

1 Q. Has Hydro determined whether compliance will be required in terms of its practice
2 of having multiple transformers connected to the same high voltage bus and the
3 requirement to remain stable with no loss of load for a three phase fault on the 230
4 kV?

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7 A. As noted in Hydro's response to CA-NLH-005, a high level review of NERC and NPCC
8 transmission planning criteria would put the issue of multiple 230 kV transformers
9 connected to a common 230 kV bus with no dedicated 230 kV circuit breaker
10 outside of the compliance requirements of both NERC and NPCC standards. This is
11 because the transformers under consideration on the Island Interconnected System
12 would not be defined as **bulk electric system** elements under NERC definitions, or
13 **bulk power system** elements under NPCC definitions.

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15 With respect to the requirement to remain stable with no loss of load for a three
16 phase fault on the 230 kV system, the existing isolated Island Interconnected
17 System will remain stable for three phase faults on the 230 kV system. Loss of load
18 is expected for a 230 kV fault at the following locations:

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- TL247, TL248 or Deer Lake 230 kV bus will trip the Cat Arm plant resulting in
21 loss of generation and under frequency load shedding;
 - TL209 or Stephenville will result in loss of Stephenville Terminal Station
22 which is radially fed from Bottom Brook Terminal Station;
 - TL208 or Voisey's Bay Nickel Terminal Station will result in loss of Vale load
23 as it is radially fed from Western Avalon Terminal Station;
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- TL263 will result in loss of Granite Canal plant and potential loss of load due to under frequency load shedding depending upon system load at time of fault;
- TL234 will result in loss of Upper Salmon and Granite Canal plants with loss of load due to under frequency load shedding; and
- Holyrood 230 kV bus will result in reduced power output or full trip of plant resulting in load loss due to under frequency load shedding.

Following completion of the new Bay d’Espoir to Western Avalon transmission line, the Labrador – Island HVdc Link (LIL) and the Maritime Link (ML), the system will remain stable for all 230 kV three phase faults except the three phase fault at Bay d’Espoir with two high inertia synchronous condensers in service at Soldiers Pond. Operation of three high inertia synchronous condensers at Soldiers Pond will reduce the exposure to system instability for the three phase fault at Bay d’Espoir. With respect to load loss for a 230 kV three phase fault following completion of the Bay d’Espoir to Western Avalon transmission line, LIL and ML, faults on TL208 and TL209 are the only contingencies identified.