

Supply and Installation of a 100 MW Combustion Turbine Generator

Status Update Briefing– Dec 19, 2014

Revision 1

Boundless Energy



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(Includes only material updated since Dec 5, 2014)

Project Dashboard

The project is progressing according to plan and in compliance with Safety, Quality and Cost, with concerns with Schedule.



Progress & Schedule Summary

1. Civil work is complete.
2. CTG unit is mechanically complete.
3. CTG control system is powered up and function testing is ongoing.
4. Mechanical BOP placement progress has advanced significantly since last report and is nearing substantial completion
5. Fuel storage tank is complete and fuel deliveries are ongoing.
6. Fuel pipeline is complete and tested

Progress & Schedule Summary (cont'd)

7. Electrical switchgear terminations and testing are ongoing.
8. Mechanical and electrical trades continue working double shifts to advance schedule.
9. Cost S-Curve reflects tracking in compliance with original plan.
10. Overall schedule is consistent with previous report and reflects slippage on several work fronts, and that said function testing and initial commissioning of CTG unit is still planned for the month of December 2014.

Weekly Schedule – Weeks 3 & 4 Dec. 2014

Dec. 21st – 27th

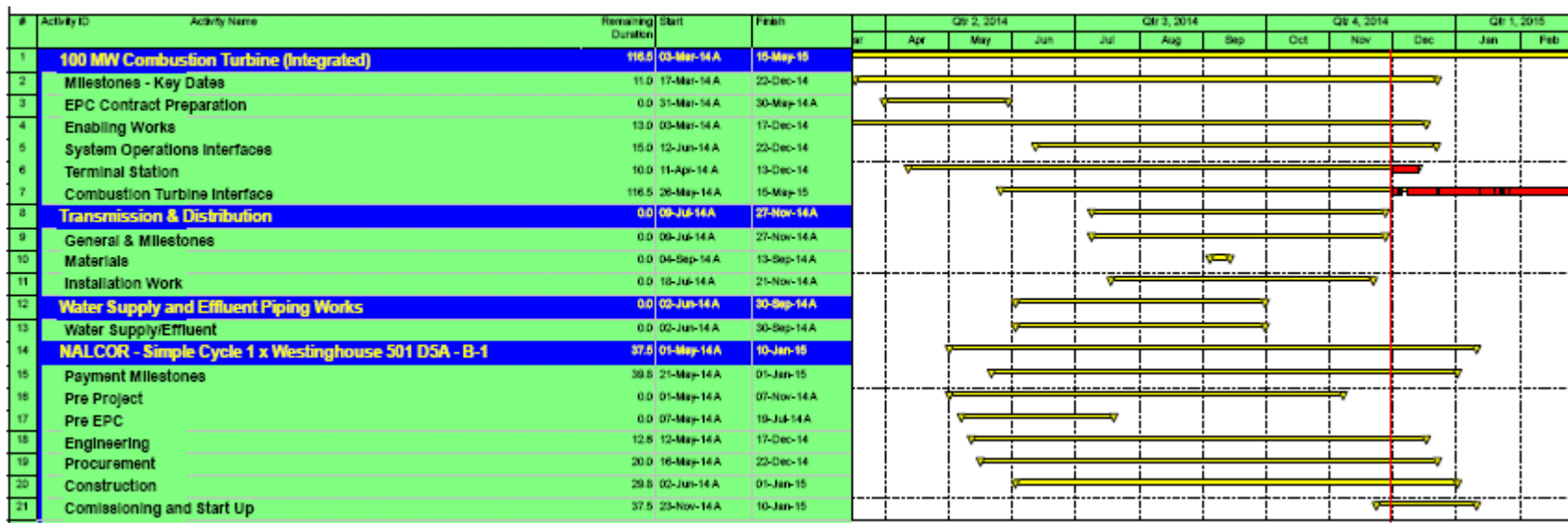
1. Protection termination, testing, and validation
2. Continuity testing and commissioning of sub systems
3. Independent testing and verification (Orbis, Acuren)
4. Formal risk review of energization plan
5. Formal approval of energization plan

Dec. 27th – 31st

1. Energization and backfeed
2. Remaining commissioning tests
3. Generation and synchronization
4. Ramping protocols with incremental load increases
 - Load testing from zero to 40MW, then 40MW to base load.

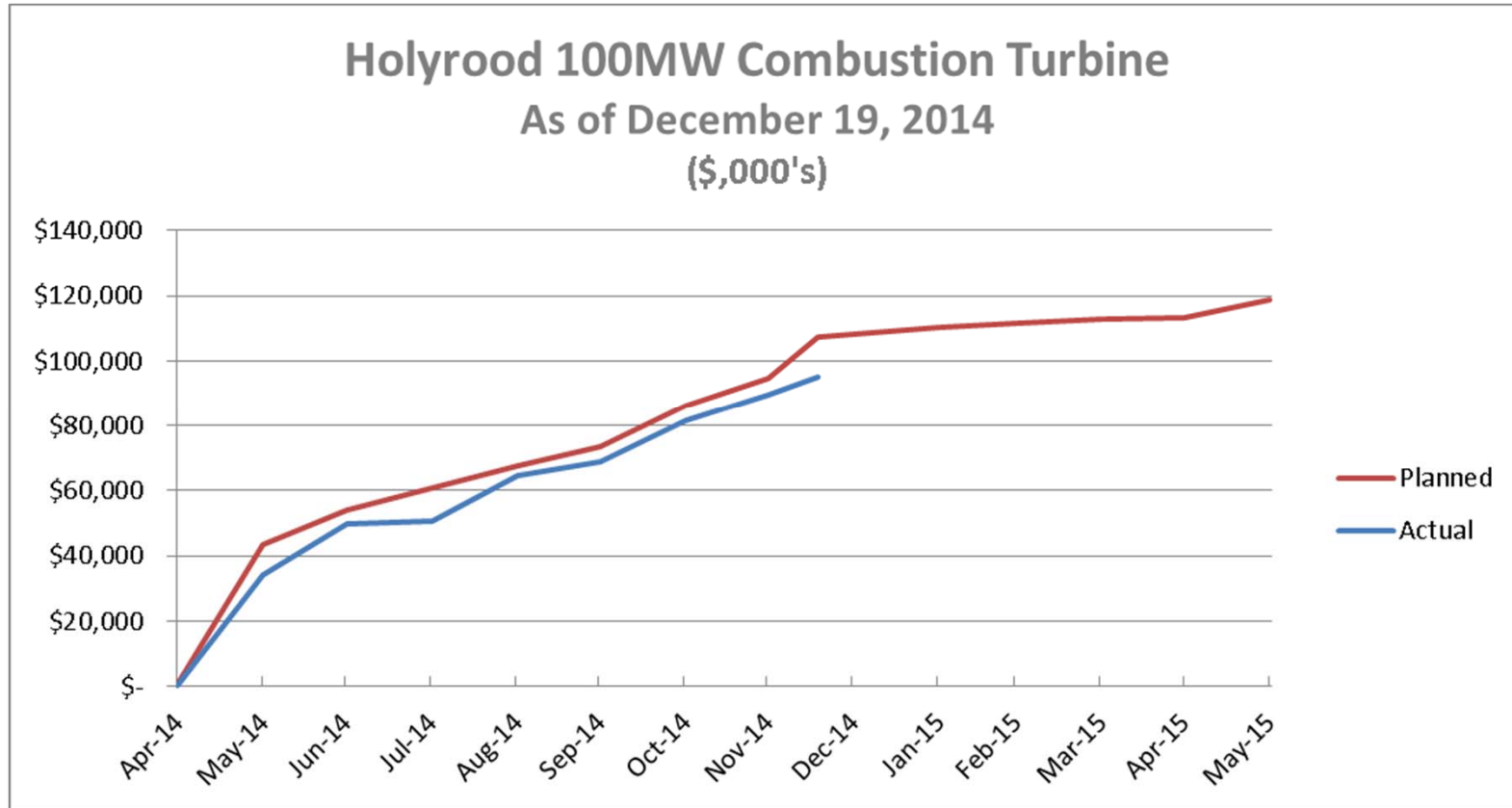
Level 2 – Summary Schedule

- Summary level schedule provided below.

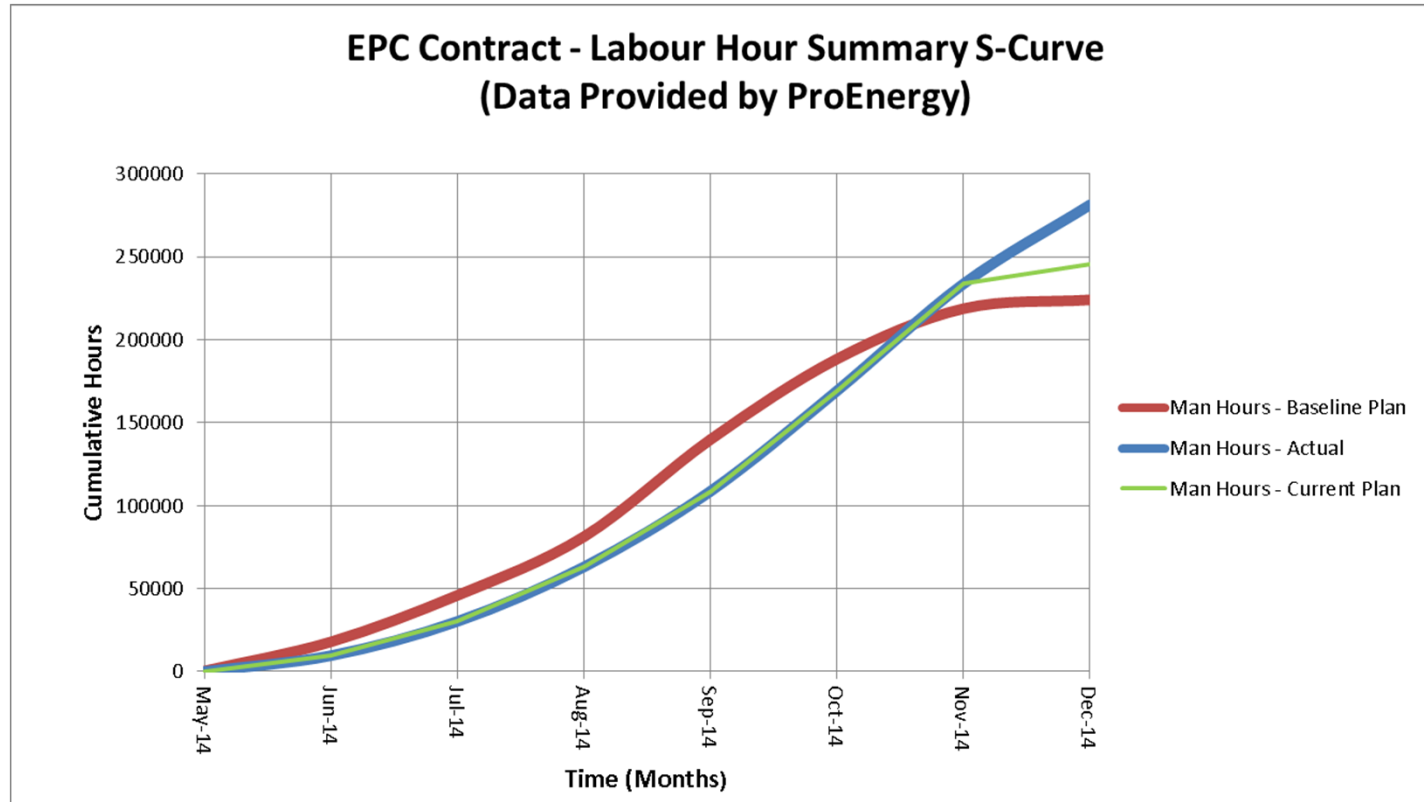


- 'Combustion turbine interface' task adjusted as the redundant black start line is not required and can not be connected until the temporary black start diesels are removed from service, which is being planned for 2015.

Cost Summary – S-Curve



EPC Labour Hour Summary



Notes:

Planned hours to Dec 15 (%Baseline Plan): 100%

Actual Progress to Dec 15 from Schedule: 90.09 %

Actual hours expended to Date (%Current Plan): 125.54%

Schedule Performance Index = 0.90 - **Indicates tracking behind plan**

Cost/Hrs Performance Index = 0.72 - **Indicates slippage in labour efficiency**

Total Hours to Date: 280,000 with 1 LTI

Risk Analysis

A 3rd party facilitated risk workshop was held on June 26th.

Risk Register was produced during the workshop. 50+ risks identified.

Risk mitigation plan in place and being used to manage risk during execution of the project.

Key Risks & Mitigation (cont'd)

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, de-energize lines where possible.

(Dec 19 update – Line energized this period as lifting activities in this area are complete, signage posted, spotters being used as required, status covered in tailboard talks)

Key Risks & Mitigation (cont'd)

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.

(Dec 19 update – Startup and Commissioning teams established)

Key Risks & Mitigation (cont'd)

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.

(Dec 19 update – Continue to have daily coordination meetings with relevant parties. Several specific safety meetings held to discuss working in congested work areas.)

Key Risks & Mitigation (cont'd)

Risk: Aggressive project schedule does not allow for any delay or rework in design – leads to schedule delay.

Mitigation: Close coordination between fast-track design and construction teams; regular coordination meetings; field engineering engaged with design team, increase shifts as required to pick up any delays.

Mitigation action ongoing requires day by day measurement and management.

(Dec 19 update – Additional schedule review and issues and solves sessions held to mitigate schedule impacts. Additional technical resources engaged at job site to mitigate any technical issues as they may arise.)

Key Risks & Mitigation (cont'd)

Risk: Delay in delivery of equipment and/or materials leads to schedule delay.

Mitigation: expediting; order materials as early as possible; identify long lead items early in project; choose appropriate shipping method; identify work around contingency plans.

(Dec 19 Update - Late materials delivery continues to be an exposure. Shipments are being expedited daily. Late deliveries on electrical equipment and materials have pushed function testing and commissioning later into December)

Key Risks & Mitigation (cont'd)

Risk: Adverse weather conditions could negatively impact construction progress.

Mitigation: Use of temporary enclosures to protect equipment and enable work to proceed during adverse weather conditions.

(Dec 19 – Temporary enclosures have been constructed as required. Permanent Building envelope construction is now underway)

Project Photos

Photo 1 – Building Construction



Photo 2 – Fuel Delivery



Photo 3 – Exhaust Stack Complete



Photo 4 – Fuel Line Heat Tracing



Photo 5 – Foam Fire Protection System

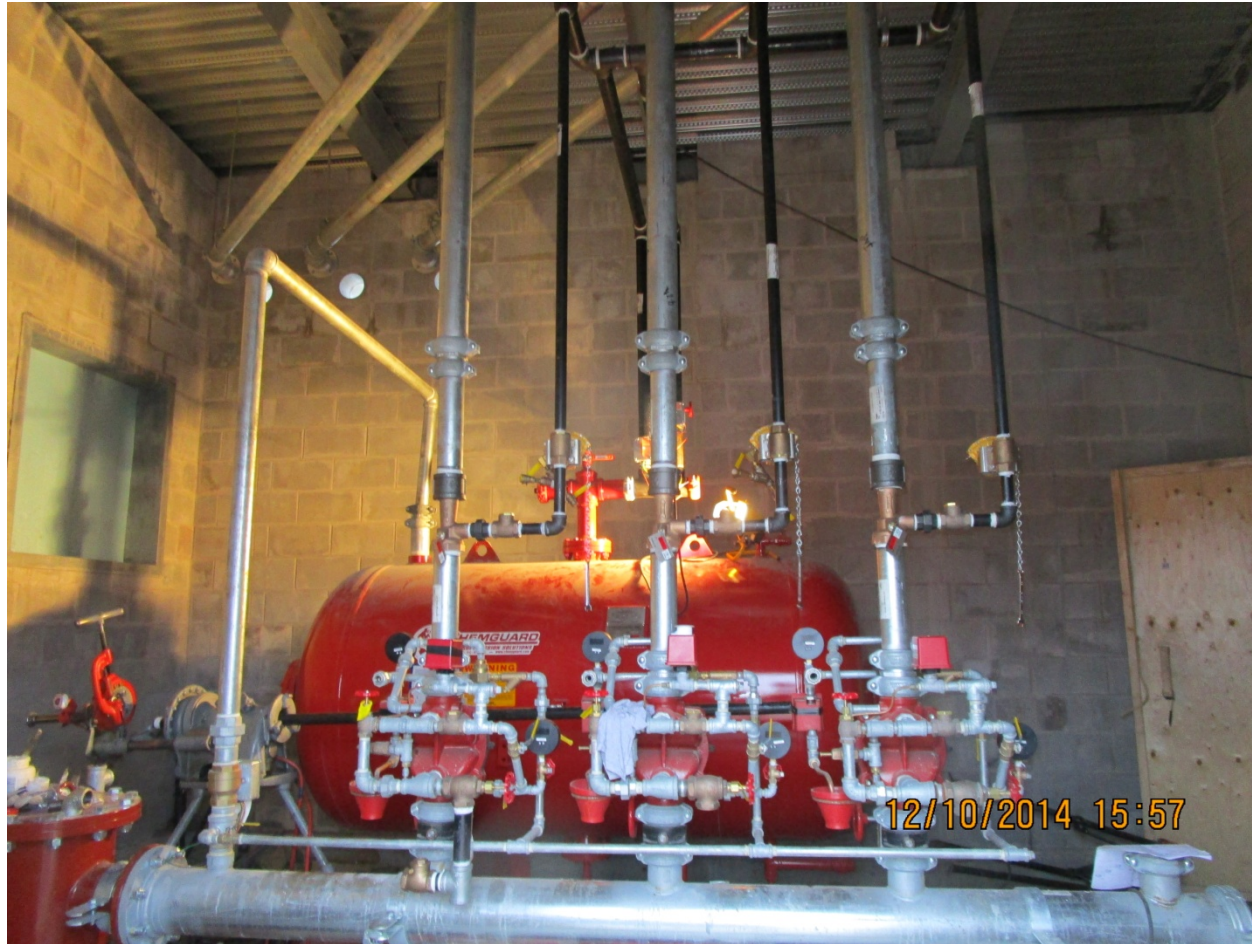


Photo 6 – Black Start Diesel Generator

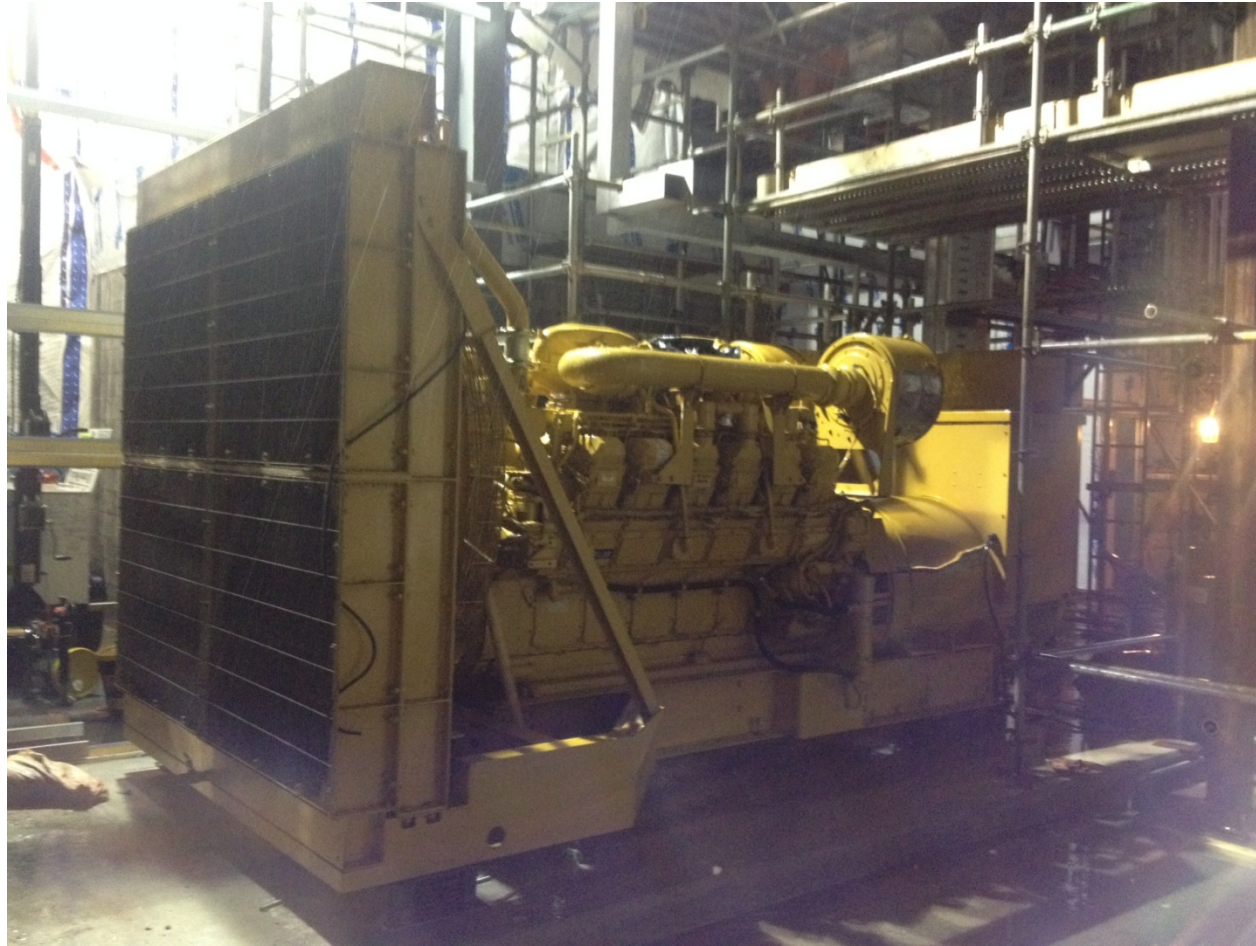


Photo 7 – Aerial View of Site



Photo 8 – Site View Looking North



