

November 22, 2010

Ms. Nancy McNeil
Regulatory Affairs Officer/Clerk
Nova Scotia Utility and Review Board
3rd Floor, 1601 Lower Water Street
P.O. Box 1692, Unit "M"
Halifax, NS B3J 3S3

Re: CI 11004 – Canaan Road Circuit Breaker Additions - Responses to Information Requests (IRs) P-128.10

Dear Ms. McNeil:

Enclosed are the IR responses pertaining to the capital item referenced above. These IRs were received on November 8, 2010.

The contract information details provided in IR-1 Attachment 1 is partially confidential. NSPI strives to keep the suppliers' pricing confidential from their other customers or potential competitors. This prevents competitors from using their information to gain a competitive advantage. This is equally true for NSPI, which desires to protect its ability to acquire capital equipment on the most competitive terms. Those "best" prices may not be available if there is a risk that they will be disclosed to the customers or competitors of the supplier.

Since NSPI customer rates are cost-based, the maintenance of confidentiality for this item is to the direct benefit of customers.

The substation single line diagrams provided in IR-2 Attachment 1 is confidential due to system security concerns. Protection of the power system preserves reliability and reduces the risks associated with external threats.

NSPI discloses this information to the Board and to Intervenor who have no conflicting interest, in confidence, thereby ensuring that an appropriate prudence review can occur.

Regards,


Lee Thomson-Lutz, MBA, CMA
Manager, Capital

Encl.

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Request IR-1:

Reference the capital approval sheet

- (a) Under reasons for variance, etc, NSPI states that the reason for the increase is mostly due to the requirement for a new radio link. Please explain why this new radio link is required.
- (b) Please provide the additional cost of the new radio link including detailed backup for the estimate.
- (c) The comment “The increased amount of the project from ACE is mostly due to the requirement for a new radio link” is also included in the capital approval sheet for CI#38819. Please explain why this statement is in CI#38819.
- (d) Are all the incremental cost for the new radio link included in CI#11004? If not, please explain and provide the amount of the increase by each work order submitted for the Canaan Road project.

Response IR-1:

- (a) The new radio link for Canaan Road is required for teleprotection (line protection) for the new and existing 138kV transmission lines (L6015 and L6013) to Tremont.

There is an existing unlicensed spread spectrum radio link at Canaan Road, however, spread spectrum radios operate in the unlicensed frequency bands and are not protected from interference from other users. The use of spread spectrum radios is not recommended for critical teleprotection circuits. As NSPI replaces communication links, spread spectrum technology will no longer be used.

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1 Response IR-1: (cont'd)

2
3 There is also a SCADA (Supervisory Control and Data Acquisition) circuit for the
4 Remote Terminal Unit (RTU) at Canaan Road, a data circuit for the fault recorder for
5 remote access, telephone voice circuits and other teleprotection circuits for L6012 to
6 Brushy Hill and St. Croix.

7
8 This new radio link will provide an Industry Canada licensed system that has been
9 coordinated for frequency assignment with other users and is protected from unwanted
10 interference. It will provide a reliable communications link for the critical teleprotection
11 and SCADA circuits that are required at Canaan Road.

12
13 (b) Please refer to Partially Confidential Attachment 1 for the estimate which was provided
14 for the communication requirements for the new 138 kV link from Canaan Road to
15 Tremont. This estimate provides for a licensed microwave radio link into Canaan Road
16 and a similar licensed microwave link into Tremont. Both sites required new 30 meter
17 radio towers.

18
19 This estimate represents the overall cost for the Canaan Road to Tremont communication
20 work and is split evenly between Canaan Road and Tremont.

21
22 (c) The statement is also included in CI 38819 because work is required at both Canaan Road
23 and Tremont to enable the link to be functional.

24
25 (d) The cost of the new radio link is split equally between CI 11004 and CI 38819.

TITLE:		Canaan Rd - Tremont 138 kV Expansion Project			FILE NAME:		Canaan Rd. to Tremont 138 kV Expansion Estimate.x			DATE: 22-Nov-10 TIME: 02:39 PM		
DESCR.:					ORIGINATED BY:							
CMS NO.:					CHECKED BY:							
COST CTR					APPROVED BY:							
					QTY	UNIT	COST	LABOUR	MAT'L	EXPN	CONTRT	TOTAL
CODE		DESCRIPTION										
001	055	Labour Hourly Rate					\$31					
		INSTALL. LABOUR - HALIFAX ECC			288	hr.		\$8,928				
		INSTALL. LABOUR - SACKVILLE			0	hr.		\$0				
		INSTALL. LABOUR - MILTON			0	hr.		\$0				
		INSTALL. LABOUR - COLDBROOK			256	hr.		\$7,936				
		INSTALL. LABOUR - TRURO			0	hr.		\$0				
		INSTALL. LABOUR - STELLARTON			0	hr.		\$0				
		INSTALL. LABOUR - COLDBROOK			0	hr.		\$0				
		INSTALL. LABOUR - SYDNEY			0	hr.		\$0				
LABOUR: TOTAL												\$16,870
001	085	CCO Engineering Hourly Rate					\$47					
		CCO ENGINEERING - FIBER SYSTEM			0	hr.		\$0				
		CCO ENGINEERING - RADIO SYSTEMS			315	hr.		\$14,805				
		CCO ENGINEERING - NETWORKS			0	hr.		\$0				
		CCO ENGINEERING - SCADA			0	hr.		\$0				
		CCO ENGINEERING - TELEPROTECTION			0	hr.		\$0				
		ENGINEERING DIV. - LABOUR			0	hr.		\$0				
		ENGINEERING DIV. - DRAFTING			16	hr.	\$31	\$496				
ENGINEERING: TOTAL												\$15,310
012	055	MATERIALS										
		MDR8508-8 7 GHz Microwave Radio (non-protected)			4	lot	\$25,000		\$100,000			
		Microwave dish and Waveguide			4	lot	\$15,209		\$60,836			
						lot			\$31,216			
						lot			\$0			
		48VDC Charger and Battery Bank - Tremont			1	lot	\$5,843		\$5,843			
		48VDC Charger and Battery Bank - Canaan Rd.			1	lot	\$5,490		\$5,490			
		Radio tower 30m - Tremont, Canaan Rd.			2	ea	\$56,000		\$112,000			
		SNMP Alarm Monitoring - Tremont			1	lot	\$5,471		\$5,471			
		SNMP Alarm Monitoring - Canaan Rd.			1	lot	\$5,471		\$5,471			
		Teleprotection equipment - Tremont			1	lot	\$9,982		\$9,982			
		Teleprotection equipment - Canaan Rd.			1	lot	\$9,982		\$9,982			
						lot			\$30,618			
									\$0			
		Credit for Tremont from Valley Upgrades Estimate			1		-\$85,633		-\$85,633			
									\$0			
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EQUIPMENT: TOTAL									\$291,276	
028	055	CONSULTANTS								
		Tower analysis study - Stronach, Newtonville	2	lot	\$2,000				\$4,000	
		Prepare scope of work for tower modifications	2		\$5,000				\$10,000	
									\$0	
CONSULTANTS: TOTAL									\$14,000.00	
013	055	CONTRACTS								
		Antenna installations	2	ea	\$5,000				\$10,000	
		Radio tower 30 m - Tremont, Canaan Rd.	1	ea	\$30,500				\$30,500	
		Tower modifications - Stronach, Newtonville	2	ea	\$15,000				\$30,000	
									\$0	
									\$0	
									\$0	
									\$0	
CONTRACTS: TOTAL									\$70,500.00	
066	055	FIELD DIV. EXP. (meals & accom. lump sum)						\$500		\$500
066	085	CCO EXPENSES (lump sum)						\$500		\$500
095	005	OVERHEADS								
		VEHICLE OVERHEADS						\$2,778		
		CONSTRUCTION OVERHEADS						\$28,632		
		CONTRACTS OVERHEADS						\$25,380		
OVERHEADS: TOTAL									\$56,789.79	
094	005	INTEREST	6	mths				\$9,478		\$9,480
TOTAL THIS PAGE (REMAINING TO SPEND)										
						\$32,170	\$291,280	\$67,270	\$84,500	\$475,226

This estimate provides for the telecommunications and telecontrol required for the proposed Canaan Rd. to Tremont 138 kV Expansion project. This estimate provides for two radio links one between Canaan Rd. Substation and Newtonville radio site and the other between Tremont Substation and Stronach Mountain radio site. Both radio links will be non-protected 7 GHz microwave radio to provide the required capacity for the existing and additional circuits required for this project as well as The Digy Wind Network Upgrades project. A credit has been included to cover the value of the equipment for Tremont Substation that was already estimated for in the Digby Wind Network Upgrades project. This includes low capacity radios, feedline, antennas, Alcatel multiplexer, 48 VDC power plant, SNMP alarm monitoring.

Two (2) new 30m radio towers will be required at the Canaan Rd. and Tremont Substations. NSPI's existing microwave radio and SONET fibre network backbones will be used to provide the communications to 415H Ragged Lake for SCADA. A new Alcatel 3600 multiplex shelf is required at the Tremont Substation. Existing Alcatel multiplex Shelves will be used at Canaan Rd. Substation, Stronach Mtn. and Newtonville radio sites. This estimate provides for Teleprotection Channel units for the existing L-6013 interfacing with electromechanical protection relays. It is assumed that new SEL relays will be capable of providing Mirrored Bits signalling for Teleprotection Channels for the new L-6015. An ACS Connex 60 RTU is provided for the Tremont Substation for Supervisory Control and Data Acquisition (SCADA). This may be replaced with a different RTU manufacturer and model depending on the outcome of the current SCADA RTU Replacement Project and RFP. It is assumed that the Canaan Rd. RTU has sufficient capacity for the expansion required under this project. The SCADA group is looking into this and will verify if this is correct. The existing SCADA communications circuits will go from the Tremont and Canaan Rd. Substations via NSPI's existing microwave radio and SONET backbone systems to the Energy Control Center at Ragged Lake.

Estimated Operating costs: Annual licence renewal fees 4 x \$302 = \$1208

Total Hours:

[illegible]

CONSTRUCTION OVERHEAD RATES

Field	89.00%
TED	89.00%
CCO	89.00%

VEHICLE OVERHEAD RATES

Field	35.00%
TED	0.00%
CCO	0.00%

INTEREST RATE

Rate	9.27%
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CONTRACTORS	36.00%
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Request IR-2:

Please provide a copy of the Canaan Road substation single line diagram as it presently exists and one that shows the configuration when this project is complete. Indicate clearly the changes resulting from this work order.

Response IR-2:

The changes to electrical configuration at Canaan Road consist of the following:

- (a) The addition of a second single bus-tie breaker (between B61 and B62) to provide additional security so that both buses are not lost in the event of a tie-breaker failure.
- (b) The addition of a new line terminal for the new 138kV line (L-6015) to the Tremont Substation.

Please refer to Confidential Attachment 1 for the substation single line diagram as it presently exists and one that shows the configuration when this project is complete.