

# MONTHLY PROGRESS REPORT

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Project: **Wallingford Energy Center Expansion Project**  
Client **Wallingford Energy II, LLC**  
Location **Wallingford, Connecticut**  
Job Number: **1015-5113**  
Reporting Period **May 1st, 2017 through May 31st, 2017**

Submitted:  
June 7th, 2017  
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## EXECUTIVE SUMMARY

ProEnergy is pleased to report the Substantial Completion of the project has improved by another 3 calendar days from November 30 to November 27. This continued improvement was due to increasing the number of piping, electrical and craft labor.

Additional Structural craft were added for installing the electrical cable trays/bus supports. The civil craft worked additional hours to support of the scheduled electrical and piping tasks. The utilization of flowable fill for backfilling reduced the time of backfilling.

All of the May 22<sup>nd</sup> outage work was completed on schedule. Most of the piping tie-ins were completed prior to the outage by hot tapping the three water lines and ammonia line. The hot tapping method was done by freezing the lines, cutting the end of the pipe and welding the new pipe.

The fuel gas piping tie-in was also completed during the May 22<sup>nd</sup> outage. The piping to the isolation valve was tested and blown clean. This was completed in co-ordination with the plant staff.

There are several Major Milestones that have slipped due to late delivery of equipment. These are:

- SCR6/7 Rough Set on Foundation – Slipped 21 days because of issues with shipment from Mexico and customs.
- CTG6/7 Major Assembly Complete – slipped 1 day
- SCR6/7 Major Assembly – slipped 22 days because of issues with shipments from Mexico and customs.
- I&C Engineering IFR Drawings Released – slipped 24 days. Slippage due to the determination service bulletin 270 would not be implemented and to modify existing TransAlta plant software for operation.
- I&C Engineering IFC Drawings Released – Slipped 24 days because it follows the IFR Drawings Released date
- Mechanical Completion – slipped 22 days because of the SCR's and exhaust stacks increased shipping times. This 22 day slip did not affect the Substantial Completion because the SCR and Stack installation are not on the critical path.

The focus for PES this month was to:

- Complete installation of the underground piping to #6 CTG auxiliary skids and the main header tie-in piping for the May 22<sup>nd</sup> outage.

- Complete the installation the fuel gas piping
- Complete the installation of the GSU west sound wall
- Complete HUB drilling of the CTG sound walls piers
- Complete the installation of the south CTG sound wall steel columns
- Complete the installation of the cable bus supports to the GSU and start installing cable trays.

Weekly review meetings are held each Thursday morning to discuss project status and issues.

ProEnergy is actively looking to improve the schedule dates for each major milestone and most importantly the Substantial Completion.

## **1. MAJOR ACTIVITIES COMPLETED**

### **1.1. ENGINEERING- None reported**

### **1.2. PROCUREMENT**

- 1.2.1.** Cable Bus, 15kV 3000amp, 3Ph--13.8kV SWGR to Unit 6 & 7 (PES138975) – Delivered on site.
- 1.2.2.** H-Frame (PES133549) – Delivered on site
- 1.2.3.** Fin Fan (PES132451) – Delivered on site
- 1.2.4.** 4000AMP Switchgear Lineup (PES 135024) – Delivered on site.

### **1.3. FABRICATION / SHOP WORK**

- 1.3.1** PDC is being upgraded and scheduled to arrive on site June 8<sup>th</sup>
- 1.3.2** SB 205 (vent system modification) the kits have been received and the final balance of the kit will be installed during installation of the package.

### **1.4. CONSTRUCTION**

- 1.4.1.** Controls Mark VI/9070 & BOP Integration
  - No progress to report
- 1.4.2.** #6 CTG Equipment
  - Cleaned piping from air/oil pre-separator to roof flange
  - Cleaned TLO supply piping inside turbine skid.
  - Cleaned sprint air manifold on inlet duct
  - Checked the 480 Volt Temporary Power to Unit 6 Generator Space Heaters and verified amperage of 9.7 amps per phase.

- Finished cleaning VBV transition duct
- 1.4.3. #6 Auxiliary Skid**
  - Cleaned TLO piping & tank inside auxiliary skid
  - Installed interconnect hoses
- 1.4.4. #6 Sprint Skid**
  - Motor-gearbox-pump alignment.
  - Pre-fabricating piping
- 1.4.5. #6 Ammonia Injection Skid – No scheduled work**
- 1.4.6. #6 Fuel Gas Filter – No scheduled work**
- 1.4.7. #6 Switchgear & Generator Breaker**
  - Poured the foundation
  - Excavation for pipe and civil and set form work on the duck bank
- 1.4.8. #6 Fin Fan Lube Oil Cooler Skid**
  - Started underground conduit
  - Pre-fabricating piping
- 1.4.9. #6 LP Water Injection Skid**
  - Set on foundation & anchored.
  - Pre-fabricating piping
- 1.4.10. #6 CO2 Rack Skid – No scheduled work**
- 1.4.11. #6 Oily Water Drains**
  - Continued with the fabrication and installation of the piping and cleanouts.
- 1.4.12. #6 Wash Water Drains**
  - Installed clean out caps and drain stub up bowls.
  - Installed underground pipe tape to elevation and backfill unit 6 excavation.
- 1.4.13. #6 SCR – No scheduled work**
- 1.4.14. #6 Stack – No scheduled work**

- 1.4.15. #7 CTG Equipment –**
- Cleaned sprint air manifold on inlet duct, piping and filters
  - Finished cleaning VBV transition duct
- 1.4.16. #7 Auxiliary Skid**
- Finished hand cleaning all TLO piping/tank inside.
  - TLO tank/piping cleaned.
  - Installed formwork, tied rebar and poured concrete.
  - Striped hardware from form work & bushing concrete
- 1.4.17. #7 Sprint Skid**
- Installed formwork, tied rebar and poured concrete.
  - Striped hardware from form work & bushing concrete
- 1.4.18. #7 Ammonia Injection Skid – No scheduled work**
- 1.4.19. #7 Fuel Gas Filter – No scheduled work**
- 1.4.20. #7 Fin Fan Lube Oil Cooler Skid**
- Installed formwork, tied rebar and poured concrete.
  - Striped hardware from form work & bushing concrete
- 1.4.21. #7 LP Water Injection Skid**
- Installed formwork, tied rebar and poured concrete.
  - Striped hardware from form work & bushing concrete
- 1.4.22. #7 CO2 Rack Skid**
- Installed formwork, tied rebar and poured concrete.
  - Striped hardware from form work & bushing concrete
- 1.4.23. #7 Oily Water Drains**
- Continue with pre-fabricating piping and cleanouts
- 1.4.24. #7 Wash Water Drains**
- Continue with pre-fabrication
- 1.4.25. #7 Water Injection Skid**
- Installed formwork, tied rebar and poured concrete.
  - Striped hardware from formwork & bushing concrete.
- 1.4.26. #7 SCR – No Scheduled work**

**1.4.27. #7 Stack – No Scheduled work****1.4.28. 15KV System**

- Finished drilling supports, setting anchor bolts and installing cable tray supports.
- Installed Load Interrupter Switch for units 6 & 7

**1.4.29. GSU Sound Wall**

- O&G: Installed shims & leveling plates and sound wall columns on 4 columns, three (3) on the west and one (1) on the south wall. Grouting on each was completed the next day.
- Poured concrete & back filled for GSU grade been west wall.
- O&G, removed cut out openings on the existing south GSU wall.
- Re-wiring the light poles around GSU.
- Installed 15 feet of 4 inch GRC rigid conduit for the GSU control/instrument cables.

**1.4.30. GSU H-Frame**

- The PES provided disconnect switch was a motorized switch with no designed wiring for it. The plant and LS Power agreed PES could replace this motorized switch with a hand operated switch like the rest of the existing units.
- The grounding switch mounting plate was installed on the wrong side of the H-Frame by Summit. They will send a new plate and PES will weld it to the north side when it comes in.

**1.4.31. CTG Sound Wall**

- Excavated for grade beam and poured flowable fill.
- Relocated fiber optic line to accommodate south sound wall pile.
- HUB completed drilling all the sound wall piers.
- Completed setting the rebar and anchor bolts on the south sound wall columns.
- Completed installation of the steel columns on the south sound wall.
- Started setting forms for the grade beam of the south sound wall.

**1.4.32. Fuel Gas Pipeline Installation**

- Completed the May 22<sup>nd</sup> outage tie-in of the fuel gas piping. Worked with the plant staff to test and blow down the new piping to the isolation valve.

- Completed a pipe support installed the Gilsulate tie-in point. The area was backfilled.
- All the piping supports for the above ground piping were installed.
- Quality Mechanical continued installation of the above ground main header piping.

**1.4.33. BOP Piping Main Underground Headers**

- Completed the underground piping of the main headers from the tie-in points to valve vaults and continuing to the # 7CTG.
- All pressure testing and hydro testing have been completed on this section of piping.

**1.4.34. Grounding**

- Installed Grounds to the cable buss supports
- Continue installing grounding tails at CTG's.
- Continue installing grounding grid & ground rods

**1.4.35. PDC Building**

- Completed the installation of the PDC foundation.

**1.4.36. Auxiliary Transformer**

- Poured concrete for the containment foundation.
- Installed GRC & PVC Conduit.

**1.4.37. New Dry Fire Line Installation**

- Quality mechanical waiting on a back order of hardware to complete the Fire Department Connection.

**2. PLANNED ACTIVITIES FOR NEXT PERIOD****2.1. ENGINEERING****2.1.1. Controls**

- Finalized the Mark VI and 9070 Controls Integration
- Finalize the cable schedule for the control wiring

**2.1.2. Heat Trace**

- Finalize drawings and order material

**2.2. PROCUREMENT LOOK AHEAD****2.2.1. Continue with Procurement as outlined in the schedule.**

**2.3. FABRICATION / SHOP WORK – None scheduled****2.4. CONSTRUCTION****2.4.1. Controls & I&C**

- Install conduit and trays at the MTTB turbine panel at Unit 6 and 7
- Start pulling cables to the MCC from the MTTB and MGTB

**2.4.2. 6 CTG Equipment**

- Set Filter house modules

**2.4.3. #6 Auxiliary Skid**

- Final setting of the skid.
- Install hoses
- Start to clean hydraulic system
- Clean the water wash tank and lines
- Start to install above ground piping

**2.4.4. #6 Sprint Skid**

- Start to install above ground piping

**2.4.5. #6 Ammonia Injection Skid – No work scheduled****2.4.6. #6 Fuel Gas Filter**

- Complete pipe installation for Fuel gas piping from main header to Unit 6 filter skid
- Pig & blow Fuel Gas piping to FG filters

**2.4.7. #6 LP Water Injection Skid**

- Start to install above ground piping

**2.4.8. #6 CO2 Rack Skid**

- Set the skid

**2.4.9. #6 Oily Water Drains**

- Complete above ground piping

**2.4.10. #6 Wash Water Drains**

- Complete underground piping to lift station

**2.4.11. #6 Stack & SCR**

- Expected Delivery 06/30/2017

- 2.4.12. #7 CTG Equipment –
  - Set Filter house modules
- 2.4.13. #7 Auxiliary Skid
  - Set and connect hoses
  - Complete underground piping
  - Start above ground piping
- 2.4.14. #7 Sprint Skid
  - Complete installation underground piping
  - Set the skid
  - Start above ground piping
- 2.4.15. #7 Ammonia Injection Skid
  - Complete Installation underground piping
- 2.4.16. #7 Fuel Gas Filter
  - Complete underground piping fuel gas piping from main header to Unit 7 filter skid
  - Pig & blow Fuel Gas piping to FG filters
- 2.4.17. #7 LP Water Injection Skid
  - Complete Installation underground piping
  - Set the skid
  - Start above ground piping
- 2.4.18. #7 CO2 Rack Skid
  - Set the skid
- 2.4.19. #7 Oily Water Drains
  - Complete Installation underground piping
- 2.4.20. #7 Wash Water Drains
  - Complete Installation underground piping
- 2.4.21. #7 Stack & SCR
  - Expected Delivery 06/30/2017
- 2.4.22. Main Header Fuel Gas Pipeline Installation
  - Pig & blow Fuel Gas piping from the isolation valve to FG filters for Unit 6 & 7

**2.4.23. BOP Piping Main Underground Headers**

- Complete all the underground BOP piping headers and tie-in to existing systems

**2.4.24. Waste Water Main Underground Piping Headers**

- Install new lift station

**2.4.25. Oily Waste Water Main Underground Piping Headers**

- Install underground piping and tie-n to existing system.

**2.4.26. 15KV System**

- Set 15KV switchgear and breakers
- Continue and finish installing cable bus and cable tray supports
- Complete the underground bus duct from 15KV switchgear to PDC
- Start pulling cables

**2.4.27. 480V System**

- Set PDC
- Connect temporary power with diesel generator
- Set 480V XFMR

**2.4.28. GSU Sound & East Walls**

- Install columns south & east sound wall.
- Pour grade beam on the South & East wall
- Grout columns
- Set wall panels

**2.4.29. GSU H-Frame**

- Provide the hand operated switch to EJ Electric for them to install it.
- Install the grounding switch mounting plate on the north side when it comes in.

**2.4.30. CTG South Sound Wall**

- Install wall columns
- Grout columns
- Install grade beams
- Partial installation of the West Panels

**2.4.31. CTG East Sound Wall**

- Install wall columns

- Grout columns
- Install grade beams

**2.4.32. Install/Test GSU**

- Set GSU
- Dress out the GSU

**2.4.33. Install Control Cables GSU**

- Install Conduits up the East Sound Wall to the control cable tray
- Install Conduits from the existing cable tray at the GSU Protection Panel penetrating the MCC Building North wall going down the wall to underground and up to the new cable tray along the sound wall.
- Start pulling & Terminate cables at GSU

**3. PROCUREMENT STATUS**

The following purchase orders have been issued.

- 3.1.** SCR (PES131003) Ready to Ship – 6/1/2017.
- 3.2.** Transformer 25000KV<sub>a</sub> 13.8tp 480V (PES135054) – Ready to Ship 6/9/2017.
- 3.3.** Filtration System (PES 134750) – Ready to Ship- 06/30/2017.
- 3.4.** CEM System in single shelter (NO<sub>x</sub>, O<sub>2</sub>, CO, NH<sub>3</sub>) – (PES134525) – RTS 06/30/2017 Shipping from CT

### 4. DELIVERY STATUS

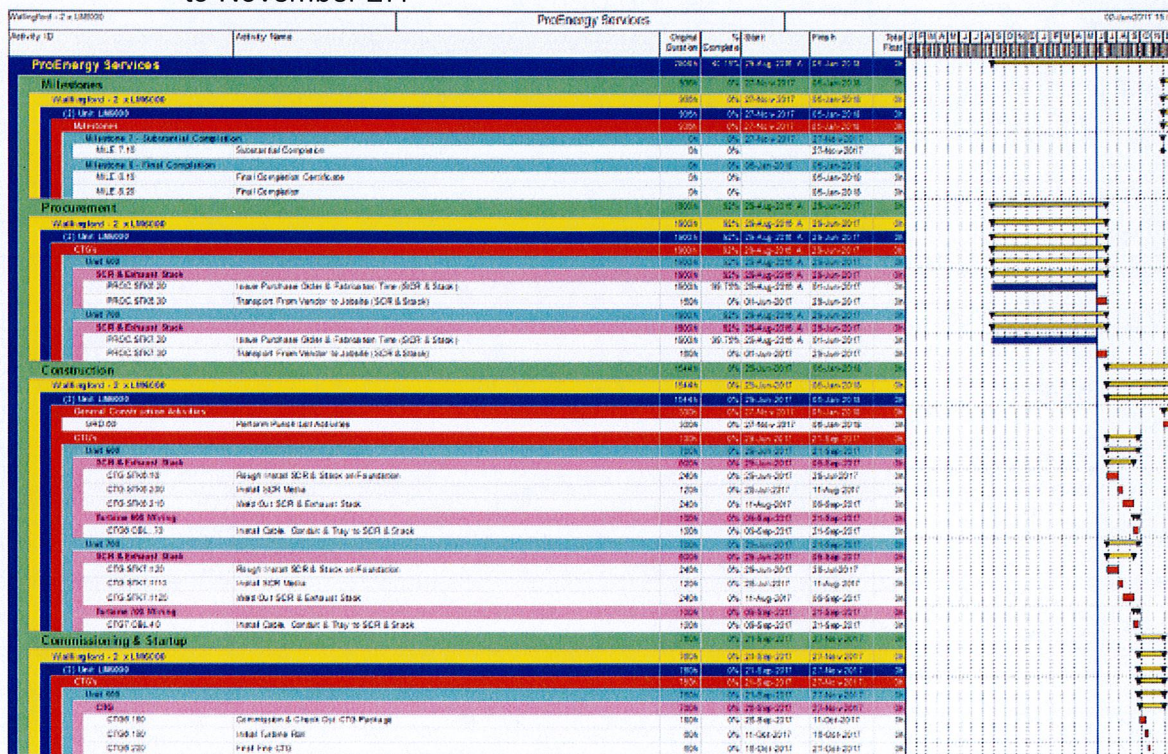
Items on Site = GREEN	IFB	PO	RTS	Shipping	Notes
GSU 1 & Bushings			5-Jun		
HV Disconnect Switch		1-Feb	18-Apr	4/26 at site	10-12 weeks from apvd dwgs
H-Tower Insulators/Misc Hardware				1/31 @ site	
Dead End Structure	18-Aug	22-Nov	4-May	at site 5/12	received approval dwgs from vendor 12/23 (Poured Concrete 2/3 - Cure 2/18)
480V SWGR 1	14-Dec	18-Jan	26-Apr	at site 5/2	3-4 wks dwgs, 8-10 wks RTS, Dwgs Apvd 2/9
480V SWGR 2	14-Dec	18-Jan	26-Apr	at site 5/2	3-4 wks dwgs, 8-10 wks RTS, Dwgs Apvd 2/9
480V Aux XFMR 1	14-Dec	19-Jan	9-Jun	20-Jun	4 wks dwgs, 8-10 weeks, eng apvd 1/19
480V Aux XFMR 2	14-Dec	19-Jan	9-Jun	20-Jun	4 wks dwgs, 8-10 weeks, eng apvd 1/19
45kVA XFMR (Lighting / Control)	14-Dec	21-Dec	3-4 days	at site 5/8	vendor drawings appvd 12/20
13.8kV SWGR / GCB	5-Dec	31-Jan	2-Jun	6-Jun	Parts RTS 3/15 for PT's install, Parts installed needs painting 3/24
15kV Disconnects		25-Jan	7-Apr		2-3 weeks after PO Issued, Eng Apvd 2/9, 6 wks lead time, dwgs rcvd 2/15, dwgs apvd 2/27, shipped from vendor in customs 4/21
PDC Enclosure			21-Apr	load 5/30 at site 6/5-6/6 at site 6/8	
PDC Platforms			?	load 5/30 at site 6/5-6/6	
Gen Protection Panels x 2	31-Jan	7-Apr	12-May		Complete, SEL300 not installed
GSU Protection Panel x 1	31-Jan				Ed Feloni to site 5/22 to review, build in house after site review, 4 weeks build after drawings
Cable Bus	14-Dec	13-Apr	9-Jun	at site 6/14	general item dwgs apvd by eng, quote received issued to Segs 3/22, Segs return w/comments 3/27, 2-3 weeks dwgs, 4-6 weeks RTS
Site Lighting	20-Apr	26-Apr	23-May	24-May	4 week lead time
Turbine 1 Package			27-Jan	at site 4/4	
Generator 1 Package			2-Dec	at site 3/29	
Turbine 2 Package			27-Jan	at site 4/5	
Generator 2 Package			2-Dec	at site 4/4	
CT 1			31-Jan		
CT 2			31-Jan		
Gen 1			24-Feb	at site 4/6	
Gen 2			24-Feb	at site 3/30	
LO Fin Fan 1			28-Apr	at site 5/4	4/21 from 4/4 update, 4/28 from 4/18 update
LO Fin Fan 2			28-Apr	at site 5/4	4/21 from 4/4 update, 4/28 from 4/18 update
WI LP Skid 1			1-Jan	ship 4/10 arrive 4/13	Enclosure Done
WI LP Skid 2			1-Jan	ship 4/10 arrive 4/13	Enclosure Done
Aux Skid 1			1-Feb	ship 4/10 arrive 4/13	Enclosure Done
Aux Skid 2			1-Feb	ship 4/10 arrive 4/13	Enclosure Done
SPRINT Skid 1			2-Dec	ship 4/10 arrive 4/13	Enclosure Done
SPRINT Skid 2			2-Dec	ship 4/10 arrive 4/13	Enclosure Done
Final FG Coalescer 1	12-Dec	10-Jan	21-Jun		9-10 wks (eng apvd 1/9/17); apvl dwgs rcvd 3/22
Final FG Coalescer 2	12-Dec	10-Jan	21-Jun		9-10 wks (eng apvd 1/9/17); apvl dwgs rcvd 3/22
CTG Expansion Joints			1-Jun	30-Jun	
CTG 1 SCR / Stack			1-Jun	30-Jun	9/27 Eng Appvd
CTG 2 SCR / Stack			1-Jun	30-Jun	9/27 Eng Appvd
CEMS	7-Dec	24-Jan	30-Jun	3-Jul	Client Apvl 1/23, 12-14 wks w/ install (1 week install), dwgs 3/31, FAT end of June
Filter House 1			30-May	6-Jun	
Filter House 2			2-Jun	7-Jun	
Fire Protection Cabinet 1			2-Dec	at site 5/8	Complete
Fire Protection Cabinet 2			2-Dec	at site 5/8	Complete
CTG 1 Controls					4 weeks IFR dwgs, 1 week client review, 1 week for IFC, 2 week to build, 2 week test, 4 week install
CTG 2 Controls					4 weeks IFR dwgs, 1 week client review, 1 week for IFC, 2 week to build, 2 week test, 4 week install
BOP Controls					4 weeks IFR dwgs, 1 week client review, 1 week for IFC, 2 week to build, 2 week test, 4 week install
Waste Water Tank / Assembly	4-Jan	16-Mar	15-Jun		14 wks (2 wks dwgs & 10-12 wks fab time), Rcvd dwgs 3/27, Rqst Modified dwgs 3/30
Manhole / Lift Station	4-Jan	8-Mar	7-Jun	7-Jun	dwgs 3/31, 3-4 weeks fab after apvl
Valve Boxes	13-Feb	29-Mar	5-May	at site 5/9	apvd by engineering 3/24, dwgs 3/31, 3-4 wks after apvd dwgs

### 4.1. ANALYSIS

#### 4.1.1. Critical Path Schedule Analysis.

The current critical path flows through the installation of the SCR's / Exhaust Stacks and into the commissioning of the CT's and firing the units. Shipping is working on transporting the first group of material for the SCR's to site out of Mexico. It is believed that we can improve on the installation schedule based on the installation drawings but PES is waiting for the arrival of the material to site and starting work to make any adjustments to durations at this time. The SCR's / Exhaust Stacks are only critical path based on final date of project completion, but the overall project end date has continued to improve.

Please note that currently the Substantial Completion of the project has improved again by another 3 calendar days from November 30 to November 27.



0708 210	Run Unit Full Speed, No Load	80%	2%	21-Oct-2017	28-Oct-2017	OK
0708 220	Run Unit Full Speed, 25% / 50% / 100% Load	80%	2%	28-Oct-2017	11-Nov-2017	OK
0708 230	Perform Commission Test	80%	2%	31-Oct-2017	03-Nov-2017	OK
0708 240	Perform Performance Test	80%	2%	03-Nov-2017	10-Nov-2017	OK
0708 300	Perform Auxiliary Consumption Test	10%	2%	10-Nov-2017	15-Nov-2017	OK
0708 310	Perform Auxiliary Load Test	10%	2%	15-Nov-2017	18-Nov-2017	OK
0708 320	Reliability Run	100%	2%	18-Nov-2017	27-Nov-2017	OK
<b>Terminal 500 Wiring</b>						
0708 080 50	Weggen, Point to Point & Verify Cables - SCR's - Stack	80%	2%	21-Oct-2017	25-Oct-2017	OK
<b>Unit 700</b>						
0708 180	Commission & Check Out CTG Package	100%	2%	28-Oct-2017	28-Nov-2017	OK
0708 190	Initial Factory Ref	100%	2%	28-Oct-2017	11-Dec-2017	OK
0708 200	Final Run 2017	80%	2%	mid-Nov-2017	16-Dec-2017	OK
0708 210	Run Unit Full Speed, No Load	80%	2%	16-Dec-2017	21-Dec-2017	OK
0708 220	Run Unit Full Speed, 25% / 50% / 100% Load	80%	2%	21-Dec-2017	28-Dec-2017	OK
0708 230	Perform Commission Test	80%	2%	28-Dec-2017	11-Jan-2018	OK
0708 240	Perform Performance Test	80%	2%	31-Dec-2017	05-Jan-2018	OK
0708 300	Perform Auxiliary Consumption Test	10%	2%	05-Jan-2018	10-Jan-2018	OK
0708 310	Perform Auxiliary Load Test	10%	2%	10-Jan-2018	15-Jan-2018	OK
0708 320	Reliability Run	100%	2%	15-Jan-2018	27-Jan-2018	OK
<b>Terminal 500 Wiring</b>						
0708 080 190	Weggen, Point to Point & Verify Cables - SCR's - Stack	80%	2%	21-Oct-2017	25-Oct-2017	OK
		80%	2%	21-Oct-2017	25-Oct-2017	OK

Following closely behind the SCR's / Exhaust Stacks installation for critical path are:

- BOP & CTG Controls Systems – Continuing to wait on software to finalize design
- Piping Systems Install
- Cable Bus / Electrical Installation

The controls system is nearing the most critical path of the project. After reviewing with the team the plan moving forward, it is planned to be able to have updated drawings being issued during the next few weeks. As well, it is believed that the software modifications can be achieved in time or before the site has terminations complete to a point to be able to start loop checks.

The piping systems and electrical systems are not major concerns but worth noting that they do remain within days/weeks of the most critical path. Piping material is on site to support construction and the cable bus should be ready to ship to site by June 14th to support tray install and cable pulling.

The sound walls have come out of critical path as material has arrived ahead of schedule and allowing for advanced progress on cable bus installation.

#### 4.1.2. MILESTONES COMPLETED:

- None

#### 4.1.3. MILESTONE SLIPPAGE:

##### 4.1.3.1. I&C Engineering IFR Drawings Released.

- Slippage due partially to when it was determined that service bulletin would not be implemented and to modify existing TransAlta plant software for operation
- Slipped 24 calendar days.

**4.1.3.2. I&C Engineering IFC Drawings Released**

- Slippage directly related to IFR drawing release.
- Slipped 24 calendar days.

**4.1.3.3. SCR6/7 Routh Set on Foundation**

- Slippage caused by issues with shipment from Mexico and crossing customs. This has caused extended delivery times for the SCR/exhaust stack materials.
- Slipped 21 calendar days

**4.1.3.4. CTG 7 Assembly of Major Equipment**

- This has been caused by a delay in shipment of part of the filter assembly.
- Slipped 1 calendar day

**4.1.3.5. SCR6/7 Major Assembly**

- The major assembly has pushed out due to an increased time in shipping of the materials to site.
- Slipped 22 calendar day

**4.1.3.6. Mechanical Completion**

- This has pushed due to the SCR's and exhaust stacks increased shipping times.
- Slipped 22 calendar day

**4.1.3.7. CTG Units Arrive at Site**

- It has been decided to allow the CTG engines remain at PES campus until it is necessary to have them at site to allow for safe storage and maintenance. This will cause this milestone to push accordingly until they are shipping to site near the later part of the project.

**4.2. NOTABLE CHANGES:**

- 4.2.1.** Adjusted logic between GCB.230 'Foundation Back Fill' and GCB.30 'Crate & Prep for Shipping (GCB)' from FS to SS as gear will ship prior to foundation be backfill being completed.
- 4.2.2.** Adjusted duration of AM6.320 'Transport from Vendor to Jobsite (Ammonia Skid)' from 1 week to 3 weeks based of recent shipment data on other deliveries from vendor.
- 4.2.3.** Adjusted duration of PROC.STK6.30 'Transport from Vendor to Jobsite (SCR & Stack)' from 1 week to 3 weeks based of recent shipment data on other deliveries from vendor.
- 4.2.4.** Adjusted duration of CEMS6.290 'Transport from Vendor to Jobsite (CEMS Equipment)' from 1 week to 1 day based on vendor location being within a few hours' drive of site.

- 4.2.5. Adjusted duration of AM7.180 'Transport from Vendor to Jobsite (Ammonia Skid)' from 1 week to 3 weeks based of recent shipment data on other deliveries from vendor.
- 4.2.6. Adjusted duration of PROC.STK7.30 'Transport from Vendor to Jobsite (SCR & Stack)' from 1 week to 3 weeks based of recent shipment data on other deliveries from vendor.
- 4.2.7. Adjusted duration of CEMS7.100 'Transport from Vendor to Jobsite (CEMS Equipment)' from 1 week to 1 day based on vendor location being within a few hours' drive of site.
- 4.2.8. Adjusted duration of AUXXFMR6.90 'Transport from Vendor to Jobsite (Aux XFMR 6)' from 5 days to 6 days.
- 4.2.9. Adjusted duration of AUXXFMR7.120 'Transport from Vendor to Jobsite (Aux XFMR 7)' from 5 days to 6 days.
- 4.2.10. Adjusted duration of PDC.90 'Transport from Vendor to Jobsite (PDC)' from 10 days to 8 days.
- 4.2.11. Adjusted duration of PROC.STK6.30 'Transport From Vendor to Jobsite (SCR & Stack)' from 3 weeks to 4 weeks
- 4.2.12. Adjusted duration of PROC.STK7.30 'Transport From Vendor to Jobsite (SCR & Stack)' from 3 weeks to 4 weeks
- 4.2.13. Changed name of activity CTGSW.140 'Install CTG Sound Wall Steel' to 'Install CTG South Sound Wall Steel'
- 4.2.14. Added activity CTGSW.140 'Install CTG East Sound Wall Steel' to better capture progress of site progress
- 4.2.15. Adjust duration of CTGSW.120 'Install CTG South Sound Wall Steel' from 6 days to 9 days.
- 4.2.16. Changed name of CTGSW.40 'Install CTG Sound Wall Foundations' to 'Install CTG Sound Wall Piles'
- 4.2.17. Adjusted duration of CTGSW.40 'Install CTG Sound Wall Piles' to 8 days from 24 days to match pile install time without grade beam installation.
- 4.2.18. Added activity CTGSW.150 'Install CTG South Sound Wall Grade Beam' due to the piles and grade beams for the sound wall foundation being installed at separate times due to the embedment of the columns in the grade beam.
- 4.2.19. Added activity CTGSW.160 'Install CTG East Sound Wall Grade Beam' due to the piles and grade beams for the sound wall foundation being installed at separate times due to the embedment of the columns in the grade beam.
- 4.2.20. Modified activity name of CTGSW.50 ' Install CTG Sound Wall Panels' to Install CTG South Sound Wall Panels' to allow for more accurate progress tracking of better logic of project progress
- 4.2.21. Adjusted activity CTGSW.50 'Install CTG South Sound Wall Panels' from 12 days to 7 days.

- 4.2.22.** Added activity CTGSW.170 'Install CTG East Sound Wall Panels'
- 4.2.23.** Added linear FS logic between CTGSW.40 'Install CTG Sound Wall Piles', CTGSW.140 'Install CTG East Sound Wall Steel', CTGSW.160 'Install CTG East Sound Wall Grade Beam', CTGSW.170 'Install CTG East Sound Wall Panels', & MILE.2.60 'CTG Sound Wall Complete'. The FS relationship between CTGSW.140 and CTGSW.160 is FS-2day due to the rebar and forms being install 2 days prior to completion of the East wall steel install
- 4.2.24.** Added SS+1D successor of CTGSW.140 'Install CTG East Sound Wall Steel' to PDC.110 'Install PDC' to allow for the PDC to be rough set prior to install the sound wall steel.
- 4.2.25.** Added FS successor of CTGSW.150 'Install CTG South Sound Wall Grade Beam' to CTGSW.120 'Install CTG South Sound Wall Steel'
- 4.2.26.** Added FS successor of CTGSW.50 'Install CTG South Sound Wall Panels' to CTGSW.150 'Install CTG South Sound Wall Grade Beam'
- 4.2.27.** Removed predecessor CTGSW.40 'Install CTG Sound Wall Piles' from CTGSW.50 'Install CTG South Sound Wall Panels' as the logic is not correct due to the added activities.
- 4.2.28.** Modified logic between CTGSW.150 'Install CTG South Sound Wall Grade Beam' and CTGSW.120 'Install CTG South Sound Wall Steel' from FS to FS-2 days as the grade beam forms and rebar will be started being installed 2 days prior to the final completion of the steel install.
- 4.2.29.** Add FS successor CTGSW.170 'Install CTG East Sound Wall Panels' to GRD.20 'Perform Final Site Grading'
- 4.2.30.** Modified activity name CTGSW.130 'Issue Purchase Order & Fabrication Time (CTG Sound Wall Steel)' to 'Issue Purchase Order & Fabrication Time (CTG South Sound Wall Steel)'
- 4.2.31.** Added activity CTGSW.180 'Issue Purchase Order & Fabrication Time (CTG East Sound Wall Steel)' to better show procurement progress of material and allow for better logical ties.
- 4.2.32.** Added FS predecessor & FS successor to CTGSW.180 'Issue Purchase Order & Fabrication Time (CTG East Sound Wall Steel)' respectfully CTGSW.10 'Issue For Bid & Receive Bids From Vendors (CTG Sound Wall)' and CTGSW.140 'Install CTG East Sound Wall Steel'
- 4.2.33.** Added activity CTGSW.190 'Issue Purchase Order & Fabrication Time (CTG East Sound Wall Panels)' to better show procurement progress of material and allow for better logical ties.

- 4.2.34.** Added activity CTGSW.200 'Transport from Vendor to Jobsite (CTG East Sound Wall Panels)' to better show procurement progress of material and allow for better logical ties.
- 4.2.35.** Modified activity name CTGSW.30 'Transport From Vendor to Jobsite (CTG Sound Wall)' to 'Transport From Vendor to Jobsite (CTG South Sound Wall Panels)'
- 4.2.36.** Added FS successor CTGSW.190 'Issue Purchase Order & Fabrication Time (CTG East Sound Wall Panels)' to CTGSW.10 'Issue For Bid & Receive Bids From Vendors (CTG Sound Wall)'
- 4.2.37.** Added FS successor CTGSW.200 'Transport From Vendor to Jobsite (CTG East Sound Wall Panels)' to CTGSW.190 'Issue Purchase Order & Fabrication Time (CTG East Sound Wall Panels)'
- 4.2.38.** Added FS successor of CTGSW.170 'Install CTG East Sound Wall Panels' to CTGSW.200 'Transport From Vendor to Jobsite (CTG East Sound Wall Panels)'
- 4.2.39.** Increased duration of activity SPRT7.280 'Foundation Concrete Cure Time' from 5 hours to 15 days as the original duration was an error.
- 4.2.40.** Added activity GSUSW.120 'Install GSU Sound Wall West Grade Beam' with duration of 7 days
- 4.2.41.** Added activity GSUSW.130 'Install GSU Sound Wall South/East Grade Beam' with duration of 7 days
- 4.2.42.** Added activity GSUSW.140 'Install GSU East Sound Wall Panels and Access Door' with duration of 3 days
- 4.2.43.** Added activity GSUSW.150 'Install GSU West Sound Wall Panels' with duration of 1 day
- 4.2.44.** Added activity GSUSW.160 'Install GSU South Sound Wall Panels' with duration of 1 day
- 4.2.45.** Added activity GSUSW.170 'Install GSU South Sound Wall Steel' with duration of 1 day
- 4.2.46.** Added activity GSUSW.180 'Install GSU East Sound Wall Steel' with duration of 1 day
- 4.2.47.** Modified activity name GSUSW.40 'Install GSU Sound Wall Foundations' to 'Install GSU Sound Wall Piles' and reduced duration from 4 weeks to 7 days
- 4.2.48.** Modified activity name GSUSW.50 'Install GSU Sound Wall' to 'Install GSU West Sound Wall Steel' and reduced duration to 11 days
- 4.2.49.** Added FS successor to GSUSW.180 'Install GSU East Sound Wall Steel', GSUSW.130 'Install GSU Sound South/East Grade Beams'

- 4.2.50.** Added FS successor to GSUSW.170 'Install GSU South Sound Wall Steel', GSUSW.130 'Install GSU Sound South/East Grade Beams'
- 4.2.51.** Added FS successor to GSUSW.50 'Install GSU West Sound Wall Steel', GSUSW.120 'Install GSU Sound West Grade Beam'
- 4.2.52.** Added FS successor to GSUSW.130 'Install GSU Sound Wall South/East Grade Beams', GSUSW.160 'Install GSU South Sound Wall Panels'
- 4.2.53.** Added FS successor to GSUSW.160 'Install GSU South Sound Wall Panels', GSUSW.140 'Install GSU East Sound Wall Panels'
- 4.2.54.** Added FS successor to GSUSW.120 'Install GSU Sound Wall West Grade Beam', GSUSW.150 'Install GSU West Sound Wall Panels'
- 4.2.55.** Removed GSUSW.50 'Install GSU West Sound Wall Steel' successor BUSSTL.80 'Install Cable Bus Supports (GCB to GSU4 Phase II)' and added BUSSTL.80 as a FS successor to GSUSW.140 'Install GSU East Sound Wall Panels'
- 4.2.56.** Removed GSUSW.50 'Install GSU West Sound Wall Steel' successor MILE.2.70 'GSU Sound Wall Complete' and added MILE.2.70 as a FS successor to GSUSW.130 'Install GSU Sound Wall South/East Grade Beams' and GSUSW.120 'Install GSU Sound Wall West Grade Beam'
- 4.2.57.** Added GSUSW.30 'Transport From Vendor to Jobsite (GSU Sound Wall)' as FS predecessor to GSUSW.170 'Install GSU South Sound Wall Steel' and GSUSW.180 'Install GSU East Sound Wall Steel'
- 4.2.58.** Added MILE.7.10 'Substantial Completion' as FS successor to GSUSW.150 'Install GSU West Sound Wall Panels'
- 4.2.59.** Reduced duration of DWPS.100 'Install DW Piping / Hoses Pipe Supports Foundations' from 18 days to 2 days due to there being only two small foundations to install per unit.
- 4.2.60.** Reduced duration of CAPS.100 'Install DW Piping / Hoses Pipe Supports Foundations' from 16 days to 2 days due to there being only two small sonotube foundations to install
- 4.2.61.**

#### **4.3. OVERVIEW**

- 4.3.1.** Schedule attached.

### **5. QUALITY**

- 5.1** Inspected welds (visual and dye penetrant- 1- 6" welds) on the various stainless lines. Visually inspected 47 welds and Liquid dye penetrant of 27 welds. All welds were found to be acceptable.

- 5.2 Completed verification receiving inspection on the structural steel on the buss support system
- 5.3 Verified drilled holes in the Buss/cable foundation on the east side of GSU #6 and on the south wall of the existing CTG
- 5.4 Hydrostatic tested the Ammonia line result were acceptable, witnessed by LS Power Representative (Wade Cantwell)
- 5.5 Pressure tested Instrument Air form vault to tie-in to 150 psi per specifications, witnessed by LS Power representative. Test was successful.
- 5.6 All underground lines with the exception of the PVC have been tape coated, repaired if necessary and holiday tested to the specification as required and acceptable
- 5.7 LS Power Wade Cantwell- Construction Manager audited The QC operations, reviewed multiple areas of disciplines, drawings, document books, certifications and numerous other areas will forward his findings by Monday 05-22-2017

## 6. SAFETY

- 6.1. Daily safety audits performed on PES Crafts and subcontractors working on job site. No major issues to report.
- 6.2. Provide safety orientations to new personnel and new contractors coming to the job site as per PES EHS Manual.

## 7. ISSUES/ACTION

- 7.1. Controls software issue. PES is working on finalizing the software
- 7.2. On May 27th an underground concrete duct bank was found interfering with HUB's pier drilling on the 6th and 7th piers. It appears to be fiber optic cable but LS Power has no drawings showing this duct bank and there are no communications companies are claiming it. We are waiting on LS Power to give us direction on how to proceed.  
HUB lost a half days work. They will be invoicing us for this delay. There is PES labor costs associated with determining what this duct bank is. There will be a change order issued to LS Power once all the associated costs are determined for correcting this issue.

## 8. CHANGE MANAGEMENT

- 8.1. Open Change Orders – None
- 8.2. Pending Change orders
  - On May 27th an underground concrete duct bank was found interfering with HUB's pier drilling on the 6th and 7th piers. HUB lost a half days work. They will be invoicing us for this delay. There is PES labor costs

associated with the re-routing of this duct bank. There will be a change order issued to LS Power once all the associated costs are determined for correcting this issue.

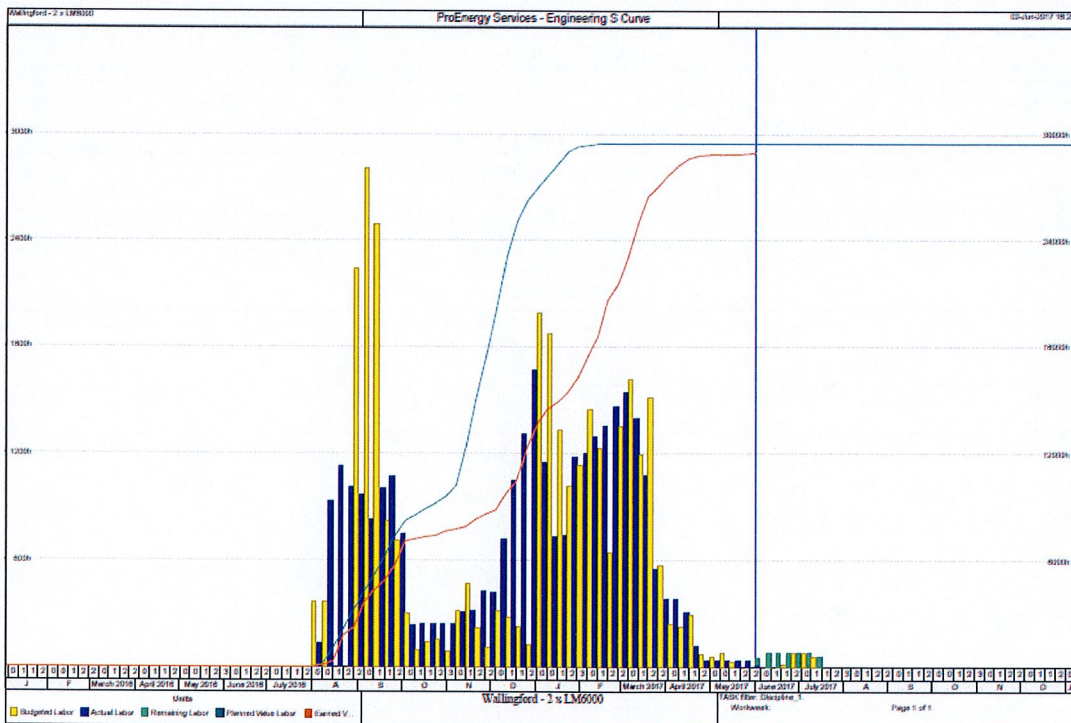
### 9. DRAWING LIST

9.1. Schedule shows key drawing dates.

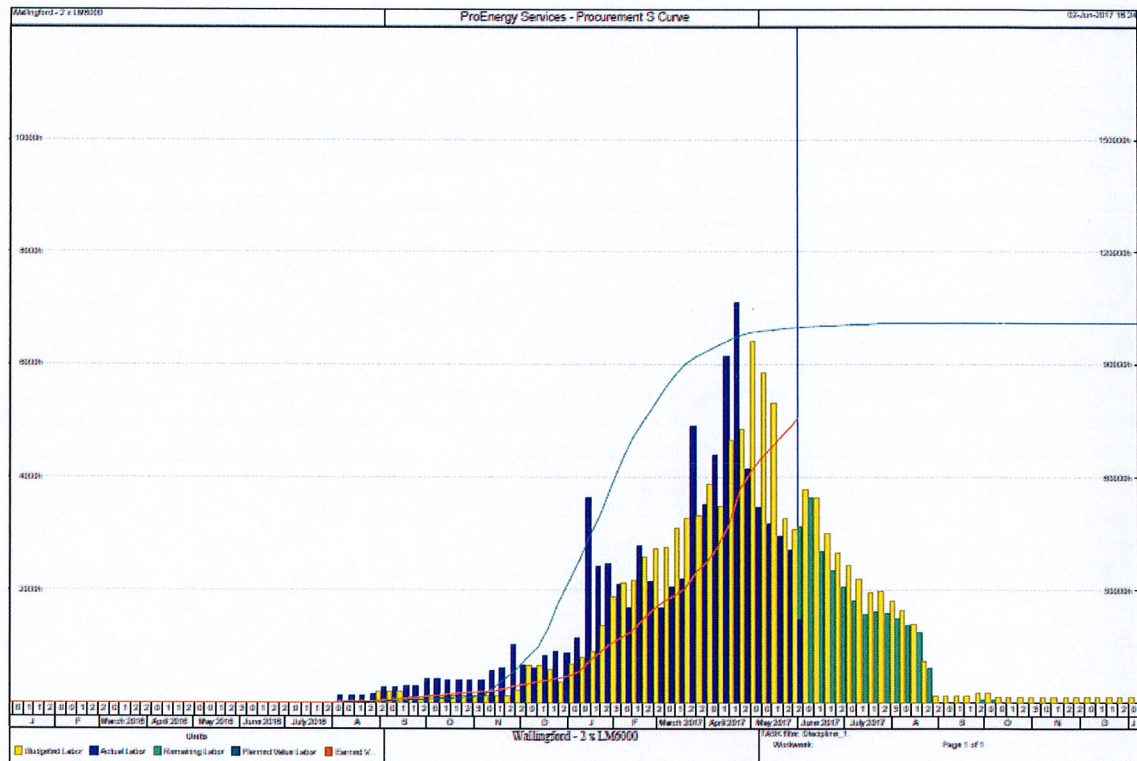
### 10. ANALYTICAL

10.1. See attached progress curves.

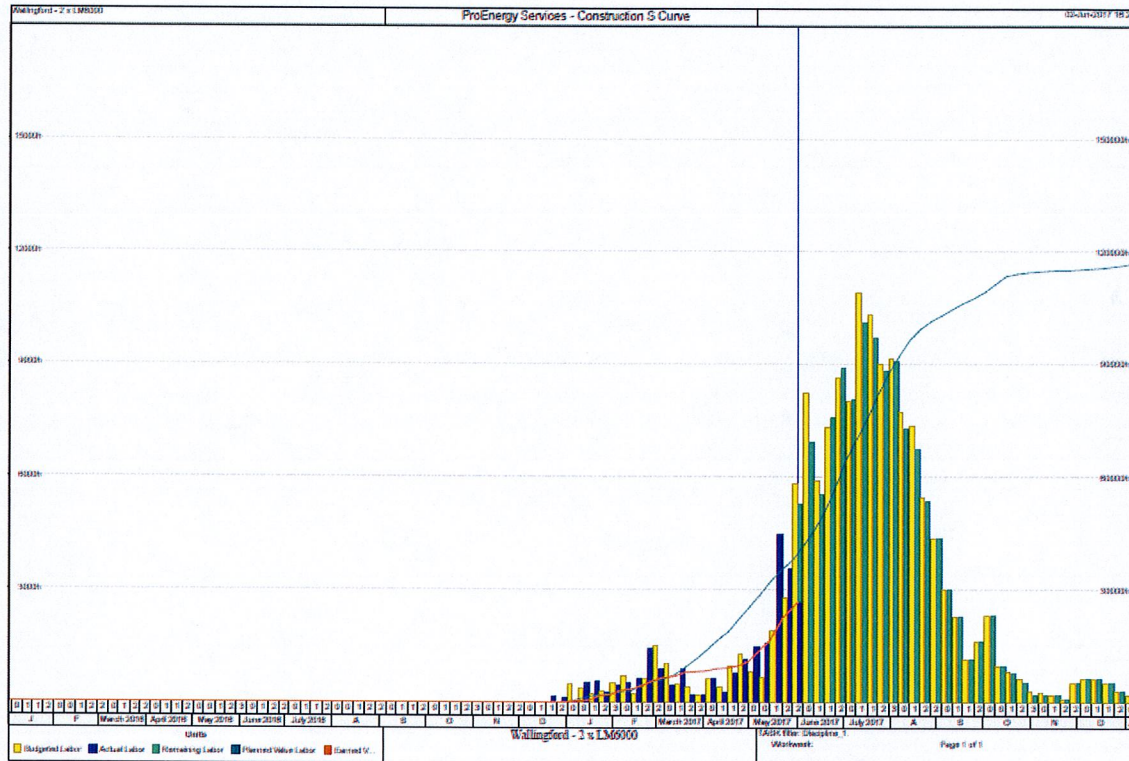
10.1.1. Engineering.



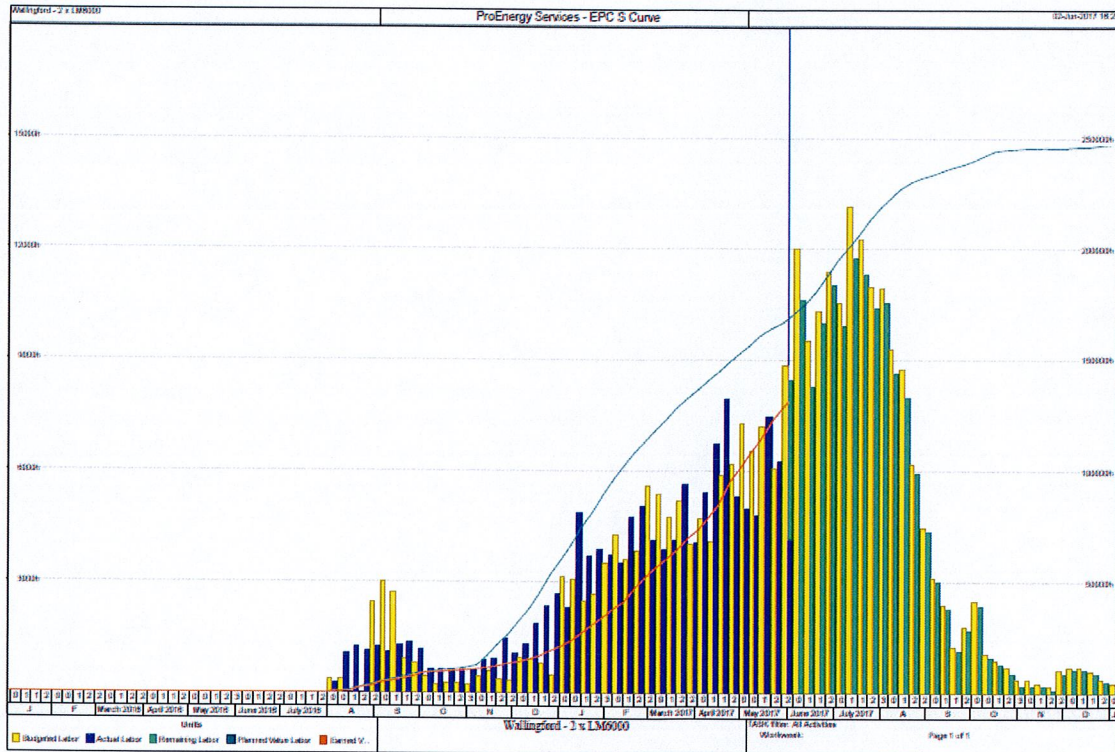
### 10.1.2. Procurement.



### 10.1.3. Construction.



### 10.1.4. EPC.



### 10.1.5. MATERIALS INSTALLED

Concrete			
Foundations	Flowable Fill	Concrete	Total c/y
GT Generators	172	344	516
Exhaust Stack/SCR	290	420	710
Electrical / Control Building	50	75	125
GSU Transformers 13.8kV delta x 13.8kV / 230 kV	30	100	130
Fin fan lube oil, Sprint, Water Injection, CTG removal pad, CO2 rack, Auxiliary skids, Fuel Filter	202	82	284
Cable Tray & Bus foundations	54	80	134
Sound wall & Grade beams	0	302	302
Back fill underground piping	396		396
<b>Total cubic yards installed</b>	<b>1194</b>	<b>1403</b>	<b>2597</b>
Pipe, cable, conduit, etc	May-17	Total installed	
Large Bore Pipe	380'	380'	
Small Bore Pipe	4375'-5"	4375'-5"	
Code Welds			
Cable	710'	710'	
Conduit	155'	155'	
Cable Tray	1025'	1025'	
Terminations			
Loop Checks			

## 11. LABOR STATISTICS.

### 11.1. ProEnergy Services Safety Information for Wallingford Project

	2017 May	Project Total
<b>Employees</b>	68	68
<b>Hours worked</b>	15654	38491
<b>Lost Workdays Incident Rate</b>	0	0
<b>Total Recordable Incident Rate</b>	0	0
<b>DART</b> (Days away, restricted, transferred)	0	0

**12. PERMIT STATUS.**

**12.1.** ProEnergy received Connecticut Major Contractor license.

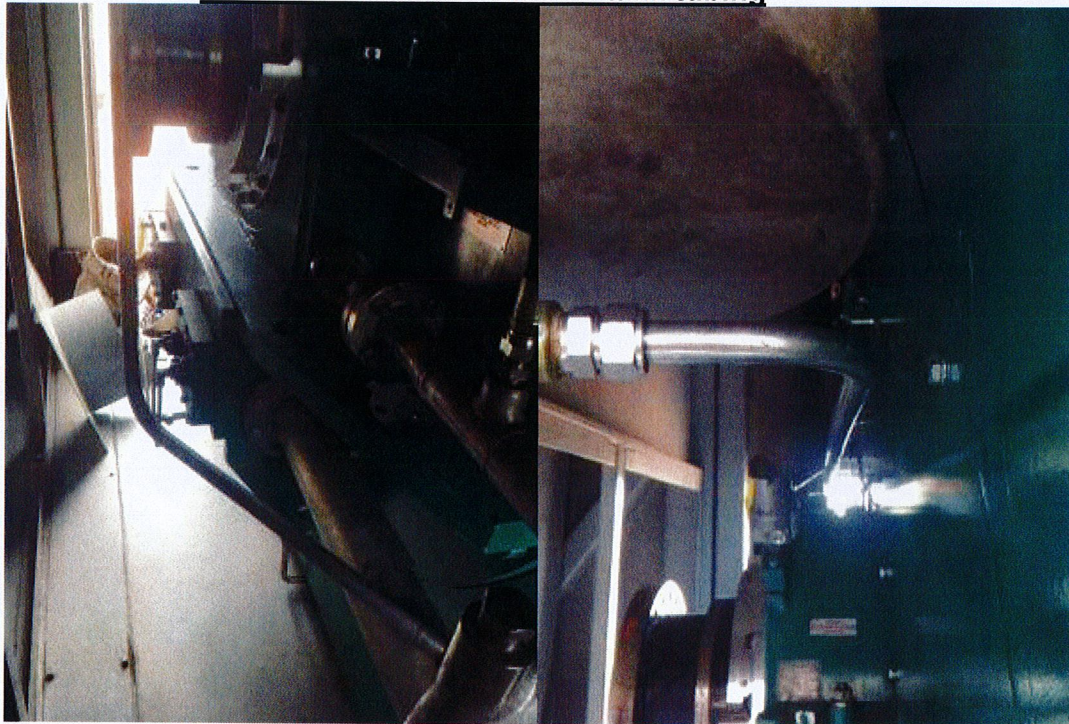
**12.1.1.** Storm Water received October 3.

**12.1.2.** D&M approval received on September 29.

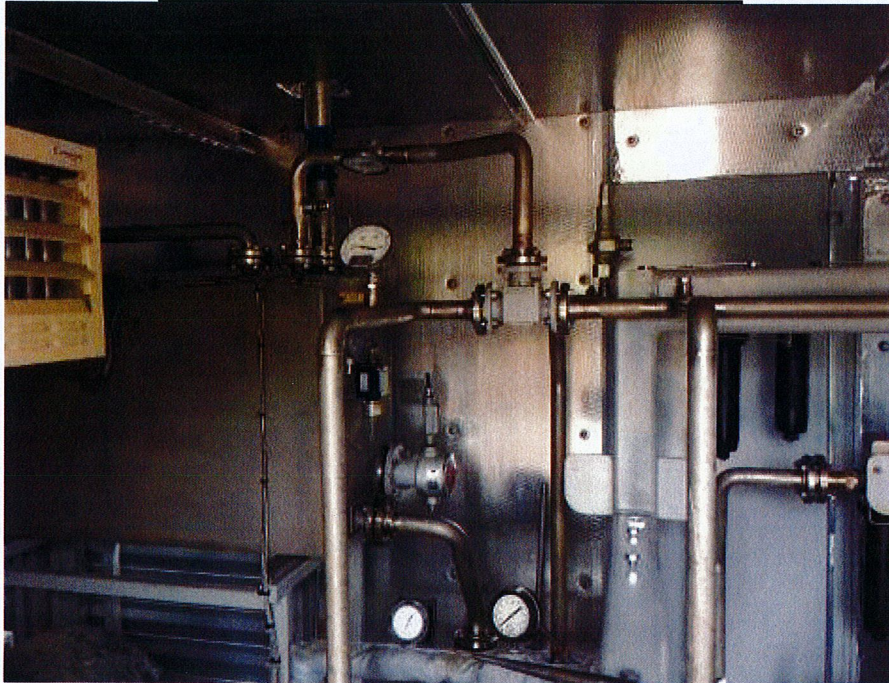
**12.1.3.** None required for Change Order 2 work.

**13. PHOTOS**

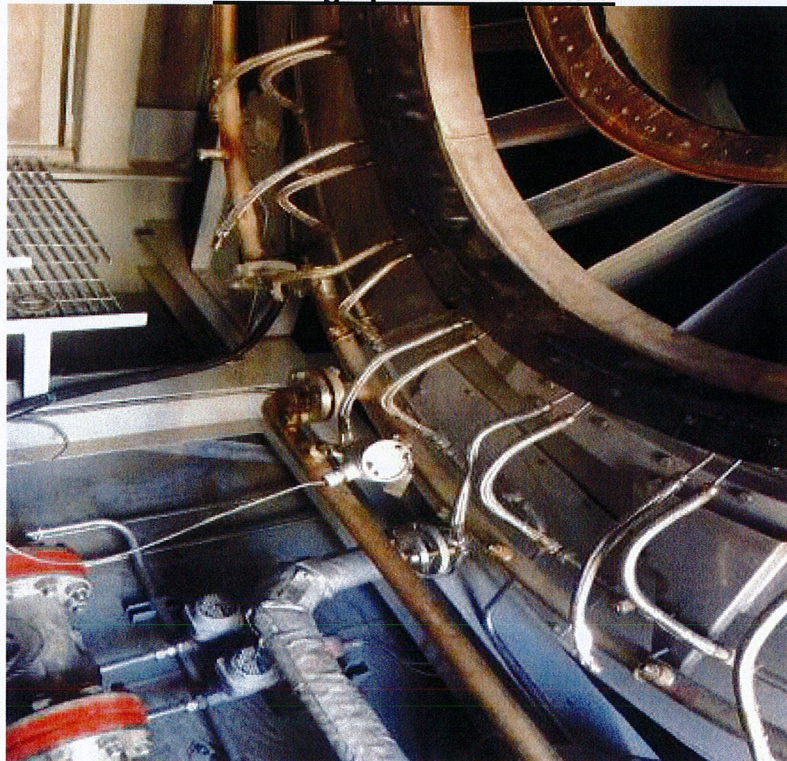
**Fabricate & install rundown tank tubing**



**Reinstate All TLO Piping Inside Aux Skid**



**Cleaning Sprint air manifold**



Unit 7 TLO & Hydraulic Start piping inside Turbine package



Installed #6 aux skid interconnect hoses



**Fin fan Unload**



**Removed formwork around the pipe supports.**



**Buss/cable short support stands erected**



**Assembling Buss Cable support system**



**O & G placed leveling plates on west piers on GSU**



**GSU west wall columns plus the Southwest corner erected**



**GSU West Sound Wall Column bases being grouted**



**Poured concrete on the GSU grade been west wall**



**Poured concrete on the GSU grade been west wall**



**H-Frame is erected**



HUB Contractor, Drilling piers & setting rebar cages for 10 cages



Set rebar and anchor bolts on the sound wall



Setting anchor bolts for piers



Sonotube and formwork for the aboveground gas line pipe supports



**6" carbon steel pipe tie-in in forms ready for Gilsulate placement**



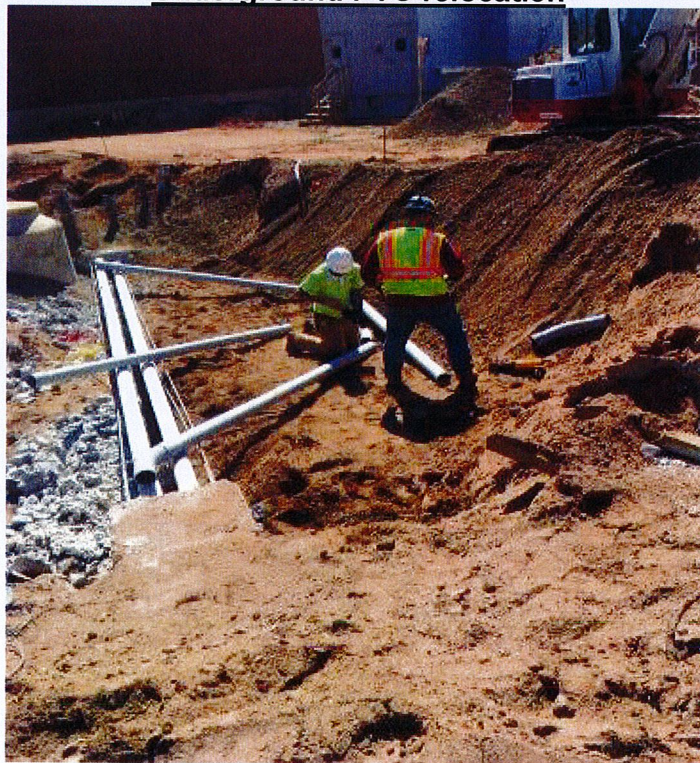
**6" carbon steel pipe tie-in in forms ready for Gilsulate placement**



Setting forms on Unit #6 to pour flow fill to cover the pipes.



Underground PVC relocation



**Relocated fiber optic line to accommodate sound wall pile.**



**Relocated fiber optic cable vault poured**



**Poured flowable fill for breaker pad**



**Installed rebar mat for the Generator Breaker pad**



**6" Gas/fuel above ground placed**



**Piping being welded and placed in trench**



**Piping crew priming and tape coating pipes for underground**



**Exposed tie in location for underground piping**



**Hydro test assembly**



**Vaults placed and underground lines for tie-in set**



**Tied into vaults at Northwest corner of #6**



**Tied into vaults at Northwest corner of #6**



**Grading trench on the Northside of #5**



**Running lines from vault to tie in and east edge**



**Quality Mechanical freezing the 4" Demin line**



**Pressure testing the 1" Potable water line**



Load test on 2" ss line



Main tie-in location for the shut down on 05-22-2017



Duct bank PVC installed



Duct bank PVC installed



**Electrical crew installed pigtails in the grounding loop**



**Poured flowable fill on the auxiliary foundation.**



**PDC foundation started setting rebar**



**Finished setting rebar and formwork ready to pour PDC & Auxiliary transformer**



**Panoramic photo May progress**

