

# 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 **August 1st, 2017 through August 31st, 2017**

Submitted:  
September 8th, 2017  
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**EXECUTIVE SUMMARY**

ProEnergy is pleased to report the Substantial Completion of the project has improved 5 days to the 22 November 2017 date.

The focus for PES this month was preparing for the September 9<sup>th</sup> Outage, start the controls work, start the lube oil flushes and continue with the cable pulls and terminations.

All the work for the September 9<sup>th</sup> outage has been identified and scheduled to be completed by the end of the outage. The goal of the outage for PES is to energize the new 8X GSU and the existing 7X GSU to their respective generator breakers and line interrupter switches. This is to follow up within a week to energize the 480V transformers through to the MCC.

PES has mobilized NEI and their sub-contractor CSE. NEI's focus has been powering up the HMI's, developing the wonderware screens and interfacing the local PLC's to the plant.

CSE's focus was to develop the MCC integration and control topology drawings. This was completed but we found numerous issues with the original Transalta wiring schematics and the MCC bucket drawings. CSE is tasked with developing a new set of MCC wiring schematics. Since Sega based their drawings on the Transalta drawings, CSE is also tasked with resolving conflicts with the Sega drawings and the existing equipment.

PES was prepared to start the lube oil flushes on August 16<sup>th</sup> but delayed the start until grid power was available after the September 9<sup>th</sup> Outage. This has delayed oil flushing by 4-5 weeks. Of note, the current critical path flows through completing the lube oil flushes.

PES did not see all the electrical progress we had planned for due to continued labor issues with finding Connecticut Licensed Electricians, the problem with accurate MCC wiring schematics to terminate to and the amount of field run conduit to install.

The labor issue will be an ongoing issue. We fluctuate between 30-35 electricians. PES has hired up to 19 Dinto (union) electricians now. New wiring schematics of the MCC are 90% done. PES hired more Dinto Electricians to work on installing conduit.

There are no Major Milestones completed this month. PES was hoping to complete the Assembly of Major Equipment Milestones for the #6 and #7 SCR's ahead of schedule but there was trucking issues with getting the equipment out of Mexico. The SCR and Stack for both units was planned to be set by the end of this month. The #6 Stack and SCR is set. The #7 Stack won't be completely set until the 8<sup>th</sup> of September.



The back feeding of the GSU, starting up the 480V system and flushing of the LO systems (both Turbine Lube Oil and Generator Lube Oil) are now on the current critical path. The duration of the lube oil flushes is critical. On previous jobs the flushes have taken approximately 3 weeks to complete. The flushes need to be done prior to having the engines installed and final dress-out completed.

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** - None reported

### **1.2 FABRICATION / SHOP WORK**

**1.3.1** 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.

### **1.3 CONSTRUCTION**

#### **1.4.1. MECHANICAL**

#6 CTG Equipment - No Work Scheduled

#### #6 De-Icing System

- Finished the anchor bolts on silencer for inlet heating.
- Installed the sparger seal plates on A & B sides of inlet heating
- Completed installing the headers and piping from the turbine to the filter house inlet.

#### #6 Auxiliary Skid

- Worked on punch list.

#### #6 Sprint Skid

- Installed supports, guides, anchors, U-bolts and pipe protection shields.
- Installed drain and supports.



- Worked on punch list.

#### #6 Oil Systems

- GLO System - Prep piping for flush. Waiting on power
- TLO System - Prep piping for flush. Waiting on power
- Fin Fan LO Cooler - Connected flushing skid hoses to the cooler. Waiting on power
- Jacking Oil System – No work scheduled

#### #6 Fuel Gas System

- Completed Pneumatic air test of pipe 06FG-3-010 at 1200 psi for 15 min. LS Power, Randy Bryan witnessed the last fuel/gas test from the coalescing filter to the CTG on units 6 and 7.
- Installed PSV, piping shoes, vents & vent supports.

#### #6 Ammonia Injection Skid

- Installed pipe supports, 90s and valves on ammonia headers.
- Fabricated conduit supports on ammonia skids.

#### #6 Evap System

- Installed Evap header hangers.
- Supply and drain header complete.
- Hydro test demineralized fill line.

#### #6 Fin Fan Lube Oil Cooler Skid

#### #6 LP Water Injection Skid

- Installed pipe drains, protection shields and supports.

#### #6 CO2 Rack Skid – No scheduled work

- #6 Oily Connected flush hoses to the flushing skid for the lube oil flush.
- Installed guides and wear pads.

#### Water Drains

- Installed cleanout covers and lids with concrete bases.
- Installed valve boxes.

#### #6 Wash Water Drains

- Installed cleanout covers and lids with the concrete base.
- Installed unit drains and supports.



#### #6 SCR

- Completed insulation and liner plate installation.

#### #6 Stack

- Fit and welded the stack transition breech, silencer and top section.
- Installed insulation and liner plates in stack and silencer section.
- Started to install platforms.

#### #7 CTG Equipment

- Fabricated platform end handrail for filter house
- Painted & Installed end handrail for filter house

#### #7 De-Icing Systems

- Finished the anchor bolts on silencer for inlet heating.
- Installed the sparger seal plates on A & B sides of inlet heating
- Completed installing the headers and piping from the turbine to the filter house inlet.

#### #7 Auxiliary Skid - No Work Scheduled

#### #7 Sprint Skid

- Installed pipe supports.

#### #7 Oil Systems

- GLO System - Prep piping for flush. Waiting on power
- TLO System - Prep piping for flush. Waiting on power
- Fin Fan LO Cooler - Connected flushing skid hoses to the cooler. Waiting on power
- Jacking Oil System – No work scheduled

#### #7 Evap System

- Installed Evap header hangers.
- Supply and drain header complete.
- Hydro test demineralized fill line.

#### #7 Ammonia Injection Skid

- Installed 90s and valves on ammonia headers.
- Fabricated & installed ammonia pipe 07AM-0.75-204 and pipe supports



#7 Fuel Gas System

- Completed Pneumatic air test of pipe 07FG-3-010 at 1200 psi for 15 min. LS Power, Randy Bryan witnessed the last fuel/gas test from the coalescing filter to the CTG on units 6 and 7.
- Installed PSV, piping shoes, vents & vent supports.

#7 Fin Fan Lube Oil Cooler Skid

- Connected flush hoses to the flushing skid for the lube oil flush.
- Installed guides and wear pads.

#7 LP Water Injection Skid

- Installed pipe supports.

#7 CO2 Rack Skid – No scheduled work#7 Oily Water Drains

- Installed 07DR-3-316 redline from north header to east sound wall and backfill.
- Installed cleanout covers and lids w/concrete base.
- Installed fiberglass valve boxes.
- Finished install to Aux Transformer
- Taped and backfill.100%.

#7 Wash Water Drains

- Installed cleanout covers and lids w concrete base.
- Set the waste water tank and completed hydro test for 24 hours.

#7 Water Injection Skid

- Installed supports.

#7 SCR

- Installed Insulation and liner plates in unit # 7 SCR.

#7 Stack

- Fit and welded the stack transition breech and silencer section.



- Installed insulation and liner plates in stack and silencer section.
- Started to install platforms.

Fuel Gas Pipeline Installation – No scheduled work

#### **1.4.2. ELECTRICAL**

##### 15KV System

- Installed 25 feet 4" GRC conduit.
- Continued installing cables into Unit 6 Switchgear from GSU.
- CEG, Inspected 15kV > Switchgear PT compartment and breakers
- Installed Lightning Arrestors on GSU area
- Installed 2 cables to 13.8 Switchgear = 600' feet

##### 480 Auxiliary Switchgear and Transformer

- Finished the Cable Tray for Auxiliary transformer.
- Pulled 300 feet Cable from LISW to 15Kv Switchgear.
- Installed 41 Stress Cones 15KV Switchgear.
- Terminated 480V Switchgear Secondary at MCC.
- Terminating cables to the transformers and switchgear.
- Installed 4 cables to Unit 6 LISW = 1100' feet
- Installed 4 cables to Unit 7 LISW = 1100' feet

##### 480V System

- Continued installing Supports.
- Installed 300 feet cable tray divider.
- Installed 80' feet 24" inch Cable Tray.
- Installed 20 feet 12" Cable tray.
- Installed 35 feet 30" Cable Tray
- Started dressing out cables in cable tray
- Installed 70' 2" ridged conduit to cable tray
- Installed 10' 1" ridged conduit to cable tray
- Tailed in cables to MCC Buckets

##### Control, Instrument and Power Cables

- Continued pulling control cables from the #6 & #7 MGTB & MTTB to the PDC.
- Continued pulling power and control cables to the #6 & #7 CTG Aux skids.



#### PDC Building

- CEG, tested equipment and cables as they become available.
- NEI, CES & CEG reviewed GSU 7&8 control wiring with Roger Beene

#### Lighting – No scheduled work

#### Grounding

- Continue working on grounding.
- Made 60 Taps.

#### Underground Conduit & Temp power– No scheduled work

### 1.4.3. CONTROLS

- PES hired NEI to complete the MCC I/O design, turbine controls, BOP integration and system checkouts. The table below shows the tasks and percent complete. NEI started work on the following tasks:

|    |   |      |
|----|---|------|
| 1  | Create BOP integration one-line integration topology diagram.   | 80%  |
| 2  | Purchase BOP integration PLC hardware   | 100% |
| 3  | Install, test, and commission BOP integration PLC hardware.   |      |
| 4  | MCC New PLC Programming   |      |
| 5  | 90/70. Review current program relating to MCC monitoring, control, and protection.  |      |
| 6  | Functional testing and commissioning of MCC I/O devices to new PLC  |      |
| 7  | MCC. Integrate new MCC PLC controller into BOP HMI.   |      |
| 8  | CEMS: Test and commission communications between the CEMS PLC's and the new DAHS system. Determine requirements to integrate the two new CEMS data into the facility DAHS   | 5%   |
| 9  | Unit 6 & Unit 7 - Review current local Wonderware HMI screens   | 100% |
| 10 | Unit 6 & 7 - NEI to make necessary modifications to the Local Wonderware HMI screens.   | 25%  |
| 11 | Install local Workstation computer.   | 100% |
| 12 | Sega Cable List (50 to BOP Cabinet): Review Cables List with GE Numbers to determine any new I/O that needs to be added to the MCC BOP PLC. - Create point to point termination drawings for items in the Sega list & BOM | 90%  |



|    |  |     |
|----|--|-----|
| 13 | Sega Cable List (50 to BOP Cabinet): Modify MCC BOP PLC inter-connect drawing to add additional BOP I/O based on Cables List. Create new MCC BOP PLC hardware BOM based on additional BOP I/O.   |     |
| 14 | WEII - Exhibit B-1, 6.1 Balance of Plant Control System (Facility SCADA). Review, analyze, and implement required SCADA screens.   | 10% |
| 15 | WEII - Exhibit B-1, 6.2 Combustion Turbine Generator & Auxiliaries. Review, analysis, and implementation to Integration T6 and T7 remote monitoring and control into existing facility SCADA (Cimplicity) HMI.   | 50% |
| 16 | WEII - Exhibit B-1 - xc.pdf, 6.3 Continuous Emission Monitoring System. Review, analyze, and incorporate new CEMS shelter into existing facility CEMS server/DAHS.   |     |
| 17 | SCR. Review, analyze, and incorporate stand-alone controls into existing facility BOP.   |     |
| 18 | 8X Transformer. Review, analyze, and incorporate monitoring into existing facility BOP.  | 95% |
| 19 | Heat Trace. Review, analyze, and incorporate monitoring into existing facility BOP.  |     |
| 20 | 8X Transformer Hydrogen (Dissolved gas) Review, analyze, and incorporate monitoring into existing facility BOP.  | 95% |
| 21 | Unit 6 & 7 10-Minute Start. Review, analyze, implement & Test  |     |
| 22 | Mk VI Fuel Controller. Install Unit T6 & T7 CPU. Power up and install program  | 50% |
| 23 | Unit 6 & 7 90/70: Sequence modifications: Add anti-icing monitoring, control, and protection.  |     |
| 24 | Unit 6 & 7 90/70: Sequence modifications: Add Evap cooler monitoring, control, and protection.   |     |
| 25 | 90/70: Sequence modifications: Add Fuel block and bleed, monitoring, control, and protection.  |     |
| 26 | Startup support:<br>Installation, Testing, and Commissioning<br>o Lube oil flushing<br>o Servo Calibrations<br>o Turbine Pre-Crank Activities<br>o Turbine Crank (Pre-Fired) Activities<br>o Turbine FSNL (Fired, Pre-Synchronization) Activities<br>o Turbine FSNL, Synchronization, Part-Load Activities<br>o Turbine FSNL, Synchronization, Full-Load Activities<br>Support. (Assumes 6, 10-hour days).<br>Control Specialist. ST, OT, and DT |     |
| 27 | Device Calibrations: LM6000 Instrumentation Calibrations. (Assumes 6, 10-hour days).<br>Instrument Tech. ST, OT, and DT  |     |



|    |  |      |
|----|--|------|
| 28 | Loop checks:<br>- Verify correct interconnect wiring terminations.<br>- Verify correct data values in Mk VI control system.<br>- Verify correct data values displayed on HMI<br>Assumes 6, 10-hour days<br>Controls Eng II. ST, OT, and DT |      |
| 29 | TCP LM90 Sequencer PLC   | 100% |
| 30 | Create new MCC drawing schematics  | 100% |
| 31 | Create 125VDC Drawing  | 95%  |
| 32 | #6 & #7 Generator Breaker Failure Indication   | 0%   |
| 33 | #6 & #7 Review "Fiber" requirement for generator protection relays SEL-2664 and SEL-700G. Define cable for PES to order if needed.   | 0%   |

#### 1.4.4. CIVIL

- Continue grade & back fill around job site
- Placed rock and grading on the South and west quadrants of the CTGs.
- Excavated for piping to install drain line and marking tape underground on the North sides of units 6 and 7.
- Backfilled Oily water drains.
- Placed rock in the area adjacent to the GSU & PDC drain pipe
- Continued installing clean out access covers at various locations
- Continued grouting pipe supports on unit 7.

#### 1.4.5. STRUCTURAL

##### GSU Sound Wall & H-Frame

- Received completion letter from O&G for sound walls on GSU and CTG, with the exception of the pass door at the GSU.

##### CTG Sound Wall

- O&G, Finished Caulk Horizontal & Vertical Precast Joints.
- Received completion letter from O&G for sound walls on GSU and CTG.

## 2. PLANNED ACTIVITIES FOR NEXT PERIOD

### 2.1. ENGINEERING



2.1.1. Controls - NEI & CSE will continue to work on the BOP Integration, battery systems and SCADA screens

**2.2. PROCUREMENT LOOK AHEAD**

2.2.1. Continue with Procurement as outlined in the schedule.

**2.3. FABRICATION / SHOP WORK - No scheduled work**

**2.4. CONSTRUCTION**

**2.4.1. MECHANICAL**

#6 CTG Equipment – No Work Scheduled

#6 Auxiliary Skid

- Complete all remaining piping & pipe supports

#6 Sprint Skid

- Complete all remaining piping & pipe supports
- Flush Piping

#6 Fuel Gas System

- Install the 3" pipe & pipe supports from the fuel gas filter to the turbine compartment.
- Install the system vents.
- Complete air blows

#6 Ammonia Injection Skid

- Complete all remaining piping & pipe supports
- Flush Piping

#6 Evap System

- Complete all remaining piping & pipe supports
- Flush piping

#6 De-Icing System

- Complete piping & pipe supports
- Flush piping

#6 Fin Fan Lube Oil Cooler Skid

- Start Fin Fan, TLO and GLO circuit flush.

#6 LP Water Injection Skid

- Complete all remaining piping & pipe supports



- Flush piping

#6 CO2 Rack Skid – No Work Scheduled

#6 Oily Water Drains –

- Complete all remaining piping & pipe supports

#6 Wash Water Drains

- Install Waste Water Drain Tank
- Complete installation of the lift Station pump and control wiring.

#6 SCR

- Complete installation

#6 Stack

- Complete installation

#7 CTG Equipment

- Start Generator Lube Oil Flush.
- Start Turbine Lube Oil Flush.
- Start Hydraulic Start Oil Flush.

#7 Auxiliary Skid

- Complete all remaining piping & pipe supports

#7 Sprint Skid

- Complete all remaining piping & pipe supports
- Flush Piping

#7 Fuel Gas System

- Install the 3" pipe & pipe supports from the fuel gas filter to the turbine compartment.
- Install the system vents.
- Complete air blows

#7 Ammonia Injection Skid

- Complete all remaining piping & pipe supports
- Flush Piping

#7 Evap System

- Complete all remaining piping & pipe supports



- Flush piping

#### #7 De-Icing System

- Complete piping & pipe supports
- Flush piping

#### #7 Fin Fan Lube Oil Cooler Skid

- Start TLO and GLO circuit flush.

#### #7 LP Water Injection Skid

- Complete all remaining piping & pipe supports
- Flush piping

#### #7 CO2 Rack Skid – No Work Scheduled

#### #7 Oily Water Drains –

- Complete all remaining piping & pipe supports

#### #7 Wash Water Drains

- Complete all remaining piping & pipe supports

#### #7 SCR

- Complete installation

#### #7 Stack

- Complete installation
- Install the system vents.

### **2.4.2. ELECTRICAL**

#### 15KV System

- Continue pulling power and instrumentation cable.
- Complete Hi Pot Testing
- Complete terminations

#### 480 Auxiliary Switchgear and Transformer

- Continue pulling power and instrumentation cable
- Complete Hi Pot Testing
- Complete terminations

#### 480V MCC

- Continue pulling power and instrumentation cable.



Control, Instrument and Power Cables

- Complete pulling control and power cables from #6 MGTB to the PDC.
- Complete pulling cables to the #6 MTTB from the PDC.
- Complete pulling power cables to the #6 CTG Aux skids.
- Complete pulling control and power cables from #7 MGTB to the PDC.
- Complete pulling cables to the #7 MTTB from the PDC.
- Complete pulling power cables to the #7 CTG Aux skids.
- Start terminating power and instrument cables to both units.

PDC Building

- Install the air conditioner

Grounding – No work scheduled

Temp power

- Hook up a temporary diesel generator for 480V power to the MCC

**2.4.3. CONTROLS**

➤ BOP Integration

- Create one-line, Balance-Of-Plant control system integration topology drawing.
- Define communication requirements between the PEECC and facility control room.
- Define Unit T6 and Unit T7 remote monitoring and control requirements for the facility control room.
- Define device IP Addresses

➤ Motor Control Center

- Complete engineering design of the Motor Control Center (MCC) monitoring and control system.
- Create device interconnect drawing
- Create Bill-Of-Material (BOM).
- Install hardware; RX3i, Input/Output Modules & terminal blocks
- Review Mk VI Sequencer program to determine correct MCC monitoring and control is implemented.
- Modify Sequencer program if necessary.
- Program new PLC.



- Integrate new PLC into respective Mk VI control system.
- Functional test MCC I/O to Mk VI control system.
- Wonderware HMI
  - Review existing display screens for Unit T6 and Unit T7.
  - Modify existing Wonderware HMI screens as required.
  - Install Annex1 (Unit T6)
  - Annex2 (Unit T7) HMI's in PEECC.
  - Install Annex3 as the engineering station in the PDC
- Unit T6 and Unit T7 Specific Activities:
  - Install and power up new Mk VI fuel controller UCVD.
    - Down load program.
    - Verify proper operation.
  - Power up 90/70 PLC Sequencer.
    - Down load program.
    - Verify proper operation.
- Modify control system program to incorporate:
  - Anti-icing monitoring, control, and protection.
  - Evap cooler monitoring, control, and protection.
  - New fuel block and bleed monitoring, control, and protection.
- Review existing display screens for Unit T6 and Unit T7. Modify existing Wonderware HMI screens as required

#### **2.4.4. CIVIL**

- Grout the #6 Stack
- Grout the #7 Stack
- Remove grass on the north side of the fuel gas pipe and lay down crushed stone.

#### **2.4.5. STRUCTURAL**

##### GSU Sound Wall & H-Frame

- Complete caulking and installation of the door

### **3. STARTUP & COMMISSIONING**

#### **3.1. #6 CTG Equipment**

- Electrical - AC lube oil pump rotation check & run in (uncoupled).
- Mechanical – AC lube oil pump commissioning & run in. TLO & GLO flushing including fin fans.
- Controls & I/C - Calibrate instrumentation, loop check.

#### **3.2. #6 Auxiliary Skid**

- Electrical -



- Mechanical – Turbine Lube oil flush.
- Controls & I/C - Calibrate instrumentation, loop check.

**3.3. #6 Sprint Skid**

- Electrical
- Mechanical
- Controls & I/C - Calibrate instrumentation, loop check.

**3.4. #6 Fuel Gas System**

- Electrical
- Mechanical – Air blows up to CTG package.
- Controls & I/C - Calibrate instrumentation, loop check.

**3.5. #6 SCR / Ammonia Injection Skid**

- Electrical
- Mechanical
- Controls & I/C - Calibrate instrumentation, loop check.

**3.6. #6 Evap System**

- Electrical - Pump rotation check & run in (uncoupled).
- Mechanical
- Controls & I/C Calibrate instrumentation, loop check.

**3.7. #6 De-Icing System**

- Electrical
- Mechanical
- Controls & I/C

**3.8. #6 LP Water Injection Skid**

- Electrical - Pump rotation check & run in (uncoupled).
- Mechanical
- Controls & I/C - Calibrate instrumentation, loop check.

**3.9. #6 CO2 Rack Skid**

- Electrical
- Mechanical
- Controls & I/C

**3.10. #7 CTG Equipment**



- Electrical - AC lube oil pump rotation check & run in.
- Mechanical – AC lube oil pump commissioning & run in. TLO & GLO flushing including fin fan.
- Controls & I/C - Calibrate instrumentation, loop check.

**3.11. #7 Auxiliary Skid**

- Electrical
- Mechanical – Turbine lube oil flush.
- Controls & I/C - Calibrate instrumentation, loop check.

**3.12. #7 Sprint Skid**

- Electrical
- Mechanical
- Controls & I/C - Calibrate instrumentation, loop check.

**3.13. #7 Fuel Gas System**

- Electrical
- Mechanical - Air blows up to CTG package.
- Controls & I/C - Calibrate instrumentation, loop check.

**3.14. #7 SCR / Ammonia Injection Skid**

- Electrical
- Mechanical
- Controls & I/C - Calibrate instrumentation, loop check.

**3.15. #7 Evap System**

- Electrical - Pump rotation check & run in (uncoupled).
- Mechanical
- Controls & I/C - Calibrate instrumentation, loop check.

**3.16. #7 De-Icing System**

- Electrical
- Mechanical
- Controls & I/C

**3.17. #7 LP Water Injection Skid**

- Electrical - Pump rotation check & run in (uncoupled).
- Mechanical
- Controls & I/C - Calibrate instrumentation, loop check.



**3.18. #7 CO2 Rack Skid**

- Electrical
- Mechanical
- Controls & I/C

**4. PROCUREMENT STATUS – None**



### 5. DELIVERY STATUS

| On site                          | IFB    | PO        | RTS    | Shipping     | Critical @ Site Date | Notes                                |
|----------------------------------|--------|-----------|--------|--------------|----------------------|--------------------------------------|
| GSU 1 & Bushings                 |        |           | 5-Jun  | at site 6/20 | 21-Jun               | Complete                             |
| 480V SWGR 1                      | 14-Dec | 18-Jan    | 26-Apr | at site 5/2  | 14-Aug               | Complete                             |
| 480V SWGR 2                      | 14-Dec | 18-Jan    | 26-Apr | at site 5/2  | 18-Aug               | Complete                             |
| 480V Aux XFMR 1                  | 14-Dec | 19-Jan    | 9-Jun  | 19-Jun       | 28-Jun               | Complete                             |
| 480V Aux XFMR 2                  | 14-Dec | 19-Jan    | 9-Jun  | 19-Jun       | 20-Jul               | Complete                             |
| 13.8kV SWGR / GCB                | 5-Dec  | 31-Jan    | 2-Jun  | 6-Jun        | 19-Jul               | Complete                             |
| Dead End Structure w/ Disconnect | 18-Aug | 22-Nov    | 4-May  | at site 5/12 | 15-May               | Complete                             |
| PDC Enclosure                    |        |           | 21-Apr | load 5/30 at | at site 6/8          | Complete                             |
| Gen Protection Panels x 2        | 31-Jan | 7-Apr     | 31-Jul |              | 9-Aug                | material on order to build panel out |
| GSU Protection Panel x 1         | 31-Jan |           | 31-Jul | at site 8/3  | 27-Sep               | CEG fabricating                      |
| Cable Bus                        | 14-Dec | 13-Apr    | 9-Jun  | at site 6/14 | 2-Aug                | Complete                             |
| CTG 1 Package                    |        | Packaging | 27-Jun | at site 4/4  | 22-May               | Complete                             |
| CTG 2 Package                    |        | Packaging | 27-Jun | at site 4/5  | 25-May               | Complete                             |
| CT 1                             |        | Aero      | 30-Dec |              | 8-Aug                | In Sedalia storage                   |
| CT 2                             |        | Aero      | 30-Dec |              | 8-Aug                | In Sedalia storage                   |
| Gen 1                            |        | Packaging | 24-Feb | at site 4/6  | 29-May               | Complete                             |
| Gen 2                            |        | Packaging | 11-Feb | at site 3/30 | 1-Jun                | Complete                             |
| LO Fin Fan 1                     |        | 12-Oct    | 21-Apr |              | 4-Aug                | Complete                             |
| LO Fin Fan 2                     |        | 12-Oct    | 21-Apr |              | 4-Aug                | Complete                             |
| WI LP Skid 1                     |        | Packaging | 30-Dec |              | 21-Aug               | Complete                             |
| WI LP Skid 2                     |        | Packaging | 30-Dec |              | 21-Aug               | Complete                             |
| Aux Skid 1                       |        | Packaging | 1-Feb  |              | 21-Aug               | Complete                             |
| Aux Skid 2                       |        | Packaging | 1-Feb  |              | 21-Aug               | Complete                             |
| SPRINT Skid 1                    |        | Packaging | 3-Feb  |              | 21-Aug               | Complete                             |
| SPRINT Skid 2                    |        | Packaging | 3-Feb  |              | 21-Aug               | Complete                             |
| Final FG Coalescer 1             | 12-Dec | 10-Jan    | 21-Jun |              | 5-Sep                | Complete                             |
| Final FG Coalescer 2             | 12-Dec | 10-Jan    | 21-Jun |              | 5-Sep                | Complete                             |
| CTG 1 SCR / Stack                |        | 29-Aug    | 1-Jun  |              | 2-Aug                | remaining material to ship 8/29-8/30 |
| CTG 2 SCR / Stack                |        | 29-Aug    | 1-Jun  |              | 2-Aug                | remaining material to ship 8/29-9/13 |
| CEMS                             | 7-Dec  | 24-Jan    | 30-Jun | 1 day        | 15-Sep               | FAT 7/13                             |
| Filter House 1                   |        | Packaging | 19-May |              | 12-Jul               | Complete                             |
| Filter House 2                   |        | Packaging | 19-May |              | 12-Jul               | Complete                             |
| Fire Protection Cabinet 1        |        | Packaging | 2-Dec  |              | 27-Sep               | Complete                             |
| Fire Protection Cabinet 2        |        | Packaging | 2-Dec  |              | 27-Sep               | Complete                             |
| CTG 1 Controls                   |        |           | 31-Aug |              | 25-Jul               | NEI Performing Work                  |
| CTG 1 Rebuild Server / HMI       |        |           | 31-Aug |              | 21-Jul               | NEI Performing Work                  |
| CTG 2 Controls                   |        |           | 31-Aug |              | 25-Jul               | NEI Performing Work                  |
| CTG 2 Rebuild Server / HMI       |        |           | 31-Aug |              | 21-Jul               | NEI Performing Work                  |
| BOP Controls                     |        |           | 31-Aug |              | 27-Jul               | NEI Performing Work                  |
| Waste Water Tank / Assembly      | 4-Jan  |           | 10-Jul | at site 8/3  | 24-Oct               | Heater Pads delivery slipped         |
| Manhole / Lift Station           | 4-Jan  |           | 5-May  |              | 19-Sep               | Complete                             |
| CTG Sound Wall                   | 6-Feb  |           | 19-Jun | at site 7/10 | 29-Jun               |                                      |
| GSU Sound Wall                   | 6-Feb  |           | 26-Jun | at site 7/10 | 9-Aug                |                                      |



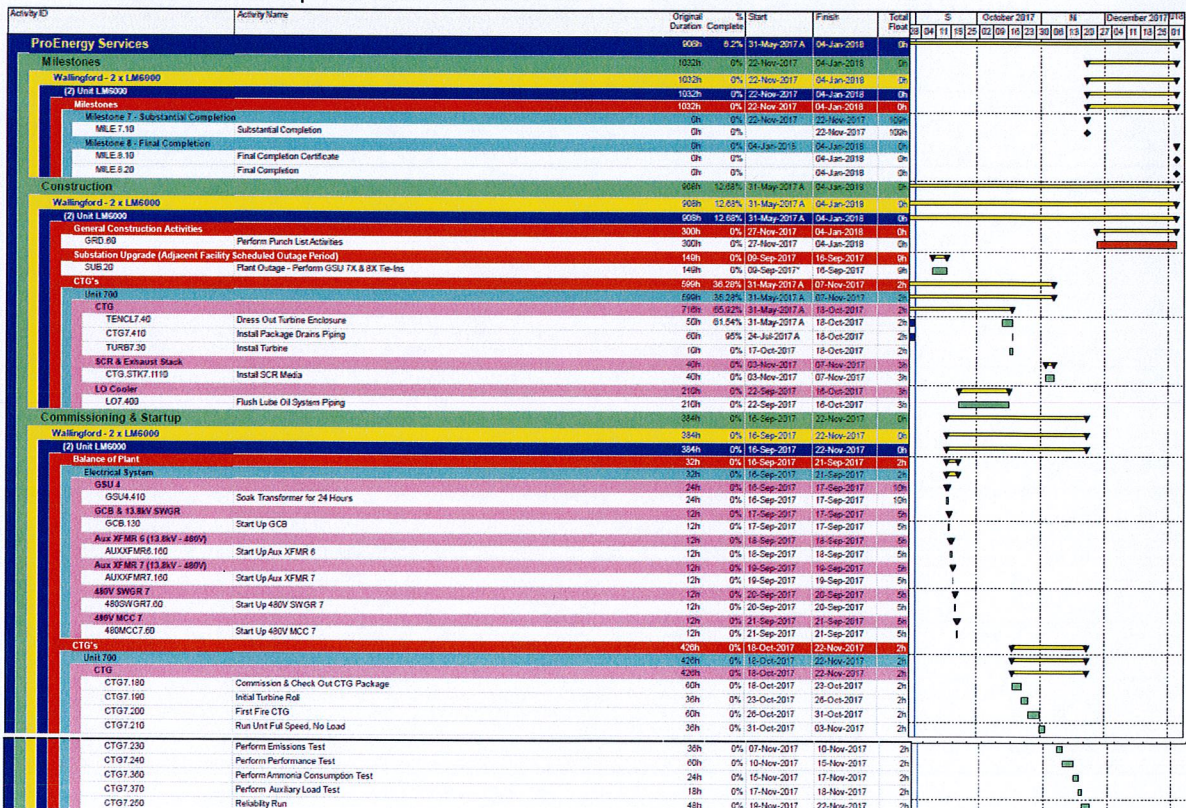
### 6. SCHEDULE

#### 6.1. CRITICAL PATH ANALYSIS

The current critical path flows through back feeding the GSU, starting up the 480V system and flushing of the LO systems (both Turbine Lube Oil and Generator Lube Oil). Previous jobs have shown that flushes have taken approximately 3 weeks to complete so that the engines can be installed and final dress-out and installation can be completed.

The schedule this month has gone through a major scrub to verify durations and look over logic as well as compare the requirements in the contract. From these activities many changes have occurred and have shown that there were some missed logic ties and durations were exaggerated as well. This has not pushed out the completion date, but has better aligned the tasks ahead with the plan as well as the contract.

Please note that the system is only critical to the activities driving the substantial completion date but not past the 12/15/2017 contractual date. Currently Substantial Completion is November 22.





Items following closely behind the critical path are:

- Installation of the balance of electrical systems 480V and below.
- SCR/Stack Install
- Installation of the protective relay systems

The electrical crew continues to work on making terminations to support the expected September 9<sup>th</sup> outage. The work front should not be limited by the crew size as it is currently seen and the pulls and terminations are being tracked by cable number so progress can be tracked and the work force redirected if necessary. Also, there are multiple sub-contractors that will be used to complete the work front on installation and commissioning of the electrical equipment.

The SCR/Stack has slipped due to issues with delivery from the vendor. This has pushed out the expected completion of the stacks on both units than what was expected, but with a few work arounds have been able to eliminate these issues pushing out the completion date.

One of the sub-contractors lined for pre-outage and outage work will be dedicated to performing all work necessary to support finalizing and testing the necessary relay installation and testing prior to outage completion.

## **6.2 MILESTONES COMPLETED:**

- I&C Engineering IFR Drawings Released – 8/11/2017

## **6.3 MILESTONE SLIPPAGE**

- I&C Engineering IFC Drawings Released
  - Slippage caused by updating MCC Interconnect drawings based on new findings on equipment. NEI and PES plans to be complete the first full week of September with these drawings. Progress is continuing for design, fabrication and construction on the sections that are complete.
  - Slipped 9 calendar days
- CTG6 First Fire
  - Due to not starting the LO flushing as soon as expected, the first fire date has moved out. The commissioning and start up manager has reviewed the plan to minimize any slip to substantial completion and has revised durations and logic to tighten up the end activities for the project.
  - Slipped 10 calendar days
- CTG7 First Fire



- Due to not starting the LO flushing as soon as expected, the first fire date has moved out. The commissioning and start up manager has reviewed the plan to minimize any slip to substantial completion and has revised durations and logic to tighten up the end activities for the project.
- Slipped 11 calendar days
- CTG6 First Sync
  - First sync has moved out due to the first fire date slipping, but due to expected reduced durations after scrubbing the schedule, a day for day slip was not noticed.
  - Slipped 8 days
- CTG7 First Sync
  - First sync has moved out due to the first fire date slipping, but due to expected reduced durations after scrubbing the schedule, a day for day slip was not noticed.
  - Slipped 9 days
- Mechanical Completion
  - After reviewing the contract terms again, it was noticed that this milestone would be achieved after the units are synchronized and producing power and so the milestone date has adjusted accordingly after adding the appropriate logic. Because of this miss in logic, the substantial completion was not changed.
  - Moved 41 days
- CTG Units Arrive at Site
  - It was previously planned to have the engines arrive on site near the end of August to the first of September, but has pushed out to near the middle of October due to flushes not starting.
- GSU Backfeed
  - The outage being finalized has caused the time of the outage to be adjusted for this milestone and so the change in date by 1 day occurred.
  - Moved out 1 days

#### **6.4 NOTABLE CHANGES:**

- Reduced duration of activities CTG.STK6.200 & CTG.STK7.1110 'Install SCR Media' from 12 days each to 4 days each. The reduction in time is based on recent field experience from other job sites installing catalyst from the same vendor.
- Adjusted logic to show catalyst on both SCR's to be installed after engine being run for 10 minutes full speed per vendor's requirements.



- Removed predecessor & successor CTG.STK6.10 'Rough Install SCR & Stack on Foundation' & CTG.STK6.210 'Weld Out SCR & Exhaust' of CTG.STK6.200 'Install SCR Media'
- Added successor CTG.STK6.210 'Weld Out SCR & Exhaust Stack' to CTG.STK6.10 'Rough Install SCR & Stack on Foundation'
- Added predecessor CTG6.210 'Run Unit Full Speed, No Load' to CTG.STK6.200 'Install SCR Media'
- Added successor CTG6.230 'Perform Emissions Test' to CTG.STK6.200 'Install SCR Media'
- Changed activity CTG.STK6.200 'Install SCR Media' to 7 day work week.
- Removed predecessor & successor CTG.STK7.120 'Rough Install SCR & Stack on Foundation' & CTG.STK7.1120 'Weld Out SCR & Exhaust' of CTG.STK7.1110 'Install SCR Media'
- Added successor CTG.STK7.1120 'Weld Out SCR & Exhaust Stack' to CTG.STK7.120 'Rough Install SCR & Stack on Foundation'
- Added predecessor CTG7.210 'Run Unit Full Speed, No Load' to CTG.STK7.1110 'Install SCR Media'
- Added successor CTG7.230 'Perform Emissions Test' to CTG.STK7.1110 'Install SCR Media'
- Changed activity CTG.STK7.1110 'Install SCR Media' to 7 day work week.
- Added predecessor TURB6.30 'Install Turbine' to CTG.STK6.60 'Install Expansion Joint to Stack & GT' because the exhaust diffuser that the expansion joint connects to will need to be adjusted after the engine is installed
- Removed successor CTG.STK6.70 'Install Platforms & Ladders' from CTG.STK6.60 'Install Expansion Joint to Stack & GT' because the platforms can be installed prior to the expansion joint install.
- Added predecessor TURB7.30 'Install Turbine' to CTG.STK7.130 'Install Expansion Joint to Stack & GT' because the exhaust diffuser that the expansion joint connects to will need to be adjusted after the engine is installed
- Removed successor CTG.STK7.140 'Install Platforms & Ladders' from CTG.STK7.130 'Install Expansion Joint to Stack & GT' because the platforms can be installed prior to the expansion joint install.
- Reduced durations of CEMS installation CEMS6.40 & CEM7.260 'Install CEMS Skid' from 3 weeks to 1 week per an email from the vendor.
- Increased duration of LO flushes from 2 weeks to 3.5 weeks due to recent experience with vendor equipment flushing. Activities adjusted were LO6.420 & LO7.400 'Flush Lube Oil System Piping'



- Adjusted logic between turbine install and turbine enclosure dress out to FF instead of FS as most of the enclosure will be dressed out except for what tasks can't be completed until the engine is installed.
  - Adjusted relationship between TURB6.30 'Install Turbine' and TENCL6.40 'Dress Out Turbine Enclosure' from FS to FF relationship.
  - Adjusted relationship between TURB7.30 'Install Turbine' and TENCL7.40 'Dress Out Turbine Enclosure' from FS to FF relationship.
- Added predecessor LO6.420 'Flush Lube Oil System Piping' to TURB6.30 'Install Turbine' as the engine will not be installed until the LO flushes are complete.
- Added predecessor LO7.400 'Flush Lube Oil System Piping' to TURB7.30 'Install Turbine' as the engine will not be installed until the LO flushes are complete.
- Added activity SUB.20 'Plant Outage – Perform GSU 7X & 8X Tie-Ins' to tie activities pending tie-ins to be completed with 24 hour calendar.
- The calibration of all the instrumentation has been reduced after working with a contractor to determine the time frame to perform the work.
  - FGINST.60 'Calibrate Fuel Gas Instrumentation' reduced from 3 weeks to 2 weeks
  - DWINST.50 'Calibrate Demin Water Instrumentation' reduced from 3 weeks to 2 weeks
  - CAINST.50 'Calibrate Compressed Air Instrumentation' reduced from 2.5 weeks to 2 weeks
- Adjusted logic between REVM6 'Install Revenue Meter 6' and REVM7 'Install Revenue Meter 7' from FS to FF as both meters are in the same cabinet.
- Reduced durations on pipe flushing/blows for BOP piping as site plans to be able to flush piping in 1 week due to the small amount of piping from the tie-ins to the skid boundaries.
  - Reduced duration of DWPIP.60 'Flush Demin Water Piping' from 2 weeks to 1 week.
  - Reduced duration of CAPIP.60 'Perform Blows on Compressed Air Piping' from 2 weeks to 1 week.
  - Reduced duration of AMPIP.60 'Flush Ammonia Piping' from 2 weeks to 1 week.
- Adjusted logic between instrumentation installation and cable/conduit/tray installation to better represent the installation methods being used as once the instrumentation is installed final terminations will be completed instead of electrical waiting to install the tray/conduit & cable until the instrumentation is installed.



- Adjusted relationship between DWINST.40 'Install Demin Water Instrumentation' and CBL.BOP.30 'Install DW Control Valve & Instrumentation Cable, Conduit & Tray' from a FS relationship to a FF.
- Adjusted relationship between FGINST.40 'Install Fuel Gas Instrumentation' and CBL.BOP.10 'Install FG Control Valve & Instrumentation Cable, Conduit & Tray' from a FS relationship to a FF.
- Adjusted relationship between CAINST.40 'Install Compressed Air Instrumentation' and CBL.BOP.50 'Install CA Control Valve & Instrumentation Cable, Conduit & Tray' from a FS relationship to a FF.
- Adjusted relationship between AMINST.40 'Install Ammonia Instrumentation' and CBL.BOP.70 'Install Ammonia Control Valve & Instrumentation Cable, Conduit & Tray' from a FS relationship to a FF.
- After reviewing the P&ID's and scope of instrumentation, the durations of instrumentation installation was reduced on the following.
  - DWINS.40 'Install Demin Water Instrumentation' was reduced from 3 weeks to 2 weeks
  - FGINST.40 'Install Fuel Gas Instrumentation' was reduced from 4 weeks to 2 weeks.
  - CAINST.40 'Install Compressed Air Instrumentation' was reduced from 4 weeks to 2 weeks.
- Added predecessor BOPCNTL.70 'Start Up BOP Controls System' to CAVLV.50 'Point to Point, Stroke, Function Check & Verify Compressed Air Valves' to better drive the activity for start up
- Added predecessor LO6.420 'Flush Lube Oil System Piping' with a FF tie to TURB6.20 'Transport From Vendor to Jobsite (Turbine)' to better show engine delivery time frame.
- Added predecessor LO7.400 'Flush Lube Oil System Piping' with a FF tie to TURB7.20 'Transport From Vendor to Jobsite (Turbine)' to better show engine delivery time frame.
- Reduced duration of TURB6.30 & Turb7.30 'Install Turbine' from 2 days to 1 day. These can be completed in a single shift.
- Removed predecessors 480SWGR6.50 'Commission & Test 480V SWGR 6', 480SWGR7.50 'Commission & Test 480V SWGR 7', AUXXFMR6.150 'Commission & Test Aux XFMR 6' & AUXXFMR7.150 'Commission & Test Aux XFMR 7' from MILE.CONST.10 'GSU Backfeed' as these tasks are not required for backfeed.
- Added predecessor GSU4.410 'Soak Transformer for 24 Hours' with a SF relationship to MILE.CONST.10 'GSU Backfeed' as this activity will help correctly drive the milestone.
- Added predecessors CTG6.220 'Run Unit Full Speed, 25% / 50% / 75% / 100% Load' and CTG7.220 'Run Unit Full Speed, 25% / 50% / 75% / 100%



Load' to MILE.6.10 'Mechanical Completion' because it was missed earlier that to achieve Mechanical Completion synchronization has to occur.

- Added predecessor 480MCC6.60 'Start Up 480V MCC 6' to LO6.420 'Flush Lube Oil System Piping' to drive flushing not to start until after the GSU back feed and start-up of 480V system
- Added predecessor 480MCC7.60 'Start Up 480V MCC 7' to LO7.400 'Flush Lube Oil System Piping' to drive flushing not to start until after the GSU back feed and start-up of 480V system
- The following durations for commissioning and start up activities were adjusted per the plan of the Commissioning & Start-up manager based off experience, system sizes and contractual terms. Please see below the adjustments in activity durations
  - GCB.130 'Start Up GCB' – reduced from 6 days to 1 day
  - AUXXFMR6.160 'Start Up Aux XFMR 6' – reduced from 5 days to 1 day
  - AUXXFMR7.160 'Start Up Aux XFMR 7' – reduced from 5 days to 1 day
  - 480SWGR6.60 'Start Up 480V SWGR 6' – reduced from 5 days to 1 day
  - 480SWGR7.60 'Start Up 480V SWGR 7' – reduced from 5 days to 1 day
  - 480MCC6.60 'Start Up 480V MCC 6' – reduced from 5 days to 1 day
  - 480MCC7.60 'Start Up 480V MCC 7' – reduced from 5 days to 1 day
  - PDC.170 'Start Up PDC' – reduced from 15 days to 1 day
  - GSU4.420 'Test Controls & Alarms on GSU' – reduced 3.5 days to 2 days
  - REVM6.50 'Commission & Test Revenue Meter 6' – reduced 3.5 days to 1 day
  - REVM7.50 'Commission & Test Revenue Meter 7' – reduced 3.5 days to 1 day
  - GPR6.50 'Commission & Test Generator Protective Relay 6' – reduced 3.5 days to 2 days
  - GPR7.50 'Commission & Test Generator Protective Relay 7' – reduced 3.5 days to 2 days
  - GSUPR.50 'Commission & Test GSU Protective Relay' – reduced 3.5 days to 2 days
  - 138PR.50 'Commission & Test 13.8kV SWGR Protective Relay' – reduced 3.5 days to 1 day
  - 480PR.50 'Commission & Test 480V SWGR Protective Relay' – reduced 3.5 days to 1 day
  - HFRM.120 'Commission & Test H Frame & Disconnect' – reduced 8.5 days to 1 day
  - GCB.120 'Commission & Test GCB' – reduced 8.5 days to 2 days
  - AUXXFMR6.150 'Commission & Test Aux XFMR 6' – reduced 5 days to 2 days



- AUXXFMR7.150 'Commission & Test Aux XFMR 7' – reduced 5 days to 2 days
- 480SWGR6.50 'Commission & Test 480V SWGR 6' – reduced 15 days to 2 days
- 480SWGR7.50 'Commission & Test 480V SWGR 7' – reduced 15 days to 2 days
- 480MCC6.50 'Commission & Test 480V MCC 6' – reduced 15 days to 1 day
- 480MCC7.50 'Commission & Test 480V MCC 7' – reduced 15 days to 1 day
- 125VDC.50 'Commission & Test 125V DC' – reduced 10 days to 3 days
- 125VDC.60 'Start Up 125V DC' – reduced 5 days to 2 days
- UPSDC.50 'Commission & Test UPS DC' – reduced 10 days to 5 days
- UPSDC.60 'Start Up UPS DC' – reduced 5 days to 2 days
- PDC.160 'Commission & Test PDC' – reduced 15 days to 1 day
- BUS2B.50 'Megger, Point to Point & Verify Cable Bus' – reduced 5 days to 1 day
- GG.50 'Test Grounding Grid' – reduced 4 days to 1 day
- AM6.410 'Commission & Check Out Ammonia Skid' - reduced 5 days to 2 days
- AM6.420 'Start Up Ammonia Skid' – reduced 3.5 days to 1 day
- CEMS6.250 'Commission & Check Out CEMS Equipment' – reduced 10 days to 4 days
- CEMS6.260 'Start Up CEMS Equipment' – reduced 10 days to 3 days
- AUX6.400 'Commission & Check Out Aux System' – reduced 10 days to 3 days
- AUX6.410 'Start Up Aux System' – reduced 10 days to 1 day
- LO6.430 'Commission & Check Out Lube Oil System' – reduced 15 days to 3 days
- LO6.440 'Start Up Lube Oil System' – reduced 10 days to 2 days
- LPWI6.400 'Commission & Check Out LP WI System' – reduced 10 days to 2 days
- LPWI6.410 'Start Up LP WI System' – reduced 10 days to 1 day
- SPRT6.400 'Commission & Check Out SPRINT System' – reduced 10 days to 3 days
- SPRT6.410 'Start Up SPRINT System' – reduced 10 days to 1 day
- FP6.240 'Start Up Fire Protection Equipment' – reduced 10 days to 1 day
- EVAP6.410 'Commission & Check Out Evap System' – reduced 10 days to 4 days
- EVAP6.420 'Start Up Evap System' – reduced 10 days to 1 day



- FGC6.400 'Commission & Check Out Fuel Gas Coalescer System' – reduced 10 days to 3 days
- FGC6.420 'Start up Fuel Gas Coalescer System' – reduced 2 days to 1 day
- CTG6CNTL.60 'Start Up CTG Controls System' – reduced 6 days to 3 days
- AM7.410 'Commission & Check Out Ammonia Skid' - reduced 5 days to 2 days
- AM7.420 'Start Up Ammonia Skid' – reduced 3.5 days to 1 day
- CEMS7.300 'Commission & Check Out CEMS Equipment' – reduced 10 days to 4 days
- CEMS7.310 'Start Up CEMS Equipment' – reduced 10 days to 3 days
- AUX7.400 'Commission & Check Out Aux System' – reduced 10 days to 3 days
- AUX7.410 'Start Up Aux System' – reduced 10 days to 1 day
- LO7.410 'Commission & Check Out Lube Oil System' – reduced 15 days to 3 days
- LO7.420 'Start Up Lube Oil System' – reduced 10 days to 2 days
- LPWI7.400 'Commission & Check Out LP WI System' – reduced 10 days to 2 days
- LPWI7.410 'Start Up LP WI System' – reduced 10 days to 1 day
- SPRT7.400 'Commission & Check Out SPRINT System' – reduced 10 days to 3 days
- SPRT7.410 'Start Up SPRINT System' – reduced 10 days to 1 day
- FP7.220 'Start up Fire Protection Equipment' – reduced 10 days to 1 day
- EVAP7.410 'Commission & Check Out Evap System' – reduced 10 days to 4 days
- EVAP7.420 'Start Up Evap System' – reduced 10 days to 1 day
- FGC7.400 'Commission & Check Out Fuel Gas Coalescer System' – reduced 10 days to 3 days
- FGC7.420 'Start up Fuel Gas Coalescer System' – reduced 2 days to 1 day
- CTG7CNTL.60 'Start Up CTG Controls System' – reduced 6 days to 3 days
- FGVLV.50 'Point to Point, Stroke, Function Check & Verify Fuel Gas Valves' – reduced 10 days to 1 day
- FGINST.50 'Function Check & Verify Fuel Gas Instrumentation' – reduced 15 days to 1 day
- DMVLV.50 'Point to Point, Stroke, Function Check & Verify Demin Water Valves' – reduced 5 days to 1 day



- DMINST.60 'Function Check & Verify Demin Water Instrumentation' – reduced 10 days to 2 days
- CAVLV.50 'Point to Point, Function Check & Verify Compressed Air Valves' – reduced 10 days to 1 day
- CAINST.60 'Function Check & Verify Compressed Air Instrumentation' – reduced 13.5 days to 1 day
- AMVLV.50 'Point to Point, Function Check & Verify Ammonia Valves' – reduced 8.5 days to 1 day
- AMINST.60 'Function Check & Verify Ammonia Instrumentation' – reduced 8.5 days to 1 day
- BOPCNTL.70 'Start up BOP Controls System' – reduced 6 days to 3 days
- TENCL6.40 'Dress Out Turbine Enclosure' – reduced 24 days to 5 days and reduced % complete after audit.
- TENCL7.40 'Dress Out Turbine Enclosure' – reduced 24 days to 5 days and reduced % complete after audit.
- CTG6.180 'Commission & Check Out CTG Package' – reduced 15 days to 5 days
- CTG7.180 'Commission & Check Out CTG Package' – reduced 15 days to 5 days
- CTG6.190 'Initial Turbine Roll' – reduced 5 days to 3 days
- CTG7.190 'Initial Turbine Roll' – reduced 5 days to 3 days
- CTG6.220 'Run Unit Full Speed, 25% / 50% / 75% / 100% Load' – reduced 5 days to 3 days
- CTG7.220 'Run Unit Full Speed, 25% / 50% / 75% / 100% Load' – reduced 5 days to 3 days
- CTG6.210 'Run Unit Full Speed, No Load' – reduced 5 days to 3 days
- CTG7.210 'Run Unit Full Speed, No Load' – reduced 5 days to 3 days
- CTG6.370 'Perform Auxiliary Load Test' – reduced 2.5 days to 1.5 days
- CTG7.370 'Perform Auxiliary Load Test' – reduced 2.5 days to 1.5 days
- CTG6.360 'Perform Ammonia Consumption Test' – reduced 2.5 days to 2 days
- CTG7.360 'Perform Ammonia Consumption Test' – reduced 2.5 days to 2 days
- CTG6.230 'Perform Emissions Test' – reduced 5 days to 3 days
- CTG7.230 'Perform Emissions Test' – reduced 5 days to 3 days
- CTG6.250 'Reliability Run' – reduced 8.5 days to 4 days
- CTG7.250 'Reliability Run' – reduced 8.5 days to 4 days
- BUS1B.50 'Megger, Point to Point & Verify Cable Bus' – reduced 5 days to 1 day
- CBL.BOP.380 'Megger, Point to Point & Verify Cables – 125V DC System' – reduced 4 days to 1 day



- CBL.BOP.400 'Megger, Point to Point & Verify Cables - UPS System' – reduced 4 days to 1 day
- CBL.BOP.240 'Megger, Point to Point & Verify Cables – 13.8kV SWGR' – reduced 6 days to 1 day
- CBL.BOP.340 'Megger, Point to Point & Verify Cables – 480V MCC 6' – reduced 10 days to 5 days
- CBL.BOP.360 'Megger, Point to Point & Verify Cables – 480V MCC 7' – reduced 10 days to 5 days

## **6.5. OVERVIEW**

6.5.1. Schedule attached.

## **7. QUALITY - Organizing documentation**

## **8. SAFETY**

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

## **9. ISSUES**

PES and LS Power are in disagreement with two change orders. Change order No 9 is for LS Power to pay for a temporary diesel generator for PES to charge our battery system and conduct lube oil flushes. Change order No 10 is for LS Power to reimburse PES for the cost of power to the trailers. This dispute has caused a 4-5 weeks delay in starting the lube oil flushes. The Substantial Completion date of Dec 15<sup>th</sup> is achievable providing oil flushes do not take more than 30 days to complete.

## **10. CHANGE MANAGEMENT**

### **10.1. Open Change Orders**

- 10.1.1. Change Order NO 8 – 125VDC System
- 10.1.2. Change Order NO 9 – Temporary Diesel Generator Power
- 10.1.3. Change Order NO 10 – Past and future power costs for trailers

### **10.2. Pending Change orders**



- PES is working on a several miscellaneous changes orders that will be issued next month.

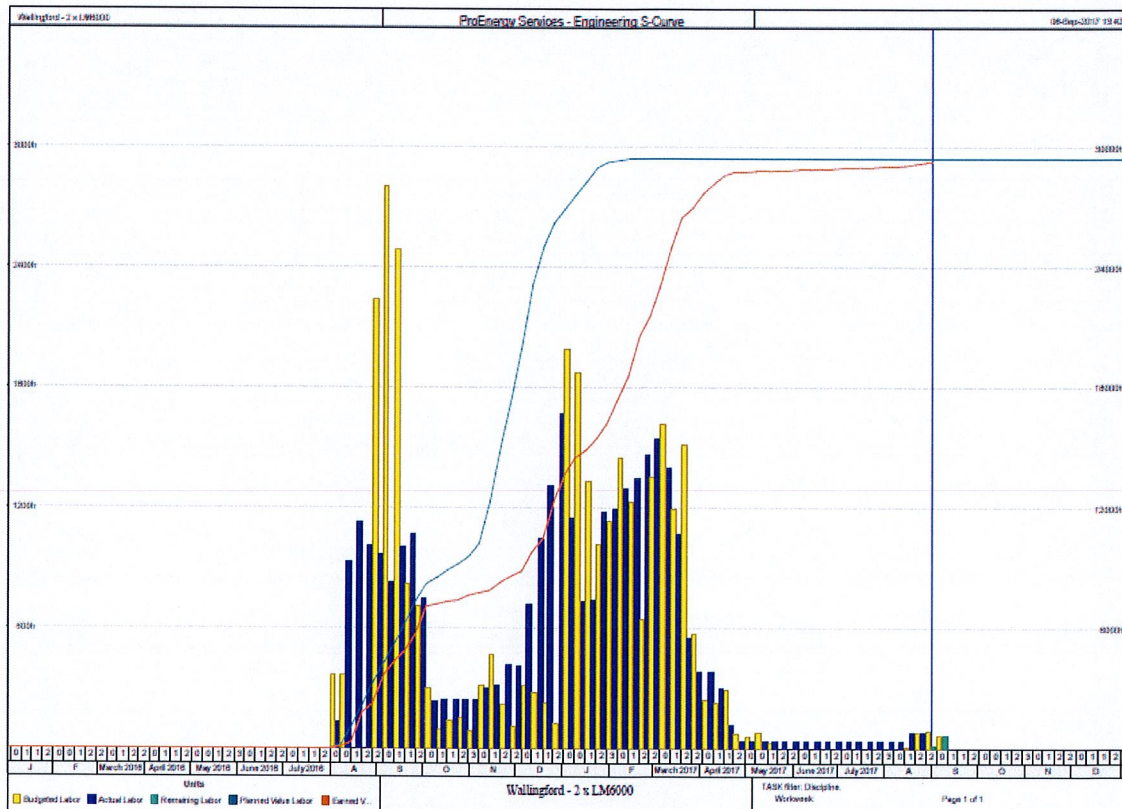
## 11. DRAWING LIST

11.1. Schedule shows key drawing dates.

## 12. ANALYTICAL

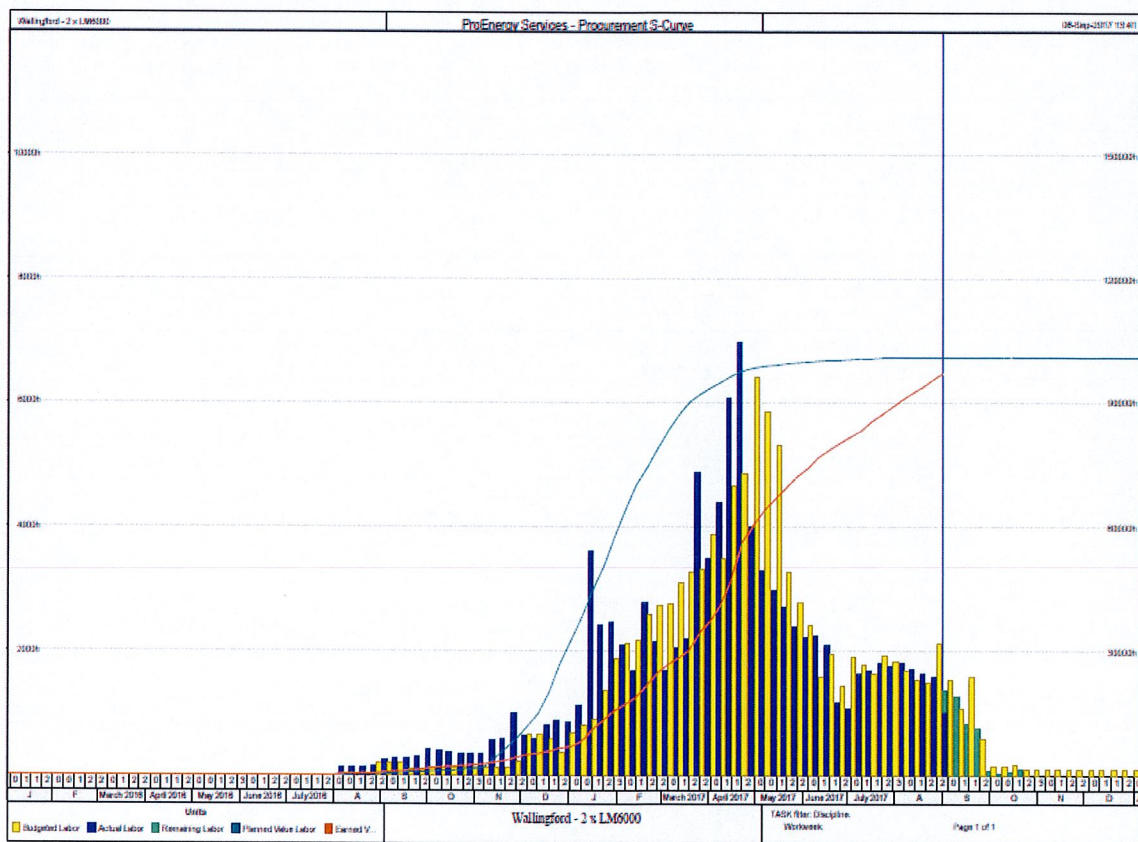
See attached progress curves.

### 12.1. Engineering.





## 12.2. Procurement.

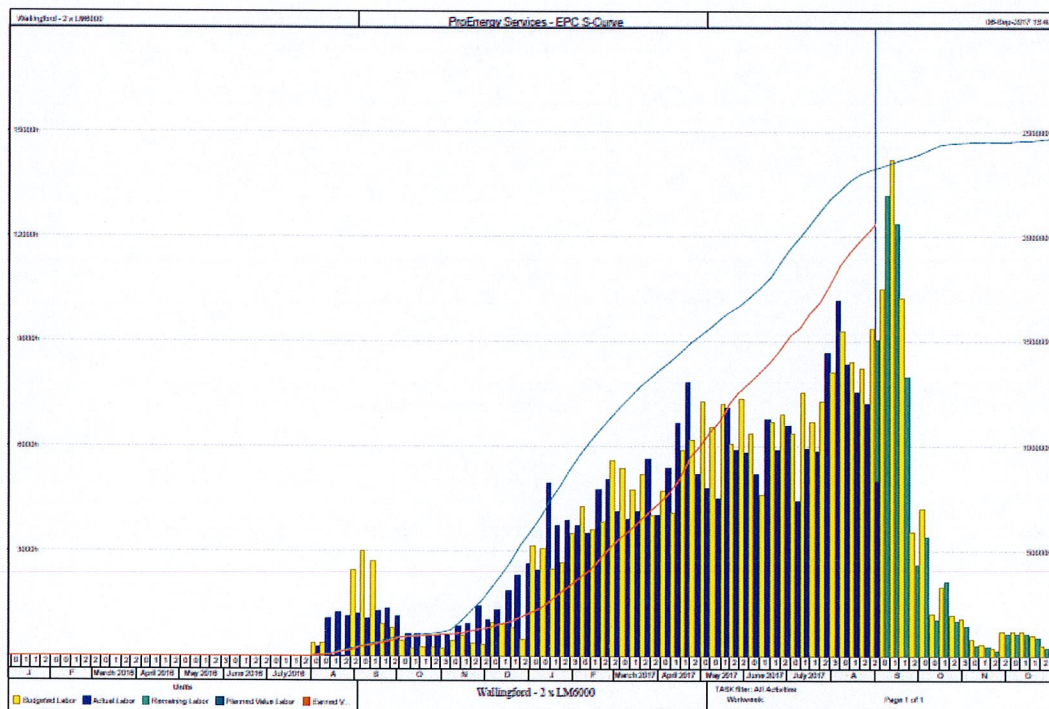








## 12.4. EPC.





## 12.5. MATERIALS INSTALLED

### CIVIL

| Foundations  | Flowable Fill | Concrete    | Total Cubic Yards |
|--|---------------|-------------|-------------------|
| 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 | 250           | 175         | 425               |
| Cable Tray & Bus foundations   | 54            | 114         | 168               |
| Sound wall & Grade beams   | 0             | 472         | 472               |
| Back fill underground piping   | 566           | 0           | 566               |
| <b>Total cubic yards installed</b>   | <b>1412</b>   | <b>1700</b> | <b>3112</b>       |

### PIPING

| Pipe            | Installed in Aug | Total installed |
|-----------------|------------------|-----------------|
| Large Bore Pipe | 0                | 788'-3"         |
| Small Bore Pipe | 302'-9"          | 5,697'-3"       |

### CABLES & TERMINATIONS

| Total Terms | From Terms Complete | To Terms Complete | % Terms Complete | % Cables pulled | Estimated Length Pulled | Actual Length Pulled |
|-------------|---------------------|-------------------|------------------|-----------------|-------------------------|----------------------|
| 6,648       | 826                 | 663               | 22%              | 66.12%          | 233,023                 | 154,083              |



**13. LABOR STATISTICS.****13.1. ProEnergy Services Safety Information for Wallingford Project**

|  | <b>2017<br/>August</b> | <b>Project Total</b> |
|--|------------------------|----------------------|
| <b>Employees</b>                                 | 86                     | 86                   |
| <b>Hours worked</b>                              | 15742.5                | 89322.5              |
| <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                    |

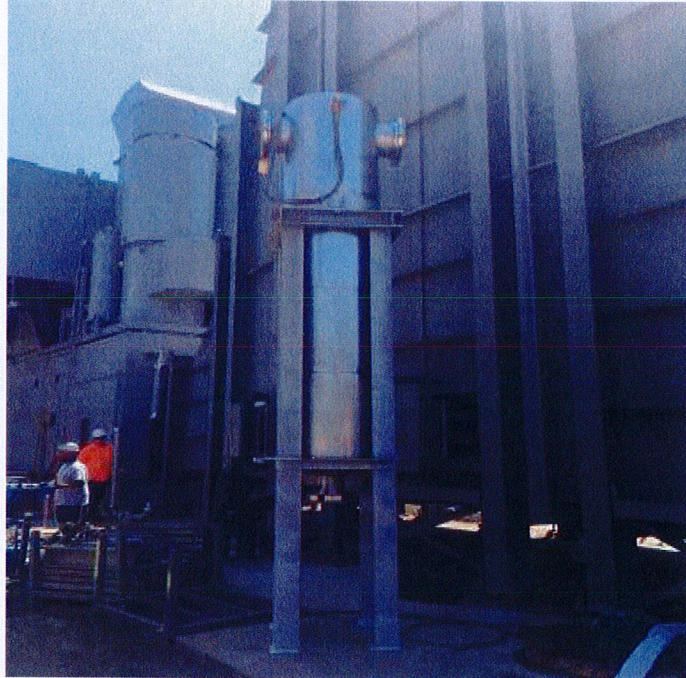
**14. PERMIT STATUS.****14.1.** ProEnergy received Connecticut Major Contractor license.

- 14.1.1.** Storm Water received October 3.
- 14.1.2.** D&M approval received on September 29.
- 14.1.3.** None required for Change Order 2 work.

**15. PHOTOS**



Inlet Heating silencer & leg support.

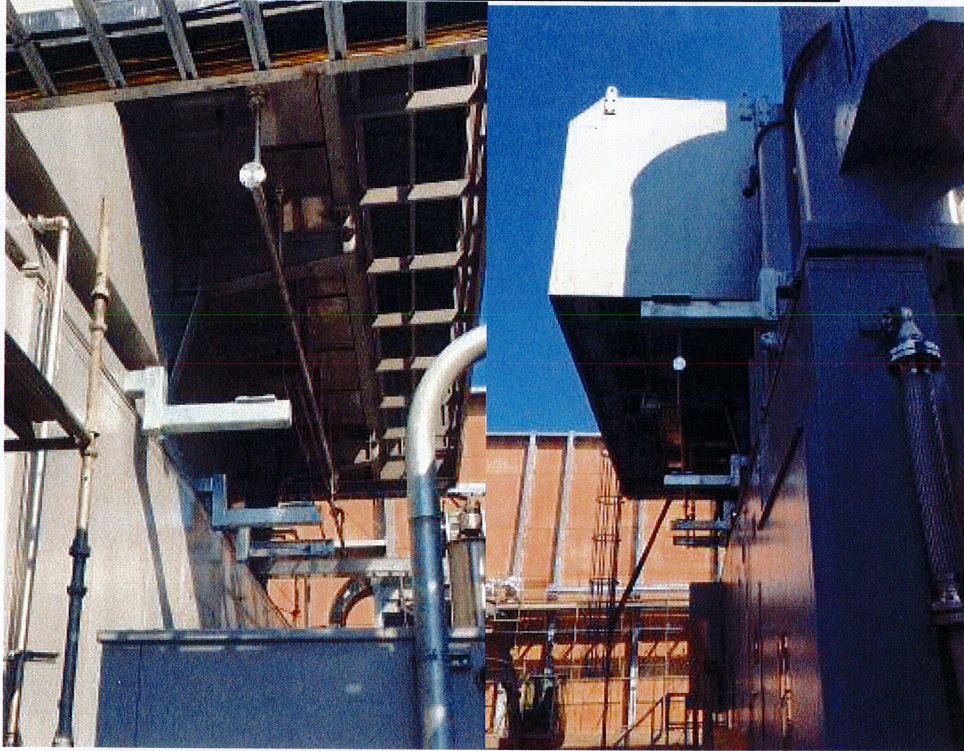


Unit 7 Inlet Heating supports

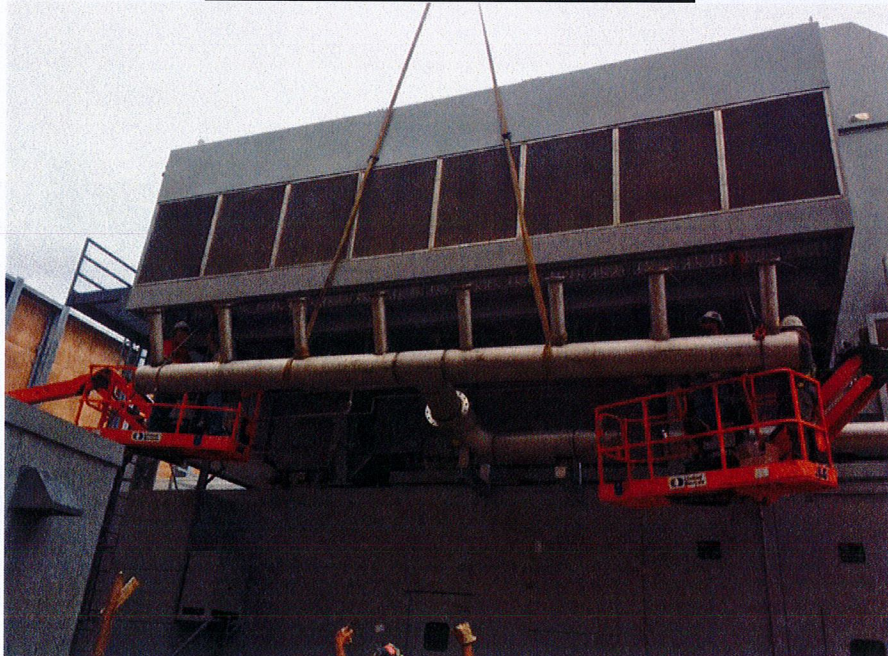




Welding/Installing inlet heating supports



Installing inlet heating piping/duct

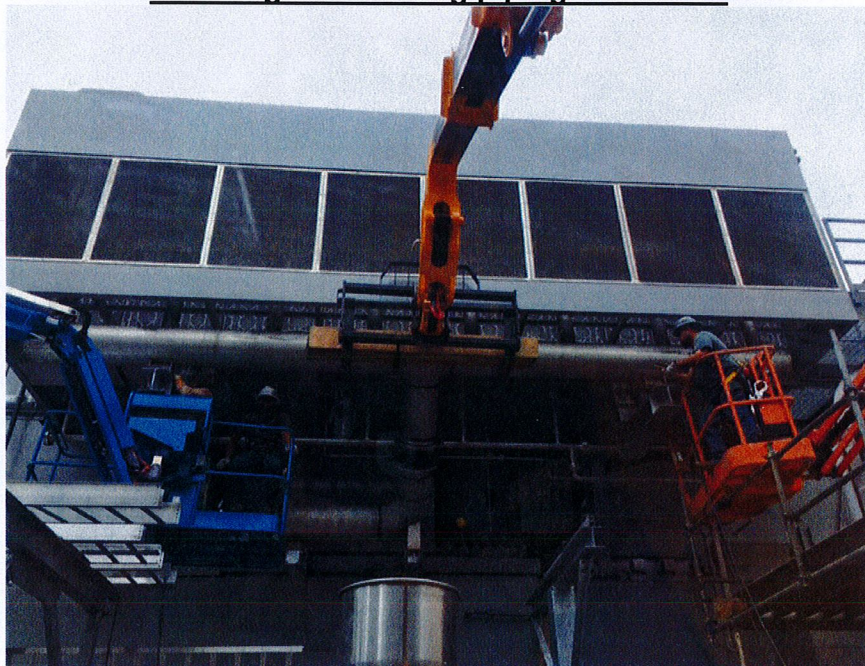




**Mechanical crew installing anti-icing lines**

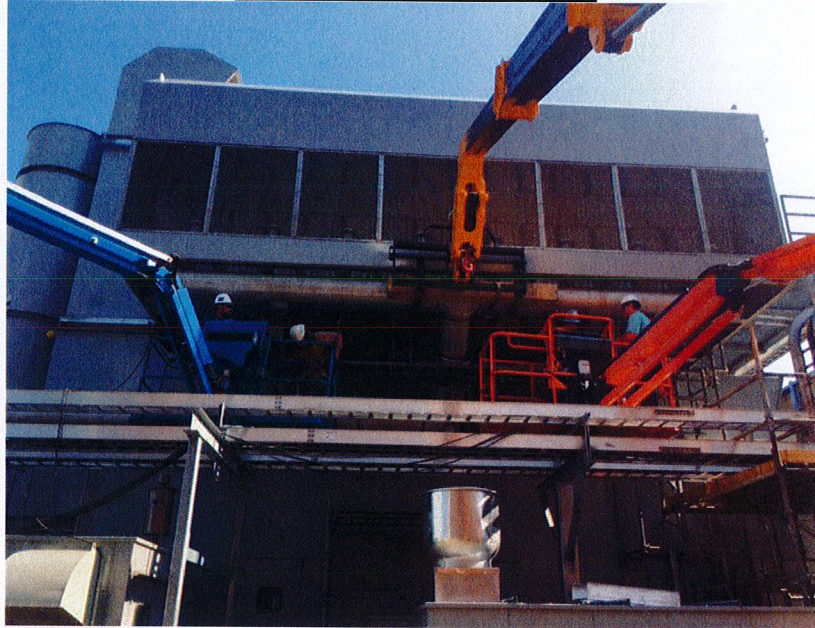


**Installing inlet heating piping/duct unit 7**

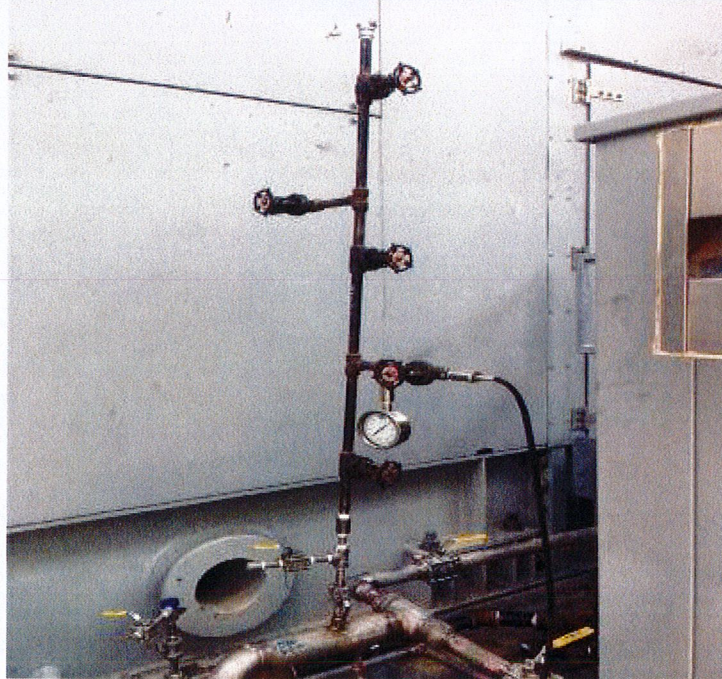




Inlet heating pipe header.



Hydro testing demineralized water Evap & sprint supply lines.

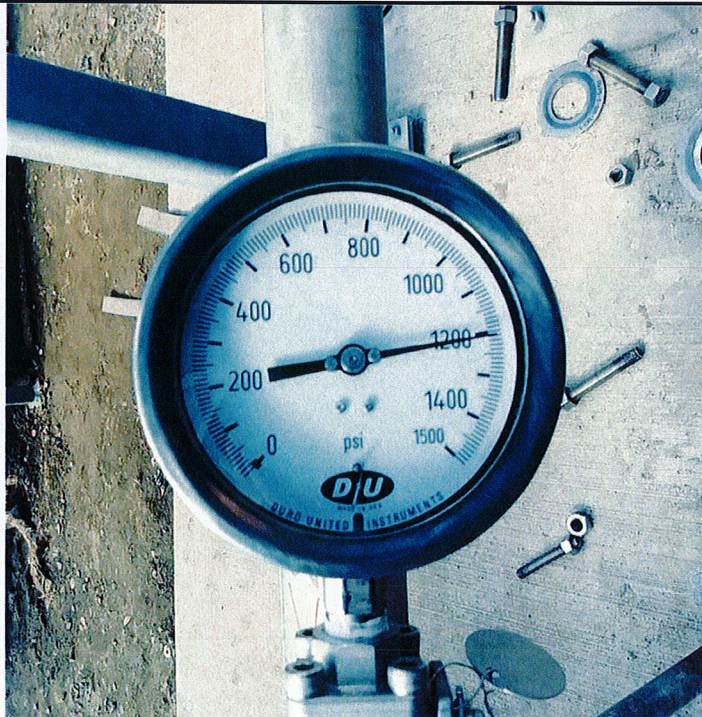




**Fuel pad on unit #6**



**Tested lines 06FG-3-010-DC1-1 & 07FG-3-010-DC1-1 at 1200 PSI**





Piping installing fuel vent lines



Working on fuel vent line on the side of unit #6





**Waste water tank erected on its foundation pad**



**Installing lines on the SCR**





**Transition for stack prepped**



**Assembled the breech for unit #2**

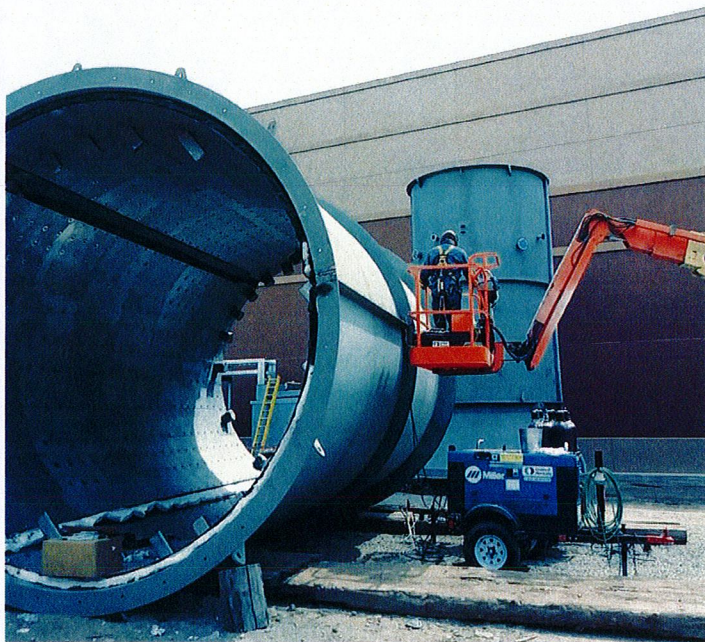




Assembled the breech for unit #2



Assembling silencers for units 6 and 7





**Assembling silencers for units 6 and 7**



**Welding on stack liners**





**Welding liners in the Breech.**



**SCR welder working on Silencer**





Breech units onsite



SCR crew member welding on the outside seam on silencers





**SCR crew working on Breech section of Stack**



**SCR installed platforms on the Transition unit on the stack**





**Electricians working in switchgear**



**Electricians working in the cable tray**





**Electricians working on cable tray supports**

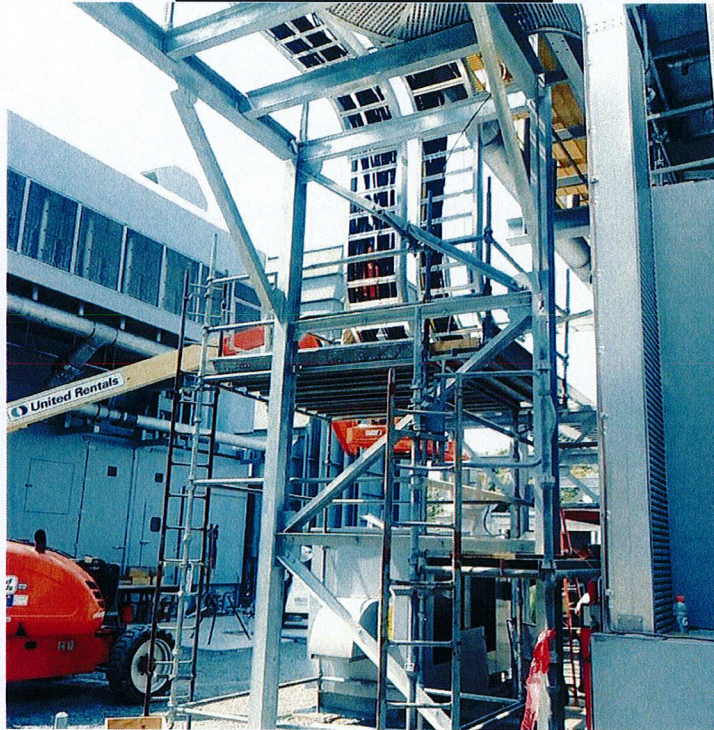


**Electrical crew working on switchgear**





**Electricians pulling cables**



**Civil compacting the North access road**





**Civil crew marking fill areas for grading**



**Placed rock in the area adjacent to the GSU**





**Placed rock in the area adjacent to the GSU**



**Grading and gravelling the North and South access roads**

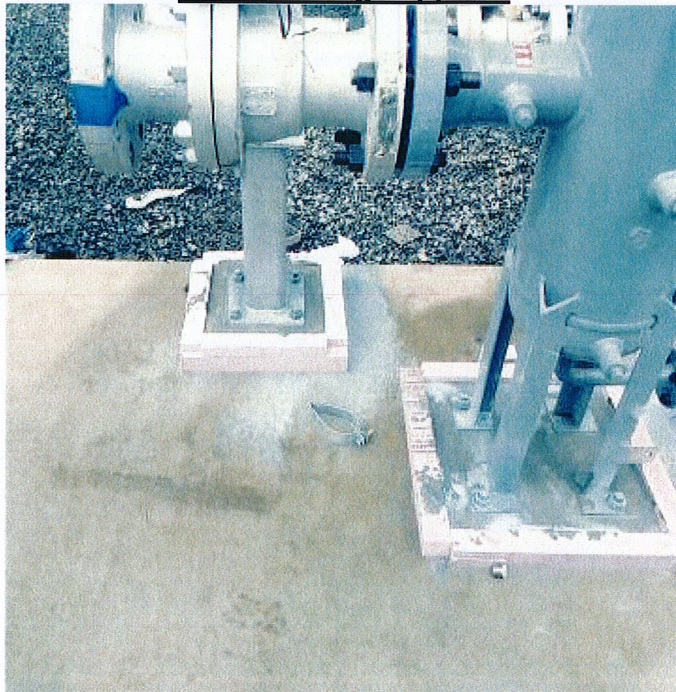




**Grading and gravelling the North and South access roads**



**Civil grouting supports**





Civil grouting supports

