NLH 2013 Amended General Rate Application Information - # 33 Filed: <u>May 4, 2015</u> Board Secretary:



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March 13, 2015

Board of Commissioners of Public Utilities Prince Charles Building 120 Torbay Road, P.O. Box 21040 St. John's, NL A1A 5B2

#### ATTENTION: Ms. Cheryl Blundon Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re:Newfoundland and Labrador Hydro Combined Applications - Installation of Diesel Units at<br/>Holyrood for the Purposes of Black Starting the Generating Units and Supply, and Install<br/>100 MW (Nominal) of Combustion Turbine Generation - Request for Update

Further to the Board's letter of August 1, 2014 regarding the above referenced matter, enclosed is the original plus 12 copies of Hydro's status update for the following project:

• Supply and Installation of a 100 MW Combustion Turbine Generator.

Based on the availability status of the new combustion turbine as reflected in the attached update, this will be Hydro's last scheduled biweekly update on this project.

We trust you will find the enclosed update to be in order.

Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Geoffrey P. Young

Senior Legal Counsel '

GPY/jc

cc: Gerard Hayes – Newfoundland Power Paul Coxworthy – Stewart McKelvey Stirling Scales Fred Winsor – Slerra Club Canada Thomas Johnson ~ Consumer Advocate Thomas O'Reilly, QC ~ Cox & Palmer Danny Dumaresque

#### Supply and Installation of a 100 MW Combustion Turbine Generator

Status Update Briefing- Mar 13, 2015





#### Contents

- Project Dashboard
- Progress & Schedule Summary
- Cost Summary (S-Curve)
- Risk Analysis
- Project Photos

(Includes only material updated since Feb 27, 2015)



### **Project Dashboard**

The project is nearing substantial completion and the CT has been handed over to operations for power generation support to the grid. The CT has been successfully dispatched for use a number of times over the last number of weeks.





#### **Progress Summary**

- The CT is fully functional and has been dispatched on an ongoing basis as required over a number of weeks for generation support to the grid.
- 2. Cladding and HVAC work is ongoing on 2nd phase of the building.
- 3. The 2<sup>nd</sup> fuel storage tank is complete and commissioned.
- 4. Backup generator installation is nearing completion.
- 5. Final deficiency list items are being identified and worked on an ongoing basis.



#### Progress Summary (cont'd)

- 6. General housekeeping and demobilization of construction trailers ongoing around the site.
- 7. On-the-job operator training ongoing. Classroom training to begin next week.
- Cost S-Curve reflects tracking in compliance with original plan. Refer to Level 2 Summary Schedule on the following page.



#### Level 2 – Summary Schedule

• Summary level schedule provided below.

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|               | NO MW Construction Turbine (Integrated)             | titls ID-Har-MA         | 10-389-15            |                   |            | 1                   | 1           | 1              | -            | 1                |              |           |  |  | <u> </u> |
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| 2             | EPC Contract Preparation                            | 00,05 <b>-00</b> ;-54,4 | 30- <b>3679-</b> 34A | HBE               | 4          |                     | ŧ.          |                |              |                  | 1            |           |  | l .  |          |
|               | Enabling Works                                      | 130 <b>08-005-0</b> 44  | 37 <b>-5</b> 90-54   |                   | <u> </u>   | <u> </u>            | 1           |                |              | İ                | 1            |           |  |  |          |
|               | System Operations Interfaces                        | 150 53-396-964          | 2004                 |                   |            |                     |             | :              |              | ;                | 1            |           |  |  | [        |
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| <b>M</b>      | Intelation Work                                     | 0.0 18-AG-14A           | 25Non-14A            |                   |            |                     |             |                | i            | i                | +            | 4         |  |  | 1        |
| <b>\$2</b>    | Nater Supply and Effluent Pipana Works              | 850 00-JUN-16A          | 30-542-144           |                   | i          | 1                   | k           | <u> </u>       |              | <u>i</u>         | Ŷ            |           |  |  | į        |
| 38.           | Water Supproversion                                 | 60 CO-UN-MA             | 30-540-14A           |                   | 1          | 1                   |             | 1              |              | <u> </u>         | Ż.           |           |  |  | 1        |
| 14 T          | IALCOR - Simple Cycle 1 x Westinghouse 501 D5A -B-1 | 375 05-Mary 16A         | 10-Jan-15            |                   | i          | ÷                   | i i         | i' —           |              | i T              | 1            |           |  | -v   | Í        |
| 199           | Parapet Histories                                   | 58.0 25-86p-16A         | 05-36n-85            | lahg              |            |                     | <u>†</u>    |                |              | +                |              |           |  | 7  | 1        |
| 346           | Pre Prolect   | 00 05-00-14A            | 02-00-164            | 668 <b></b>       |            | -                   | <u>+</u>    | i              |              | 1 <u></u>        | 1            | -v -      |  |  |          |
| 1             | Pre EPC   | 60 07-647-14A           | 13-14-144            |                   |            | v                   | <u> </u>    | ~~~            |              | 1                |              |           |  |  | 1        |
| 15            | Engineerine   | 125 12-18- 14A          | \$17-Qec-34          |                   | i          | v v                 |             |                |              | <u>.</u>         | -            |           | ,  |  | 1        |
| 100           | Procurement   | 200 18 <b>10 1</b> 14 A | 23-23-14             | 356               |            | \$ <b>—</b>         | 1           |                | <del>+</del> |                  | <u> </u>     |           | <b>—</b>                                 | *  |          |
| <b>3</b>      | Construction  | 2948 02-Jun-14A         | 46-149-15            |                   |            | 1                   |             |                |              | <u>_</u>         | <u>+</u>     | <u> </u>  |  |  |          |
| <b>R</b>      | Comissioning and Start Up                           | 57.5 23-May-14A         | 10-Jan-15            |                   |            |                     |             |                |              |                  |              | 7         |  |  | <u> </u> |

Schedule dashboard is shown yellow, as commissioning and function testing continues on some systems. However, during commissioning of those systems unit remains available for dispatch for power generation if required.



#### Cost Summary – S-Curve





#### **EPC Labour Hour Summary**



Notes:

Actual Progress to Feb 15 from Schedule: 98.80 % Total Hours to Date: 375,750 with 1 LTI



### **Risk Analysis**

Two 3<sup>rd</sup> party facilitated risk workshops have been held to date:

June 26<sup>th</sup> – Focus on construction risks Dec. 19<sup>th</sup> – Focus on energization risks

The resulting risk mitigation plans are being used to manage risk during execution of the project.



**Risk:** Construction activities lead to contact with energized lines leading to safety incident.

**Mitigation:** Relocate lines, power line hazard training for operators, use permit system, prepare lift plans, deenergize lines where possible.

(Mar 13 update – Any work near overhead lines being performed with spotters and is always subject at toolbox talks. Outages on lines taken when required)



**Risk:** Unfamiliarity with new equipment leads to delay in commissioning.

**Mitigation:** Training included in EPC contract; engage operations and commissioning personnel early in the process.

(Mar 13 update – Startup and Commissioning teams engaged and Plant Operator assigned for project and training continues. )



**Risk:** Lack of coordination of work with all of the work crews on site leads to safety incident.

**Mitigation:** HSE Plans; Site Orientations; Contractor coordination meetings; toolbox meetings.

(Mar 13 update – Continue to have daily coordination meetings with relevant parties, and specific safety meetings where required)



**Risk:** Lack of isolation plan or incomplete lock-outs leads to safety risk.

**Mitigation:** Isolation procedures are defined and a walk down completed prior to work activity. Boundary isolation approach used. Site stand-down planned prior to energization.

(Mar 13 Update – Continuous management of Lock Out Tag Out (LOTO) system for any ongoing work. Special safety meetings held to remind/inform workers that site is operational)



# Project Photos



#### Photo 1 – Fuel Storage Tanks





#### Photo 2 – Auxiliary Service Transformers





#### Pipe Pipe – Intake and Air Inlet Heating





#### Photo 4 – Generator Step Up XFMR and Transmission Structure





#### Photo 5 – Water Treatment Area





# Photo 6 – Demineralized Water Storage and Pumping





# Photo 7 – Completing Phase 2 of Building









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