



# **CONNECTION ASSESSMENT & APPROVAL PROCESS ASSESSMENT SUMMARY**

**Applicant: Hydro One Networks Inc.**

**Project: John TS: Replace Rod Gaps with Surge  
Arresters**

**CAA ID: 2002-EX081**

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

**Date: November 4, 2002**

## 1.0 Description of Proposal

Rod gaps are widely employed by Hydro One Networks Inc. (HONI) to protect transformers against overvoltages resulting from lightning or equipment switching. A HONI review of transformer failures due to lightning surges over the last ten years indicated that transformers protected by rod gaps were more likely to be damaged by surges than those protected by surge arresters. HONI has, therefore since 1998, been embarking on a program to replace rod gaps with metal oxide surge arresters throughout its transmission network.

The applicant is proposing to replace the 115kV rod gaps associated with the six 110-14.2-14.2kV step down transformers T1 to T6 at John TS with 115kV metal oxide gapless surge arresters. The scheduled in-service date of the project is Q4 of 2002.

## 2.0 Assessment

Rod gap is inferior to surge arrester in protecting transformer against lightning or switching surges. A HONI review has shown that transformers protected by rod gaps had higher failure rate than those protected by surge arresters. In fact, surge arrester has been adopted as an industry standard for transformer protection throughout North America and Europe in the 80s and HONI is the only utility in Canada still using rod gaps for such protection.

The proposal is a definite improvement over the existing surge protection scheme and will bring this aspect of protection at John TS to a par with industry wide practices.

## 3.0 Notification of Approval

Based on the above assessment, it is recommended that a Notification of Approval for this proposal be issued.