



# **CONNECTION ASSESSMENT & APPROVAL PROCESS**

## ***ASSESSMENT SUMMARY***

*Applicant: Hydro One Networks Inc.*

*Project: Richview TS - Replace the existing 230kV Rod Gaps on Step-down Transformers T1 & T2 with Surge Arresters*

*CAA ID No. 2003-EX155*

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

*Date: 28th August 2003*

## ASSESSMENT SUMMARY

### HYDRO ONE NETWORKS Inc.

#### *RICHVIEW TS - Step-down Transformers T1 & T2 Replace Existing 230kV Rod Gaps with Surge Arresters*

#### **1.0 GENERAL DESCRIPTION**

The 230/27.6kV step-down transformers, T1 & T2, at Richview TS are presently equipped with 230kV rod gaps to protect them from the effects of lightning surges.

Hydro One, as part of their on-going program to address inadequate transformer protection, is proposing to replace these rod gaps with surge arresters.

This work is scheduled to be completed during 2004.

#### **2.0 SPECIFICATIONS FOR THE NEW SURGE ARRESTERS**

##### *230kV Surge Arresters*

Number & Location:	Six phase-to-ground (one per phase) to be connected as close as practical to the 230kV terminals of the T1 and T2 transformers
Type:	Metal Oxide gapless - station class
Minimum MCOV:	150kV (rms)
Front-of-wave impulse protective level:	Maximum Equivalent Front-of wave not more than 710kV crest
Maximum discharge voltage for 8x20µsec at 10kA impulse current:	Not more than 620kV crest
Maximum switching surge protection level:	Not more than 380kV crest at 1kA
TOV capability :	The arrester is to be capable of withstanding a power frequency overvoltage of not less than 180kV rms for 0.5sec after the rated energy absorption.
Max. energy dissipation per arrester:	As recommended in ANSI/IEEE C62.11 1993 standard for a single column arrester
Press relief capability:	As recommended by ANSI/IEEE C62.11 1993 standard & not less than 65kA

#### **3.0 ASSESSMENT**

The replacement of the rod gaps with 230kV surge arresters on the step-down transformers T1 & T2 at Richview TS will be beneficial and 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.