

1 Q. Sunnyside Replacement Equipment: Please describe all Hydro evaluations and  
2 considerations on the installation of a 230kV transformer breaker with breaker  
3 protection for T4 transformer at Sunnyside to provide protection to the  
4 transmission system for a T4 transformer failure.

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7 A. Historically, conventional station arrangements for Hydro have involved load-buses  
8 with 230/66 kV and 230/138 kV transformers connected to 230 kV buses via motor-  
9 operated disconnect switches. No dedicated transformer circuit breakers are used  
10 in these arrangements and multiple transformers can share a common 230 kV bus  
11 and breakers.

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13 The basis of this convention was to reduce capital costs associated with terminal  
14 station construction. Today, Hydro's preference is for the improved reliability  
15 afforded by either ring bus or breaker-and-one-half arrangements, as appropriate  
16 for the number of system elements.

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18 As noted in Hydro's *Integrated Action Plan* (Item #28),<sup>1</sup> a study will be  
19 commissioned to assess the reliability impacts associated with the installation of a  
20 dedicated circuit breaker for all 230 kV transformers. With respect to the breaker  
21 on transformer T1 (that has already been installed), please see Hydro's response to  
22 PR-PUB-NLH-028.

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<sup>1</sup> Most recently updated on January 15, 2015:  
<http://www.pub.nl.ca/applications/IslandInterconnectedSystem/files/reports/Updated-Integrated-Action-Plan-Report-to-Dec-31-14-2015-01-15.pdf> .