the Energy Control Centre, the Regional Manager and On-Call Supervisors.

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¹ Storm, either of the following:

1. Sustained winds >90 km/h with gusts >110 km/h.
2. >15 cm of snow forecasted in a 12-hour period.
3. Freezing rain forecasted to be sustained for >4 hours.
4. >25 mm of rain in 1 hour or >50 mm of rain in 24 hours.
5. Freezing drizzle forecasted to be sustained for >8 hours.

For the events of January 2 - 8, 2014 crews were specifically deployed to generating stations that were remote in nature and it was known that travel would be difficult or impossible during a storm. Hydro also took into consideration recent operating experience when deploying crews to Granite Canal and Cat Arm. Leading into the generation shortage and storm event, the Granite Canal unit had known vibration issues and Cat Arm had known issues with the station service breakers. By deploying crews to these sites in advance of the weather, any potential issues that arose could be mitigated as quickly as possible. In the case of Cat Arm, manual switching of the station service breakers prevented the plant from going black and allowed the units to go back in service as soon as the system was restored and capable of having them back online. In comparison, during the events of January 11, 2013 the Cat Arm plant went black and it took approximately 11 hours to restore the generation to the system.

In addition to deploying crews to remote generating stations, it was determined that the situation of rolling blackouts coupled with the forecasted severe weather storm warranted the dispatch of crews to terminal stations on the east coast. This decision was made in consultations with the Regional Manager, ECC and local crews. This was to ensure that there would be sufficient coverage during the forecasted weather event which was expected to impact the east coast and Avalon Peninsula the hardest. When the issues occurred at Sunnyside Terminal Station and the transformer fire started, there were Hydro personnel on site allowing for prompt response.

2. More frequent starting and running of standby generation prior to severe weather.

Since the events of January 2 - 8, 2014, Hydro has also started the practice of test running standby generation when a storm event (as defined above) is forecasted. The following units are tested:

- Hawke's Bay Diesel;
- St. Anthony Diesel;
- Hardwoods Gas Turbine; and
- Stephenville Gas Turbine.

The purpose of these tests is to prove the full capability of each standby generator. The testing of the Hardwoods and Stephenville Gas Turbines involves starting both engines and increasing the unit output to full capacity at 5 MW increments. Each step is monitored for vibration and temperatures before moving to the next increment. The testing of the Hawke's Bay and St. Anthony Diesel Plants follow a similar process as the gas turbines, where the units are gradually brought up to full load. The units remain at full load for approximately 30 minutes to an hour and then gradually the load is reduced and the units are brought off line.

3. Increase diesel fuel inventory levels at Stephenville and Hardwoods Gas Turbine plants.

Prior to the events of January 2 - 8, 2014, fuel levels at the gas turbines were maintained at 60% of tank capacity. During the event, fuel disruptions were experienced broadly throughout the province. Hydro was able to secure enough fuel to maintain operations, but extra measures were put in place to ensure sufficient supply, especially for the Stephenville plant. In addition to

1 engaging different fuel suppliers, Hydro also received 80,000 litres of fuel from
2 the Canadian Coast Guard through the Fire and Emergency Services division of
3 the Provincial government.

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5 Since the return of the system to normal operations, Hydro has increased fuel
6 inventory levels. This increase in fuel inventory provides Hydro with additional
7 operating time prior to refueling, while maintaining more than sufficient room
8 for fuel expansion in the tank. It also has the additional benefit of ensuring
9 adequate supply in case there are local fuel supply issues.