

Project Change Notice

PCN-0530 HVdc Clearing and Access - Forecasted Cost Increase for Northern Peninsula (Blocks #9, 10, 11 and 12)

Section 1: Request for Proposed Change

CM X-Ref.	DAN-1473, DAN-1179	Date Originated	21 Oct 2015
		Originator	Geoff Thomas
		Package Leader / Engineer	Russell Murphy
		Area Manager	Kenneth Sparkes
		Scope / Project Manager	Kumar Kandaswamy
Origin		Current Status	Created
<input type="checkbox"/> Internal PMT	<input type="checkbox"/> Contractor/Supplier	Revision	1
<input type="checkbox"/> Other Nalcor	<input checked="" type="checkbox"/> Construction Site Event	TL 267 Project	<input type="checkbox"/>
<input type="checkbox"/> SNC-Lavalin	<input checked="" type="checkbox"/> Other External <input type="text" value="Permits"/>		

Agreement No.	Description
CT0327-015	350 kV HVdc Transmission Line Clearing (Section 1 - Blocks 9, 10, 11 & 12)

Description

Rev 1

The purpose of this PCN Rev 1 is to seek release of project contingency to fund Phase 1 of the Long Range Mountains ("LRM") Access (S3-410 to 440) as well as the conclusion of the balance of scope within Blocks 10 & 11 (up to S3-440).

The LRM access routing is illustrated in Attachment 4. The scope of this access was awarded on 31 December 2015, but not funded within the original value of Package CT0327-015 awarded to JCL as part of the entire ROW Clearing and Access Works in Blocks 9 - 12. Rev 0 of this PCN was approved the funding required to completed the balance of scope for Blocks 9 - 12, up to structure 410, however this PCN estimate failed to capture the entire value of remaining scope, in particular demobilization costs or pending reimbursable costs for blasting consumables. Total cost forecast for this package is shown in Attachment 5.

In an effort to reduce the overall schedule risk associated with the construction of the LITL, a decision has been made to continue to advance construction on the LRM access while weather permits during the period of January 2016, thus aligning with the risk reduction strategy for Project Risk OTLR039 (see Attachment 8)

Rev 0

The cost for packages CT0327-015 has increased from that approved on Rev 05 of the contract requisition of \$36.6 million (see Attachment 1) and from the original award recommendation of \$35.6 million.

Incurred cost will have exceeded the approved requisition value as of end of July 2015. As such funds are necessary for July onward.

This PCN is required in order to drawdown funds from XT0001 to support the conclusion of clearing and access works in Blocks 9 - 12.

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Rationale

Rev 1

JCL's contracted scope for CT0327-015 was for Blocks 9, 10, 11 & 12 (Attachment 1 Scope of Work). The current contract value will be exceeded for a number of reasons, including:

- (1) Addition of work scope in Block 12 from S3-417 to S3-440 - This work was not included in the last contract value estimate. This additional value of \$3MM is based on 7 km of road construction at a per km rate of \$115,000/km (approx \$800K), \$1.8MM for clearing based on existing T&M contract terms, and \$400K for additional reimbursable items such as rotational travel costs, and ad hoc T&M work. Attachment 6 provides the agreement with JCL for this additional scope based upon the Execution Plan shown in Attachment 7.
- (2) Remobilization of a manual cutting work crew in January to complete some outstanding manual cutting work that was not completed prior to the December 2015 shut down which is estimated to cost \$100K.
- (3) Additional funds of \$3.4MM is required to add to the Contract Price for work prior to the shut down in December 2015. This work was forecasted to be completed by 18-Dec-2015 for a total Contract Price of \$63MM however work was required to continue until 23-Dec-2015 to complete the work in progress. In addition, some additional equipment was required to be added to allow the work to finish prior to Christmas.

Rev 0

JCL's contracted scope for CT0327-015 was for Blocks 9, 10, 11 & 12 (Attachment 1 Scope of Work). The current contract value will be exceeded for a number of reasons, including:

- (1) Travel Time: Extensive costs associated with travel time to/from the Work front. As indicated in PCN-0502, LCMC was working under the premise that reporting point would be at the work face, which is typical for the forestry sector. However, in August 2014, following lengthy negotiations with the IBEW, an agreement was reached 20 minutes of free time each way, between the reporting point and work front, thus adding considerable cost exposure for this and all ROW clearing packages. The net exposure for this item has not been quantified, however it is suggested that this Non Productive Time (NPT) relates to an average of 1 hour per day for 100 persons, equating to \$10,000/day or \$300,000/month.
- (2) Access Plan: Lack of Access Plan development by Valard for the Blocks led to inefficient operational planning and created a situation wherein JCL was in a reactive mode have to develop an operational plan from scratch.
- (3) On-site Geotechnical Conditions: Poor on-site geotechnical conditions restricted the ability to undertake ditch-to-build techniques; while the lack of suitable borrows material available within the Right-of-Way necessitated the mobilization and development of quarries to support access road progression. The development of rock quarries as required the mobilization of extensive drilling and blasting capacity.
- (4) Delays in Quarry Permits: Due to Item (3), there has been a need to seek approvals of a significant number of off ROW quarries. Significant delays in the approval of quarry permit applications by Department of Natural Resources, due to in part to referrals from other Provincial government agencies, has added significant inefficiencies to the access works construction activity. In order to somewhat offset NPT, additional rock trucks have been mobilized to support longer haul distances, however there are practical limitations to this operation. The Project Team estimates that the net impact on overall productivity for these delays is 20-30%, thus contributing to a significant part of the cost overrun on this package.
- (5) As a result of Item (4), there was a significant amount of equipment movement to various locations to keep work moving in lieu of available material for contiguous production. Fundamentally this contributed to a loss in productive time versus the initial plan.
- (6) Bridge Crossings: The sizing and number of bridges have not been optimized, rather in many instances span distances and bridge locations resulted in additional costs. Lessons learned session has since been updated by Environmental Manager (D. Haley) in order to ensure that optimal installations occur in future.

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(7) Spring Break-up: An extended spring breakup period and poor existing resource roads during this period. This reduced productive time and required us to spend money to improve existing roads to maintain safe access to work fronts.

(8) Contract Duration: Duration of the contract is being extended to allow for reduced road progress associated with required construction techniques, thus incremental costs associated with in-direct supervision and administration support that is payable under the Agreement.

(9) Valard Support: Under CT0327-001 Valard were expected to be mobilized to the Island and providing significant support. However given the delay in doing such, LCMC have requested JCL to be more self-reliant including providing accommodations, planning, H&S monitors, OSEM monitors and supporting facilities such as port-a-potties, controlled waste containers, etc.

It must be noted the quality of access road being developed far exceeds what would typically be produced for a two year construction program. In general the road will meet Class B criteria, with water crossing, bridges and cross drainage that meets all stipulations by regulatory authorities, thus helping remove any risk of loss of self-governance under the Project's blanket water crossing permitting strategy.

Benefits

Rev 1

The additional road completion in Block 12 from S3-417 to S3-440 reduces amount of road construction required in mid 2016 thereby reducing schedule risk of completing the entire Long Range Mountains in 2016. The additional funds for item 3 above is required to fulfill contractual obligations prior to 25-Dec-2015.

Rev 0

Additional funds facilitates completion of this road which will become a long-term strategic operational asset to LITP.

Change Notice

Section 2:

Categorizat

- Scope
- Scope
- Non-S
- Estima

6,444,557.81 Balance XT0001
 54,000 Pending PCN0590

6,390,557.81

6,500,000

109,443 LITL CONTINGENCY (LP)

Component

- s Generation
- Maritime Link
- nsmission Assets
- Nalcor PM
- and Tx Link
- Other

Cost Control A

Cost Control Ac	Estimated Cost
5.4.500.6221.1030.15.01 LITL Island Overland DC Transmission (CT0327 and CT0346)	\$6,500,000
5.4.500.6221.1030.15.01 LITL Island Overland DC Transmission (CT0327 and CT0346)	\$63,000,000
5.4.500.6221.1030.15.01 LITL Island Overland DC Transmission (CT0327 and CT0346)	(\$63,000,000)
5.4.500.6221.1030.15.01 LITL Project Contingency - XT0001	(\$6,390,557)

5.4.990.0000.0699.99.02 LITL Project Contingency (\$109,443)

Direct and Indirect Impact by Change Analysis Team

- Basis of Design
 - Construction
 - Contracts/Procurement
- Rev1
 Change Order to be issued to cover the alternate execution approach accepted under Attachment 6, while covering additional cost for incremental scope within Blocks 10 & 11.
- Rev 0
 Change Order required under CT0327-015 to increase contract value and cover on-going works.

Cost Control Reviewed By *Lina Powers* Date Reviewed: *29 JAN 2016*

Rev 1: A total of \$6,500,000 is required to facilitate the conclusion of this work.
\$6,390,557 will be transferred from XT0001. Balance of \$109,443 will come from contingency.

Rev 0:
 A total of \$43,000,000 is required to cover the forecasted costs associated with the conclusion of access construction in Blocks 9 - 11. Reference attached cost forecast for details. The funds should be drawn from XT0001.

- Design Philosophy
- Access is being constructed to a long-term standard, thus providing operational support for the LITP (i.e. NL Hydro TRO).
- Environment and Regulatory Comp.

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Access works meet the conditions of all open permits and promotes Nalcor Energy's self governance under the blanket water crossing permit strategy.

Execution Approach

Health & Safety

Operations/Reliability

Long term operational benefits will be derived for the asset network.

Property and Lands

Quality

Reputation

Schedule

Reviewed By

Craig Fisher

Date Reviewed:

27 Jan 2016

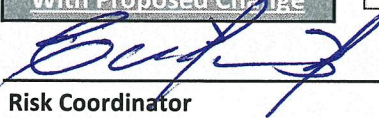
Continued progress on these blocks will ultimately support Valard's construction plans. In future, more effective scheduling / planning will be required beforehand; ensuring execution plans have more foresight to ensure timely sourcing of rock quarries, bridge size requirements, crew transit time, and defined access parameters to tower structures. It seems like the Contractor (JCL) were not prepared for the work challenges and awaited direction from the Owner appointed PM (Valard); as a result, going forward Valard will need to provide a more active ROW role and ensure Company milestone are completed on time and budget.

Other

Transportation / Shipping: There is no impact.

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Section 3: Risk Screening

N/A: <input checked="" type="checkbox"/>	Low	Medium	High	Comments
Risk Pre-Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rev 1: No change
With Proposed Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rev 0 Changed required in order to respond an issue related to increase requisition value and align requisition value with the current forecast value for this scope of work following decision made in relation to construction strategy to achieve completion.
 Risk Coordinator	<u>29-Jan-2016</u> Date			

* Reference Project Risk Management Plan for risk screening guidelines.

Whereas a risk assessment is not appropriate / applicable to this change, completion of the risk matrix is not required and therefore not included in this PCN printout.

Section 4: Implementation Plan

Implementation Strategy

Rev 1

Upon approval of this PCN, Requisition Revision #7 and Change Order No. 10 will be issued to increase the Contract Price accordingly and to add the Per Km unit rate for road construction to the contract and increase the Contract Price.

Work front conditions will continue to be monitored to ensure optimal resource deployment. Evaluate shutdown timing for this workforce by late January.

Rev 0

Contract term will be extended to facilitate the additional scope and lengthen duration.

Commitment value will be increased with approval of revised requisition.

Work face and technique optimizations will be explored to reduce future cost exposure.

Plans will be developed for facilitate handover of completed access to RFO post construction.

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Actions

Action	Actionee	Status
REV 0: Continue to work with regulators to expedite permit approvals	David Haley	Complete
REV 0: Evaluate claim opportunities under CT0327-001 due to the absence of an Access Plan	Jason Kean	Complete
REV 0: Increase requisition and complete Change Order to increase contract value	Peter Buote	Complete
REV 0: Monitor FFC for this package and produce regular cost stewardship reports	Mike Tuff	Incomplete
REV 1: Update Requisition and Execution Change Order for CT0327-015	Geoff Thomas	Incomplete
REV 0: Update Current Control Budget in PM+	Lisa Powers	Complete
REV 0: Ensure Access Plan exists for LRM	Kenneth Sparkes	Incomplete
REV 1: Update CCB in PM+	Lisa Powers	Incomplete
REV 0: Confirm Core Equipment Demobilization Plan	Kenneth Sparkes	Incomplete
REV 0: Make a determination as to whether LRM will be undertaken under CT0327-015	Jason Kean	Complete

Documents

Name	File Name
Attachment 1	CT0327-015 Scope of Work.pdf
Attachment 2	Email Correspondance re Quarry Development for CT0327-015.pdf
Attachment 3	Email (Forecast cost) - Michael Tuff.pdf
Attachment 4 - Rev 1	Attachment 4.pdf
Attachment 5 - Rev 1	ROW Clearing and Access Forecast Rev 7.pdf
Attachment 6 - Rev 1	LCMC Acceptance of JCL Offer.pdf
Attachment 7 - Rev 1	All Season Ditch to Build Road Construction Plan S3-417 to S3-440.pdf
Attachment 8 - Rev 1	Attachment8 OTLR039.pdf
Completed Action Report #1	PCN0530 SCO588.pdf
Completed Action Report #2	Action Complete - Dave Haley.pdf
Completed Action report #3	Action Complete - Jason Kean.pdf
ROW Clearing and Access Forecast Rev 7	ROWClearingandAccessForecast Rev7(28 Jan 16).pdf

Process References

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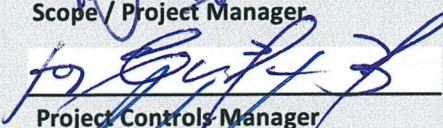
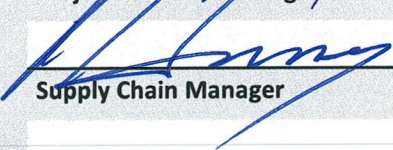
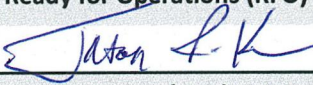




Project Change Notice

Section 5: Distribution

- | | |
|--|--|
| <input checked="" type="checkbox"/> Originator | <input checked="" type="checkbox"/> Project Director |
| <input checked="" type="checkbox"/> Package Leader/Engineer | <input type="checkbox"/> System Planning (Nalcor) |
| <input checked="" type="checkbox"/> Area Manager | <input type="checkbox"/> Operations |
| <input type="checkbox"/> PM - Muskrat Falls Generation | <input type="checkbox"/> MF Site Manager |
| <input type="checkbox"/> PM - HVdc Specialties and Switchyards | <input type="checkbox"/> Construction Manager |
| <input type="checkbox"/> LILCo Manager | <input type="checkbox"/> Other |
| <input checked="" type="checkbox"/> PM TL Construction / Execution | <input type="checkbox"/> Other |
| <input checked="" type="checkbox"/> Project Controls Manager | <input type="checkbox"/> Other |
| <input checked="" type="checkbox"/> Supply Chain Manager | <input type="checkbox"/> Other |
| <input type="checkbox"/> HSS & ER Manager | <input type="checkbox"/> Other |
| <input type="checkbox"/> Quality Manager | <input type="checkbox"/> Other |
| <input type="checkbox"/> Envir. & Regul. Compliance Manager | |
| <input type="checkbox"/> Business Services Manager | |
| <input type="checkbox"/> Ready for Operations (RFO) Manager | |
| <input checked="" type="checkbox"/> Deputy General Project Manager | |
| <input type="checkbox"/> Project Manager SOBI Crossing | |
| <input checked="" type="checkbox"/> General Project Manager | |
| <input type="checkbox"/> Finance Manager | <input checked="" type="checkbox"/> Vice President |

Project Change Notice

Section 6: Acceptance Phase

Decision			
<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Rejected/Cancelled	Decision Date	2 FEB 2016.
CHANGE CONTROL BOARD APPROVAL			
<input checked="" type="checkbox"/>	 Scope / Project Manager	01 Feb 2016 (Date)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	 Project Controls Manager	01-FEB-2016 (Date)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	 Supply Chain Manager	1 Feb 2016 (Date)	<input checked="" type="checkbox"/>
<input type="checkbox"/>	HSS & ER Manager	(Date)	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Quality Manager	(Date)	<input type="checkbox"/>
<input type="checkbox"/>	Envir. & Regul. Compliance Manager	(Date)	<input type="checkbox"/>
<input type="checkbox"/>	Business Services Manager	(Date)	<input type="checkbox"/>
<input type="checkbox"/>	Ready for Operations (RFO) Manager	(Date)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	 Deputy General Project Manager	1-FEB-2016 (Date)	<input type="checkbox"/>
<input type="checkbox"/>	Project Manager SOBI Crossing	(Date)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	 General Project Manager	01-FEB-2016 (Date)	<input type="checkbox"/>
<input type="checkbox"/>	General Manager Finance	(Date)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	 Project Director	2 Feb 2016 (Date)	<input type="checkbox"/>
<input type="checkbox"/>	Nalcor System Planning	(Date)	<input type="checkbox"/>
<input type="checkbox"/>	Operations Engineering Lead	(Date)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	 Other Approval 1	29-Jan-2016 (Date)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	 Other Approval 2	29-Jan-2016 (Date)	<input type="checkbox"/>
<input type="checkbox"/>	Other Approval 2	(Date)	<input type="checkbox"/>
<input type="checkbox"/>	V.P. - Lower Churchill Project	(Date)	<input type="checkbox"/>
<input type="checkbox"/>	CEO & Gatekeeper	(Date)	<input type="checkbox"/>

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Section 7: Close-Out

Implementation Status Complete:

Signoff:

Change Management Lead:

Date:

Scope/Project Manager:

Date: