NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: **THE PUBLIC UTILITIES ACT**

- and -

IN THE MATTER OF: **AN APPLICATION** by **Nova Scotia Power Incorporated** ("NSPI") for Approval of Unforeseen and Unbudgeted ("U&U") Work Order Greater Than $1 Million: CI# 40425 – Kempt Road Transformer (P-510 / Matter No. 03715)

To: Ms. Lee Thomson-Lutz
Manager, Capital
Nova Scotia Power Inc.
Email: lee.thomson-lutz@nspower.ca

From: Board Staff
Nova Scotia Utility and Review Board

Responses Due: Thursday, January 13, 2011

Copies: 3 and an electronic copy (pdf searchable)

Contact Person: **Mr. Branko Zatezalo, P.Eng**
Senior Analyst
Nova Scotia Utility and Review Board
3rd Floor, 1601 Lower Water Street
Halifax, NS B3J 3S3
Tel: (902) 424-4448
Fax: (902) 424-3919
Email: zatezab@gov.ns.ca

Issued at Halifax, Nova Scotia, this 24th day of December, 2010.

Nancy McNeil, Regulatory Affairs Officer/Clerk

IR-1:

On page 4 of 20, under "Why do this project now?", NSPI states this project is being advanced at this time to reduce the probability of loss of load due to a transformer failure. Please provide specific information to support the above statement and to justify the decision to submit this project as a U&U work order, and not as a part of the 2011 ACE Plan.

IR-2:

The work order application, submitted to the Board on November 24, 2010, identifies an estimated start date of 2010-10 and an estimated in-service date of 2011-08. Please provide the work schedule for 2010 and 2011.

IR-3:

On page 2 of 20 of the submission it is stated that the new unit would be connected as an energized spare at Kempt Road and would be utilized in the event of a failure "of the existing three transformers". On page 4 of 20 it is stated that there is a very high probability of extended loss of load if "the remaining unit fails":

a) Please provide a copy of the Kempt Road substation single line diagram under normal configuration;
b) Please compare the current configuration with the normal configuration.

IR-4:

Please elaborate on the estimated load and the maximum contingency capacity of the Kempt Road substation for the 2010/11 and 2011/12 winter peaks.

IR-5:

In its approval request (page 4 of 20) NSPI states that since 2001 there have been four transformer failures at Kempt Road:

a) Please describe the findings of the investigations into the root cause of these failures;
b) Which corrective measures and/or procedures have been developed by NSPI to decrease the probability of future transformer failures at this substation?

IR-6:

On page 4 of 20, under "Why do this project", NSPI states:

> It is expected that one of the three transformers that has not been removed from service to be rewound is at risk of failure due to the high number of faults in the area.

Please elaborate and provide documentation that support the above statement (such as a study, report, etc.).

IR-7:

With respect to the transformers currently being used at the Kempt Road substation, as well as the two transformers that are being rewound, please provide their age and the remaining life expectancy. Please elaborate.

IR-8:

Based on historical NSPI data, what is a typical life expectancy of transformers being used at the Kempt Road substation?

IR-9:

It is stated that, as the result of recent transformer failures (one on July 5, 2009 and the second on September 4, 2010), two transformers were removed from service and shipped to the factory to be rewound. Please identify the factory and its location, and provide the expected dates for return of these units to the Kempt Road substation location.

IR-10:

Please provide a listing of all 138kV system spare transformers that could be utilized at the Kempt Road substation, including multi-voltage and mobile transformers. Identify where these transformers are normally located and which spares are currently in service.

IR-11:

Please describe the use of common spare transformers shared by multiple NSPI's substations.

IR-12:

Please describe the method used by NSPI to determine the optimal number of substation spare transformers.

IR-13:

Please provide a cost breakdown and elaborate on the amount of $46,000 for Other Goods & Services.

IR-14:

Please discuss the other alternatives and provide a justification that an immediate purchase of a new transformer is the lowest cost option.