Unit #4 Overhaul
Project Budget    $1.871 million
Spent (estimated) $1,719 million
Scheduled out
March 24-April 30
Actual
March 24 – May 4
Turbine Overhaul Contracted to Ethos Energy

Performance Changes:
Pre-Outage 46.2MW Turbine = 80.5%
Post Outage 48.1MW Turbine = 81.5%
Unit #4 Main Steam Pipeline

Est. Total Project Cost - $950,000
Phase 1 done during the Overhaul
Siemens T3000 Upgrade

- Upgrade allows for more flexible operation of the plant with a reduced workforce
Unit 4 Condensate Re-Route

- Condensate line was re-routed to more evenly distribute the water in the Cooling Tower Basin
- Reduces the amount of chemicals that need to be used
Unit 4 Circulating Pumps Rebuild

- NCPA GEO Team pulling the top off the pump
- NCPA GEO Team Machining the Pump Shaft before reassembly
Unit 4 Cooling Tower
Gearbox replacement
Unit 4 GRS Vacuum Pump Bypass
Allows unit to continue to generate if Vacuum Pump Trips
General Overhaul Work List

- Cleaned the Stretford
- Cleaned the cooling tower basin
- Shot the condenser tubes
- Pulled and cleaned all the Breakers 480v and up
- Pulled all of the major pumps and motors for inspection
Knockout Pot Repair / Replacement

- Project Bid Amount - $146,014
- Actual Project Cost - $132,252
- Repaired or Replaced – 40 KOP’s (~ 20% of Steam Field)
  - 25 KOP’s Cleaned Out and Repaired
  - 15 KOP’s Replaced With New Design
Overhaul Summary

- **Budget:** $1,871M  
  **Estimated expenditure:** $1,719M
- **Scheduled:** March 24-April 30  
  **Actual:** March 24-May 4
- **Completed work:**
  - Spare Turbine was installed, Generator/Field inspected
  - Siemens T3K upgraded
  - Unit 4 Main Steam Piping project, Phase 1 completed
  - Condensate Piping to Tower re-routed
  - GRS Vacuum Pump re-route completed
  - Gland Steam System re-routed
  - New Cooling Tower Gear Boxes installed for worn out ones
  - 20% Steamfield Knockout pots cleaned and repaired as necessary
  - Stretford, Cooling Tower Basin cleaned, Main Condenser Tubes shot
  - All major pumps/motors pulled, inspected and repaired as necessary
Questions?