CI 40425

Kempt Road Transformer

REDACTED

November 24, 2010

NOVA SCOTIA POWER
An Emera Company

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UARB APPROVAL SHEET

Project Title: **Kempt Road Transformer**

CI Number: 40425

- [x] Capital Project Authorization
- [ ] ATO
- [ ] Final Cost

Head Office Use:

Project Number:

Date: November 24, 2010

Location:

Division:

Expenditure Profile

YEAR	Budget Estimate	Project Estimate
2010		280,115
2011		813,584
Total	$0	$1,093,699

Schedule

Start Date	2010-10
Estimated In-Service Date	2011-08
Estimated Close Date	2011-08

COMMENTS

This item is submitted pursuant to section 35

Submitted on behalf of NOVA SCOTIA POWER INCORPORATED

Nov 18/2010

Authorized Signatory — DATE

Mark Savory
VP Technical and Construction

Approved on behalf of NOVA SCOTIA UTILITY AND REVIEW BOARD

DATE

CI Number :	40425-T647	- Kempt Road Transformer		Project Number	T647
Parent CI Number :		-			
Cost Centre :	800	- 800-Services - Admin.		Budget Version -	2010 10/02 Forecast

	Forecast
Start :	10/20/2010
Operational :	08/30/2011
Final Cost :	08/30/2011
2010	$280,115.30
2011	$813,584.08
Total :	$1,093,699.38
Original Cost :	$0.00

This item provides for costs associated with the acquisition of an additional 138-25 kV, 25/33/42 MVA transformer at Kempt Road Substation. This 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.

CI Number : 40425-T647 - Kempt Road Transformer **Project Number** T647

Parent CI Number : - **Approved Date** 11/2/2010

Cost Centre : 800 - 800-Services - Admin. **Budget Version** 2010 10/02 Forecast

Capital Item Accounts

Acct	Actv	Account	Activity	Forecast Amount	Amount	Variance
092		092-Vehicle T&D OT Labour AO		1,457	0	1,457
092		092-Vehicle T&D Reg. Labour AO		10,200	0	10,200
094		094 - Interest Capitalized		34,325	0	34,325
095		095-COPS Regular Labour AO		15,539	0	15,539
095		095-COPS Overtime Labour AO		2,220	0	2,220
095		095-COPS Contracts AO		2,698	0	2,698
095		095-Thermal Regular Labour AO		785	0	785
001	022	001 - T&D Regular Labour	022 - TP - Elec Contr.Equip.	671	0	671
002	022	002 - T&D Overtime Labour	022 - TP - Elec Contr.Equip.	0	0	0
001	023	001 - T&D Regular Labour	023 - TP - Power Equip.-Station S	336	0	336
002	023	002 - T&D Overtime Labour	023 - TP - Power Equip.-Station S	0	0	0
001	043	001 - T&D Regular Labour	043 - TP - Substn Dev.	1,342	0	1,342
002	043	002 - T&D Overtime Labour	043 - TP - Substn Dev.	0	0	0
012	043	012 - Materials	043 - TP - Substn Dev.	16,779	0	16,779
001	044	001 - T&D Regular Labour	044 - TP - Substn.Transf.	7,381	0	7,381
002	044	002 - T&D Overtime Labour	044 - TP - Substn.Transf.	5,752	0	5,752
011	044	011 - Travel Expense	044 - TP - Substn.Transf.	1,610	0	1,610
012	044	012 - Materials	044 - TP - Substn.Transf.	920,126	0	920,126
013	044	013 - COPS Contracts	044 - TP - Substn.Transf.	11,500	0	11,500
041	044	041 - Meals & Entertainment	044 - TP - Substn.Transf.	805	0	805
066	044	066 - Other Goods & Services	044 - TP - Substn.Transf.	46,000	0	46,000
001	085	001 - THERMAL Regular Labour	085 Design	3,237	0	3,237
002	085	002 - THERMAL Overtime Labour	085 Design	0	0	0
011	085	011 - Travel Expense	085 Design	0	0	0
041	085	041 - Meals & Entertainment	085 Design	0	0	0
001	086	001 - T&D Regular Labour	086 Commissioning	10,401	0	10,401
002	086	002 - T&D Overtime Labour	086 Commissioning	0	0	0
001	087	001 - T&D Regular Labour	087 Field Super.& Ops.	0	0	0
002	087	002 - T&D Overtime Labour	087 Field Super.& Ops.	0	0	0
011	087	011 - Travel Expense	087 Field Super.& Ops.	0	0	0
041	087	041 - Meals & Entertainment	087 Field Super.& Ops.	535	0	535
			Total Cost:	1,093,699	0	1,093,699
			Original Cost:			

CI Number	: 40425-T647	- Kempt Road Transformer	**Project Number**	T647
Parent CI Number	:	-	**Approved Date**	11/2/2010
Cost Centre	: 800	- 800-Services - Admin.		

Capital Item Justification

Justification Criteria : Transmission Plant
Sub-Criteria : Equipment Replacement
Name of Report :
Document Location :
Person Responsible :

Why do this project?

Currently there are three 138-25 kV transformers at Kempt Road Substation that supply area load. Since 2001 there have been four transformer failures at Kempt Road. Most recently there have been two transformer failures that have resulted in the units being removed from service and shipped to the factory to be rewound. The first occurred on July 5, 2009 and the second on September 4 2010. Currently theses transformers have not been returned to Kempt Road and as such there is a very high probability of extended loss of load if the remaining unit fails. Kempt Road Substation is electrically located at a high fault level area of the power system. This means that any faults on the distribution system are normally seen by the transformers at the substation and as such these units experience extreme duty cycles. 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. As such, a spare 138-25 kV transformer is proposed to be purchased for Kempt Road to mitigate the risk of long term loss of supply due to a transformer failure.

Why do this project now?

This project is being advanced at this time such that the probability of loss of load due to a transformer failure is reduced. In addition, favorable pricing is available from the manufacturer on this transformer.

Why do this project this way?

Purchasing a spare transformer will increase the capacity of the Kempt Road Substation along with providing an energized and tested spare unit in the event of a transformer failure. The remaining unit has been exposed to similar conditions and is therefore at risk for failure. The new unit at Kempt Road would mitigate this risk.

This work will be completed by NSPI.

CI 40425 – Kempt Road Transformer

The following is a breakdown of costs associated with the Kempt Road Transformer

• Administrative Overheads and Interest	$67,224
• Labour	$29,120
• Materials	$936,905
• Contracts	$11,500
• Other	$48,950
• Total	$1,093,699

The major costs associated with this project are Labour, at an estimate of $29,120. This is based on a rate of approximately $308/manday. Materials, at an estimate of $936,905 provides for the cost of:

• Transformer	$876,310 (1)
• Transformer Oil Filtering	$43,186
• Surge Arrestors	$15,000
• Misc. Connectors	$2,409
• Total Materials	$936,905

Pages 6-20 have been removed due to confidentiality.