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18-Dec-2013

LTR-CH0007001-0049

ASTALDI Canada Inc.
358 Hamilton River Road
Happy Valley-Goose Bay, NL A0P 1C0

Attention: Mr. Ken Chryssolor / Vittorio Robiati

Subject: Contract CH0007-001
Construction of Intake and Powerhouse, Spillway and Transition Dams
Early Works / Execution Schedule (ASTALDI-EMAIL-000027)

Sirs,

We acknowledge receipt of your Early Works/Execution Schedule (updated as of 30-Nov-2013) transmitted on 12-Dec-2013. We have reviewed the schedule and have the following comments:

1. **Start of Concrete:** We have a major concern which should be addressed in the upcoming contract kickoff meeting planned on 19-Dec-2013. Although the schedule is incomplete and an exact assessment of whether or not turnover milestones will be met is not technically possible (at this time) certain trends related to first concrete production and the effective start of critical concrete is a concern to us:
 - C-039 Batch Plants, Aggregate Production and Sand Borrow Pit opening and operations (screening) show a 3 week slippage from the previous early works schedule and the Aggregate production a 4 week slippage on the start date and an 8 week slippage on the finish date. The current early work execution schedule (Act ID # C039-1190) shows 03-Mar-2013 a 2 ½ week slippage from the previous early works schedule. This is a concrete job and as of 12-Dec-2013 no field work was underway on either crusher installation or borrow pit opening (work on clearing for the borrow pit did begin on 17-Dec-2013). Further slippages will increase the slippage on the start of critical concrete work in the Powerhouse Substructure units and/or the Spillway.
 - Powerhouse Substructure: The current Early Works/Execution Schedule which shows work starts for the next five to six months does not have any unit substructure concrete activities such as the Unit 1 Draft Tube Structure Floor Slab (it does show less critical South Service Bay substructure work). Please advise when Unit 1 Substructure Concrete work will begin. Based on your bid schedule unit substructure concrete was starting in the early portion of your overall schedule.

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2. Interface Milestone Dates:

- As requested here are the dates related to powerhouse access:
 - Interface Date I7A for “Powerhouse Site Shared Access Available” was achieved on 15-Dec-2013.
 - Interface Date I7B for “Powerhouse Site Ready for Unrestricted Work” is currently scheduled for 21-Dec-2013.
- As requested here are the dates related to remaining spillway access interface dates:
 - Interface Date I7B for “Spillway Site Ready for Unrestricted Work” was achieved on 15-Dec-2013.
- Interface Milestone I1A (Spillway Site Shared Access Available) was not correctly updated in your schedule (it currently shows an early finish date of 30-Nov-2013). As per email exchanged between Astaldi and Nalcor’s Ed Over on 29-Nov-2013 “...Astaldi accepts that “Shared Access” of the Spillway was achieved by the agreed date...” The agreed date in the contract is 15-Nov-2013. Please revise your schedule according in the next update.

3. Site Conditions: As requested here are updated coordination dates related to site conditions:

- The email of 29-Nov-2013 referenced above also revised the projected need for camp accommodations to mid-January of 2014 beginning with 100 beds. The schedule should reflect a required date of January 13rd or 14th. For clarity Nalcor can now meet your early Camp Accommodation requirements provided requests are submitted as per the contract.
- The following site condition requirements were met on or before the dates listed below:

Activity ID	Activity Name	Actual Finish
MIL1040	Site Conditions - Access to Area at company Laydown area	18-Oct-2013 A
MIL1070	Site Conditions - Availability of Telephone services	24-Sep-2013 A
MIL1080	Site Conditions - Power Supply to: Office complex	24-Sep-2013 A
MIL1090	Site Conditions - Power Supply to: Company Laydown	07-Nov-2013 A

- The email of 29-Nov-2013 referenced previously also revised the projected need for Construction Power (to the Powerhouse & Spillway) to mid to late April of 2014. The schedule should reflect a required date of April 15th 2014 for activities MIL1120, 1130 and 1140. Please be aware that the email also notes that “...Any shortage will be supplied by Astaldi generators...”. Construction Power switchgear for the Contractor’s Laydown is projected to

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be available by the end of January 2014 (31-Jan-2013). Please revise the required dates on MIL1110 accordingly.

- The email of 29-Nov-2013 referenced previously also revised the projected need for the Availability of Company Radio Mobile system to the end of the year. The schedule should reflect a required date of 31-Dec-2013 for activity MIL1060.
- The schedule should reflect two "Site Conditions - Take over Dewatering" dates, an actual of 16-Dec-2013 for takeover of dewatering for the spillway and a projected date of 18-Dec-2013 for takeover of dewatering for the powerhouse. These should be start milestones (original date in contract was 30-Nov-2013).
- The email of 29-Nov-2013 referenced previously also revised the projected need for the Bus Service to mid-January of 2014 noting that "...Astaldi is expecting that one bus should be sufficient for people requirements by mid-January...". The schedule should reflect a required date of January 13rd (Monday). For clarity Nalcor can now meet bussing requirements provided requests are submitted as per the contract.

4. **Scheduling (P6) Review:** We are aware that this schedule submission is based on a partially built schedule and it was NOT submitted as the control schedule for formal review and acceptance. Therefore a formal technical review (Primavera P6 calendars, activity ID labelling, constraints, etc.) will not be performed on it. Having stated that we would like to clarify a few points that could confuse readers of this schedule and lead to misunderstandings:

1. Since the schedule is partially built total float calculations are incomplete and can be misleading. We recommend that future submissions/updates issued prior to completion of the full schedule not display the total float column.
2. Late constraints (such as "Finish On or Before") should not be used on Site Condition requirement which begin a chain of activities. This leads to misleading float calculations such as -59 days for the Availability of Telephone Services. Late constraints shall be used on completion/turnover milestones such as "M55 - South Transition Dam Complete". The total float of a site condition requirement shall be based on the total float calculated in the completed schedule versus the completion/turnover milestone dates. Therefore please use start constraints "Finish On or After" on your finish milestones in the section of the schedule labelled as "P-SITE Site Conditions by Nalcor".

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During our project controls breakout session (after the kickoff meeting) we will review the contract schedule requirement in more detail to ensure understanding is achieved prior to submission of your control schedule.

In closing please address item 1 (Start of Concrete) in your Kickoff meeting presentation and please address items 2 to 4 (Interface Milestone Dates, Site Condition Dates and Scheduling P6 Review) in your next schedule update.

Regards,

A handwritten signature in black ink, appearing to read 'Scott O'Brien', with a stylized flourish extending to the right.

Scott O'Brien
Project Manager – Muskrat Falls Generation

cc: Desmond Tranquilla / Laird. Paton / Pierre Sasseville / Bill Knox / Mary Lou Horton
/ Jonathan Stewart / Paul Aucoin / Stephen Rumbolt