Q. At paragraph 2 of Hydro's application, Hydro states that the major winter storm which occurred on January 11, 2013 caused widespread damage and power interruptions to the Island Interconnected System, including damage to the Holyrood Terminal Station.

(i) Based on the investigation carried out to date, does Hydro have reason to believe that the storm caused or contributed to the failure of the Unit 1 DC lubricating oil pump? If "yes", explain.

(ii) Based on the investigation carried out to date, does Hydro have reason to believe that the electrical fault experienced in the Holyrood switchyard on January 11, 2013 was due to the storm? If "yes", explain.

(iii) Based on the investigation carried out to date, does Hydro have reason to believe that the electrical fault experienced in the Holyrood switchyard was a unique event, or has there been any history of similar electrical faults? If there has been a history of similar electrical faults, provide particulars.

(iv) Will the questions raised in (i), (ii) and (iii) above be addressed in the final root cause report?

A. (i) Hydro has no reason to believe that the storm caused or contributed to the failure of the Unit 1 DC lubricating oil pump, although the storm caused the necessity to rely on this third level of redundancy.

(ii) Based on the investigation carried out to date, Hydro believes that the electrical fault experienced in the Holyrood switchyard on January 11, 2013 was due to the storm. The high winds, snow and proximity of the switchyard to the ocean resulted in equipment becoming contaminated with salt. This created an electrical fault in the high voltage equipment in the switchyard.

(iii) Based on the investigation carried out to date and a review of outage records since 1993, Hydro does not believe that the electrical fault in the Holyrood switchyard was a unique event. There have been similar electrical faults which were initiated by adverse weather and salt contamination. Please refer to the table below for particulars.

Table 1: Historical Data

Date	Details
December 9, 1994	The 230 kV, 138 kV and 66 kV busses at the Holyrood switchyard tripped due to salt contamination and ice buildup on equipment. At the time of the event, the Avalon Peninsula was experiencing a major winter storm which was characterized by high winds, snow and blowing snow and periods of freezing rain. The high winds caused heavy salt contamination on the terminal station bus equipment and resulted in trips and lock-outs. This caused all three Holyrood generating units to trip off line.
December 10, 1994	Due to the major storm and salt contamination indicated above, the 230 kV circuit breaker, B12L17, faulted. It is believed that the contamination on the breaker resulted in the explosion of a grading capacitor on one phase and arcing on the other two phases. This caused all three Holyrood generating units to trip off line for the second time in two days.
April 6, 1999	The 230 kV busses at the Holyrood switchyard tripped due to salt contamination and ice build-up on equipment. It is believed that the contamination and ice build-up caused the circuit breakers, B1B11 and B12L17, to fault. The Holyrood units did not trip for this event.
January 25, 2003	The 230 kV transmission line, TL-217, tripped due to salt contamination on the B-Phase potential transformer (PT) in the Holyrood switchyard. Heavy salt contamination caused the PT to fault which resulted in damage to its support insulator. The PT and support insulator were replaced. The Holyrood units did not trip for this event.

(iv) The question in (i) above will be answered in the Unit 1 failure root cause analysis report. The information provided in response to questions (ii) and (iii) will be included in the report if necessary.