



CONNECTION ASSESSMENT & APPROVAL PROCESS ASSESSMENT SUMMARY

Applicant: Hydro One Networks Inc.

**Project: Niagara Murray TS: Establish Two New
13.8kV Feeder Positions**

CAA ID: 2002-EX040

**Consistent Information Set Department
Long Term Forecasts & Assessments Department**

Date: October 21, 2002

1.0 Description of Proposal

Hydro One Networks Inc. (HONI) is planning to add two new 13.8kV feeder positions at the existing Niagara Murray TS to supply forecast load growth in the area. Niagara Murray TS, as shown in Figure 1, is connected to the 115kV Allanburg TS via the transmission circuits A36/37N and to Sir Adam Beck GS #1 via the transmission circuit Q4N. The station, as shown in Figure 1, has two DESN components with each DESN containing two 3-phase 3-winding 110-14.2-14.2kV \pm 20% 45/60/75MVA transformers. The proposed new feeder positions will be added to the T13/T14 DESN.

The scheduled in-service date for the work is April 2003.

2.0 Assessment

Compliance with Market Rules

The 2001 peak demand at the Niagara Murray TS T13/T14 DESN was about 52MVA. The load is expected to increase by 3MW by December 2003 and up to 10 MW in the next ten years. The rated MVA capabilities of each of the two transformers T13 and T14 are 45/60/75MVA. With either bank out of service the remaining transformer would still be capable of supplying the anticipated peak demand for the forecast period.

Information provided by the applicant indicates that the existing loads supplied from T13/T14 have a 0.92 lagging power factor and the new loads are expected to have similar power factor. In addition, there is a 14.4kV 21.6Mvar capacitor bank at the station for power factor correction. It is therefore expected that the station will be operating within the 0.9 lagging to 0.9 leading power factor range and is in compliance with the Market Rules.

There is no under frequency load shedding (UFLS) facilities at Niagara Murray TS. It has been decided that UFLS is not required at Niagara Murray TS at this time. IMO periodically reviews the UFLS requirements in the system and will inform HONI if in the future it is deemed necessary to have UFLS at Niagara Murray TS.

Transformers T13 and T14 are equipped with under load tap changers with a range of \pm 2.84kV (\pm 20% of LV winding voltage rating) and are capable of meeting the 3-5% voltage reduction requirement.

System Impact

Niagara Murray TS is located within the Allanburg 115kV control area and operation of the power system within the area is governed by the System Control Order SCO L-0321, Version 09. The SCO has not identified the 115kV transmission circuits A36N, A37N, and Q4N, which supply Niagara Murray TS, as system elements that might be thermally overloaded under normal or post-contingency operating conditions. The addition of 3 – 10MW at Niagara Murray TS is not expected to create thermal overload problems for these transmission circuits.

HONI has indicated that the loads to be supplied from the two new feeders are not anticipated to increase the short circuit currents. The fault levels at Niagara Murray TS, Allanburg TS, and Sir Adam Beck GS #1 would be within the short circuit current interrupting capabilities of the breakers at these stations.

3.0 Notification of Approval

The addition of two new feeder positions to meet expected load growth in the range of 3 – 10MW is not expected to adversely impact the IMO-controlled grid and that a Connection Assessment study would not be necessary. It is therefore recommended that a Notification of Approval for this proposal be issued to the applicant.

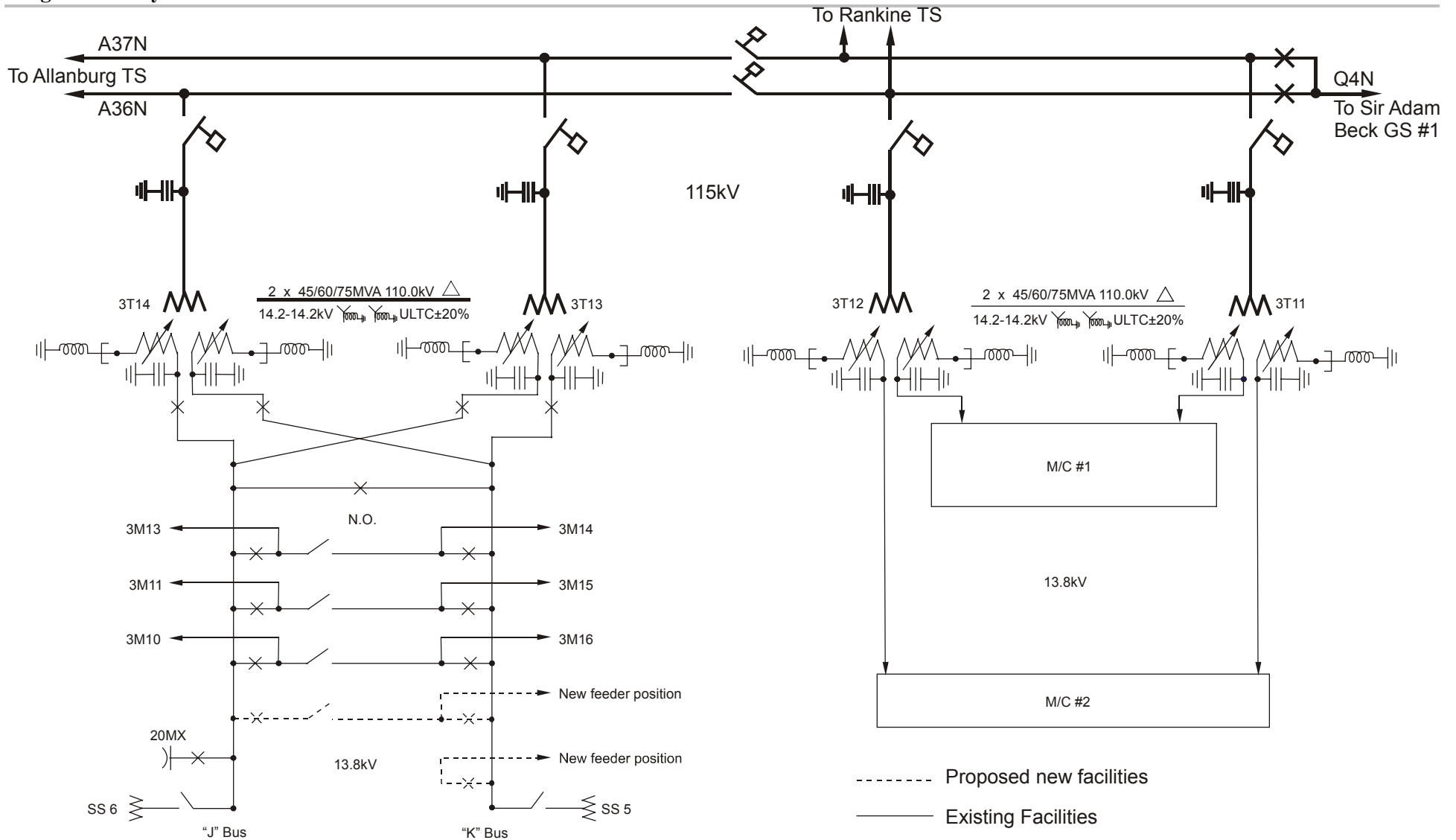


Figure 1: Niagara Murray TS

October 2002