



CONNECTION ASSESSMENT & APPROVAL PROCESS

ASSESSMENT SUMMARY

Applicant: Hydro One Networks Inc.

*Project: Replacement of 230kV Breakers
AL4 & L4L23 at Detweiler TS*

CAA ID No. 2002-EX024

Long Term Forecasts & Assessments Department

Date: 9th April 2002

ASSESSMENT SUMMARY

HYDRO ONE NETWORKS Inc. DETWEILER TS - Replace 230kV breakers AL4 & L4L23

1.0 GENERAL DESCRIPTION

Hydro One Networks Inc. is planning to replace the two existing 2000 amp bulk oil circuit breakers, AL4 & L4L23 at Detweiler TS with 3000 amp SF₆ units. The associated disconnect switches are not being changed.

The scheduled in-service dates for the replacement breakers are as follows:

AL4	16 th April 2002
L4L23	30 th April 2002

2.0 SPECIFICATION FOR THE REPLACEMENT BREAKERS

The replacement SF₆ breakers are identical and are rated as follows:

3000 amp continuous
40kA interrupting capability
250kV maximum voltage
3-cycle interrupting time

[In accordance with normal Hydro One practice, the breakers are designed to trip and lock open upon detection of a low gas pressure condition. If the affected breaker should fail to open, then breaker failure protection will be initiated.]

For comparison, the existing bulk oil breakers are rated 2000 amp continuous and have a fault interrupting capability of 41.4kA symmetrical & 46.2kA asymmetrical.

3.0 ASSESSMENT

All of the 230kV breakers at Detweiler, with the exception of those listed below are rated at 3000 amp continuous:

AL4
AL6
HL22
L4L23

Replacing breakers AL4 & L4L23 will leave only breakers AL6 & HL22 with the lower 2000 amp rating.

While the two replacement breakers will have essentially the same fault interrupting capability as the existing breakers (41.4kA symmetrical), it is noted that they will not comply with the Transmission System Code that requires a rating of 63kA for 230kV breakers.

Nine of the thirteen 230kV breakers at Detweiler TS are already rated at 63kA symmetrical.

Although this is not of immediate concern to the IMO, this could become an issue should any future developments in the area result in an increase in the fault level at Detweiler TS beyond the 40kA rating of these breakers. In the event that such an increase should occur due to a development by a third party, then the subsequent replacement of these two breakers would be expected to be undertaken at Hydro One's expense.

Conclusions

Since the replacement of breakers AL4 & L4L23 at Detweiler TS is considered to represent a like-for-like replacement of existing facilities, it will have no adverse impact on the IMO-controlled grid.

4.0 NOTIFICATION OF APPROVAL

It is therefore recommended that a Notification of Approval of the Connection Proposal be issued.