Trimble County Generating Station

Cold Weather

OPERATING PROCEDURE

Revision History

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1.0 PURPOSE

The Cold Weather procedure provides information for winter operation and setup in all areas of the plant. The following information when executed will maintain above freezing temperatures plant wide which will protect equipment. Maintain the air heater, air inlet temperature above 60 degrees and plant vacuum above .25. (These values are not absolute. Weather and equipment conditions may require changes.)

COLD WEATHER PRE–CHECKS

1. Inventory all #2 fuel oil supplies and ensure adequate supply.
2. Test run all portable heaters and ensure they are in good working order. Generate work request and ensure repairs are made as needed.
3. Inspect cooling towers for fill damage and valve operations.
4. Inspect entry doors on all structures and ensure they will close properly.
5. Check thermometer locations and ensure all thermometers are operable and in place.
6. Place Service building heating system in service using both Unit 1 steam supply and the Auxiliary Boiler. If there are any problems address through work request and ensure corrections are made.
7. Check Glycol in Cooling systems and LCI cooling systems on all units at Combustion Turbine site.
8. Ensure all evaporative cooling systems including sumps are drained and secured on all units at Combustion Turbine site.
9. Place mobile fuel oil tank in bed of field truck and fill.
10. Stage mobile fuel drums in unit 2 Ground floor area at the Northwest rollup door, place fuel drum on unit 2 SDRS landing 3 and ensure all components are in good condition.
11. Verify all louvers are closed
12. Verify all bird deterrent is in place and working.

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2.0 UNIT 1 COLD WEATHER OPERATING PROCEDURES

This section contains the operating procedures for the components associated with the unit 1 cold weather operating procedures.

2.1 UNIT 1 COLD WEATHER SETUP BY LANDING

Deaerator Room

_____ a. Remove Deaerator roof exhausters from service

_____ b. Close the access door to the deaerator room roof.

_____ c. Close the access doors to the deaerator room (North and South).

Boiler Room Roof

_____ a. Verify all boiler room roof exhausters are out of service and their suction louvers are closed.

Landing 21

_____ a. Verify that A1, A2, B1, B2 Plant Air rolling Steel Doors are 100% open. Remove the power from these door motor drives.

_____ b. After the four Outside Air Rolling Steel doors are 100% open, return the power to the four Plant Air Rolling Steel doors.

_____ c. Use the Plant Rolling Steel doors to control the Air heater inlet temperature and Plant vacuum. Closing the Door to 25% will reduce Plant vacuum while lowering Air heater inlet temperature.

Landing 19

_____ a. Close the two outside doors on the east wall.

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Landing 17

_____ a. Close bunker room doors.

Landing 15

_____ a. Close door to SCR West wall North door.

Landing 14

_____ a. Close SCR doors, West wall South door.

Landing 13

_____ a. Open all four rolling steel doors to the A and B Boiler Vent Fan Rooms, (2 doors per room).

_____ b. Close SCR doors on South wall.

_____ c. Close SCR doors West wall North and South doors.

Landing 11

_____ a. Close SCR doors on South wall.

_____b. Place all removable louver panels over the east wall. (Fixed louver panels in the A & B Boiler Vent Fan Rooms, secure with 3/8 nuts. This requires 7/16 wrench.)

_____c. Place A and B Boiler Vent Fans in service with each fan's suction vanes open 50%.

_____d. Close all of the louvers on the east wall behind the coal silos

_____e Close the two outside doors on the east wall behind the silos.

_____f. Close all of the access doors to the Boiler Vent Fan Rooms.

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_____g Remove all turbine room roof exhausters from service, and verify that all exhauster suction louvers are closed.

_____h. Close SCR doors West wall North.

_____i. 1A / 1B Boiler room heating pumps isolated and drained.

_____j. Remove Turbine Room Vent fans from service

Landing 6

_____ a. Close the outside door on the South wall.

_____ b. Close SCR doors on South wall.

_____ c. Close SCR doors on West wall, North and South doors.

_____ d. All louvers need to be closed

Landing 5

_____ a. Close both doors on the west wall.

_____ b. Close all Louvers on the west wall.

_____ c. Close all Louvers on east wall

_____ d. Verify that the Turbine Room Vent Fan louvers on the east wall are closed. Close the isolation valve on the instrument air line to the louvers and depressurize the instrument air line downstream of the instrument air isolation valve.

_____ e. Place the Turbine Room Vent Fan in service.

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_____ f. Set all thermostats on space heaters located in the south end of the turbine room at 40°F.

NOTE: *Open more louvers if needed but Do not open louvers 4, 5, 6, 34 and 35. They are located near standpipes.*

Mezzanine

_____ a. Close the two outside doors on the west wall.

_____ b. Close the five doors on the south wall.

_____ c. Close the two outside doors on the east wall.

_____ d. Enclose south end of Secondary Chain Conveyor

_____ e. Place plant heating system in service maintain outlet temperature between 220F-240F

Landing 2 (Secondary Drag Conveyor)

_____ a. Verify heater is running and maintaining temperature in the outdoor section of the drag conveyor

_____ b. Monitor temperature at the Secondary Conveyor fire system on the south wall.

_____ c. Ensure all drag conveyor and secondary drag conveyor lids are in place verify heaters are working.

Ground Floor

_____ a. Close the Service Building Rolling Steel Door East.

_____ b. Close the Service Building Rolling Steel Door South.

_____ c. Close the two outside doors on the south wall (one is located in the truck aisle and the other is located in the station air compressor room.) Also close entrance door to the station air compressor room.

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_____ d. Close both outside doors on the west wall.

_____ e. Close the outside doors on the east wall.

_____ f. Verify that the Forced Draft Fan Rooms A and B Rolling steel doors are closed.

_____ g. Verify that the access doors to the A and B Forced Draft Fan Rooms are closed.

_____ h. SDRS area, Close rolling steel doors and entry doors North, South, West wall (3) doors and Oxidation air room.

_____ i. 1A / 1B PJFF Close North and South rollup doors and East and West entry doors.

_____ j. Verify all service building doors are closed.

_____ k. Place a kerosene heater on condenser vacuum pump (build hut as needed)

_____ l. Place a kerosene heater on the A & B FD fan lube oil skids (build huts as needed)

SDRS

_____ a. Remove all wall and roof exhausters from service

Unit Out of Service

_____ a. Close combustion air doors

_____ b. Place heaters and enclosures around Stator Cooling, EHC, Closed Cooling/Aux Cooling header

_____ c. Drain demister wash piping

_____ d. Drain seal water piping in SDRS

_____ e. Enclose FD fan lube oil skids and place heater on

_____ f. Place a heater on the Unit 1 Jockey fire pump

_____ g. Place plastic over bottom ash crusher to prevent a draft being pulled in

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2.2 OUTLYING COMMON STATION AREAS

Fuel Oil Building

_____ a. Close Rolling Steel Door East.

_____ b. Close entry Doors North and West.

Reactant Preparation Building

_____ a. Close Rolling Steel Door.

_____ b. Close entry Doors North, East and South.

_____ c. Close louvers.

Limestone Active Pile Enclosure (LAPE)

_____ a. Close Rolling Steel Doors (2) North and (1) South.

_____ b. Close entry doors.

Auxiliary Boiler Building

_____ a. Close Rolling Steel Door.

_____ b. Close entry doors East and West.

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FGD Transfer Pump House

_____ a. Close the Rolling Steel Doors

_____ b. Verify heat trace is working

Back Up Generator

_____ a. Close the Rolling Steel Doors North and South sides.

Diesel Fire Pump house

_____ a. Close entry Doors East and West.

_____ b. Place a kerosene heater near the jockey pump

Screenhouse

_____ a. Close Rolling Steel Door.

_____ b. Close entry Door and intake bay access doors.

_____ c. Turn off roof exhauster.

"C" Warehouse

_____ c. Close the Rolling Steel Doors North and South sides.

_____ d. Close entry Doors North, South and East sides.

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2.3 COOLING TOWER WINTER OPERATION OFF LINE

The following steps should be performed:

1) When the cooling tower basin temperature (condenser inlet) reaches 50 degrees.
2) If two pumps are in service remove one.
3) Open the cooling tower bypass sluice gate.
4) Ensure all cooling tower fans have been removed from service.
5) This operation will stop all flow up to the cooling tower fill, to prevent any icing damage to the cooling tower fill.

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2.4 UNIT 1 / COMMON AREA HEAT TRACE CHECKLIST

1) Although PM# 55838 addresses initial problems with the following heat traces these items should be checked initially during cold weather setup and periodically during scheduled rounds.
2) Check for alarms on DCS (Graphic 1020). Note any alarms prior to making rounds.
3) Check each panel for tripped breakers and alarms. Perform visual for missing insulation and address any issues.
4) Reset any tripped breakers. If breaker will not reset address promptly.

[redacted]

3.0 UNIT 2 COLD WEATHER OPERATING PROCEDURES

3.1 UNIT 2 COLD WEATHER SETUP BY LANDING

Boiler Room Roof

_____ a. There are (17) Boiler Building Exhaust Fans, start by removing 5 of these from service and check building vacuum. You may be able to remove more.

Note: Be careful not to leave too many in service as this will pull much of the hot air from Unit 1 Boiler building.

Landing 16

_____ a. Close East doors.

Landing 14

_____ a. Close East door.

Landing 13

_____ a. Close West doors.

_____ b. Turn off 4 of the 8 roof exhausters, Keep roof exhauster 18 above the NH3 skid in service.

Landing 12

_____ a. There are 3 roof exhausters above Deaerator heater, turn all off except the center exhauster

Landing 11

_____ a. 6 louvers (2) electrically operated and 4 Manually operated. Close every other one of the manual louvers leaving 2 open.

Landing 6

_____ a. Close East door.

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Landing 5

_____ a. Close West door

_____ b. There are 8 louvers on North wall which are operated from 2nd landing. Every other one should be open for a total of 5.

Landing 4

_____ a. Turn off Turbine Building Exhaust Fans.

Landing 2

_____ a. 8 louvers on North wall open every other one.

_____ b. Close all 4 Louvers by 2A FD Fan duct North wall, West end.

_____ c. On the West wall North end there are 8 louvers on top which are electrically operated and 8 Louvers on bottom which are manually operated. Check closed louvers on top and Manually close all louvers on bottom.

_____ d. West Wall center there are 4 Louvers. Manually close all 4 of them.

_____ e. West wall South end there are 15 Louvers 7 on top and 8 on bottom. Close all 15 Louvers.

_____ f. On the East wall there are 8 louvers on bottom which are electrically operated and 8 Louvers on top which are manually operated. Check closed louvers on bottom and Manually Open all louvers on top

_____ g. Ensure Boiler Ventilation Blowers for burner decks remain in service.

Ground Floor

_____ a. Close the (1) North, (1) East and (2) West rolling steel doors.

_____ b. Close entry doors to all 4 Stair towers and ensure Heaters in each tower are working.

_____ c. Close Submerged Chain Conveyor door North.

_____ d. Close entry doors (3) North, (2) West and (2) South.

_____ e. TC2 Reserve Aux Trans. (RAT) Fire Protection Building. Ensure Heater is working and vents are closed.

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_____ f. TC2 Main Aux Trans. (MAT) Fire Protection Building. Ensure Heater is working, and vents are closed.

Dry Electrostatic Precipitator (DESP)

_____ a. Close Rolling steel and entry door on East wall on the north and south buildings (1 of each)

Pulse Jet Fabric Filter (PJFF)

_____ a. Close Rolling steel and entry door on East wall on the north and south buildings (1 on each)

_____ b. Verify heaters in the fire protection buildings are working and maintaining temperature

Fluidized Gas Desulphurization (FGD)

_____ a. Close Rolling steel and entry doors on East and West walls.

_____ b. Close all FGD Louvers and turn thermostats up on exhaust fans.

Oxidation Air Room

_____ a. Close Rolling steel and entry doors on South wall.

_____ b. Close all but 3 louvers, leave 3 louvers Open.

SUPPLY AND VENT FANS TO BE CARDED AND ISOLATED

Power down and place Hold cards on the following Vent/Supply fans. This is done in preparation to allow the intakes /exhausts to be covered to prevent cold air from entering the powerhouse.

VENT AND SUPPLY FANS

[redacted]

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[redacted]

STAIRWELL VENT FANS

[redacted]

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[redacted]

4.0 COMBUSTION TURBINE SITE COLD WEATHER OPERATING PROCEDURES

4.1 COMBUSTION TURBINE SITE COLD WEATHER PREPARATION (COMMON EQUIPMENT)

Inlet Filter House and Evaporative Cooler

_____ c. Empty evaporative cooling water tanks during week of October 1st of every year

_____ d. Drain evaporative cooling water sumps in the filter house

_____ e. Drain evaporative cooling water headers

Water Wash Skid

_____ a. TC5 & 6 Skid – Verify Tank and room heaters are working, If not working Drain main water tank (located south end CT6)

_____ b. TC5 & 6 Skid – Verify water wash compartment heater 23WS-1 is working

_____ c. TC7, 8, 9, & 10 Skid – Verify Tank and room heaters are working, If not working Drain main water tank (located south end CT7)

_____ d. TC7, 8, 9, & 10 Skid – Verify water wash compartment heater 23WS-1 is working

4.2 CT'S 5 THRU 10

Generator Step–Up Transformers

_____ a. TC5 GSU Transformer fire protection valve compartment, verify space heater is operating

_____ b. TC6 GSU Transformer fire protection valve compartment, verify space heater is operating

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_____ c. TC7 GSU Transformer fire protection valve compartment, verify space heater is operating

_____ d. TC8 GSU Transformer fire protection valve compartment, verify space heater is operating

_____ e. TC9 GSU Transformer fire protection valve compartment, verify space heater is operating

_____ f. TC10 GSU Transformer fire protection valve compartment, verify space heater is operating

Generator Collector Compartment

_____ a. TC5 Collector Compartment space heater 23HG-1, verify if operating properly

_____ b. TC6 Collector Compartment space heater 23HG-1, verify if operating properly

_____ c. TC7 Collector Generator Compartment space heater 23HG-2, verify if operating properly

_____ d. TC8 Collector Generator Compartment space heater 23HG-1A, 23HG-1B and 23HG-2 verify if operating properly

_____ e. TC9 Collector Generator Compartment space heater 23HG-1A, 23HG-1B and 23HG-2 verify if operating properly

_____ f. TC10 Collector Generator Compartment space heater 23HG-1A, 23HG-1B and 23HG-2 verify if operating properly

Gas Turbine Compartment

_____ a. TC5 – Verify turbine compartment heater 23HT-1A and 1B are working (big heaters)

_____ b. TC5 – Verify turbine compartment heater 23HT-3A and 3B are working (small heaters)

_____ c. TC6 – Verify turbine compartment heater 23HT-1A and 1B are working (big heaters)

_____ d. TC6 – Verify turbine compartment heater 23HT-3A and 3B are working (small heaters)

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_____ e. TC7 – Verify turbine compartment heater 23HT-1A and 1B are working (big heaters)

_____ f. TC7 – Verify turbine compartment heater 23HT-3A and 3B are working (small heaters)

_____ g. TC8 – Verify turbine compartment heater 23HT-1A and 1B are working (big heaters)

_____ h. TC8 – Verify turbine compartment heater 23HT-3A and 3B are working (small heaters)

_____ i. TC9 – Verify turbine compartment heater 23HT-1A and 1B are working (big heaters)

_____ j. TC9 – Verify turbine compartment heater 23HT-3A and 3B are working (small heaters)

_____ k. TC10 – Verify turbine compartment heater 23HT-1A and 1B are working (big heaters)

_____ l. TC10 – Verify turbine compartment heater 23HT-3A and 3B are working (small heaters)

Accessory Module, Lube Oil Area

_____ a. TC5 – Verify accessory compartment Lube Oil heater 23HL-1 is working (big heaters)

_____ b. TC5 – Verify accessory compartment Lube Oil heater 23HL-3 is working (small heaters)

_____ c. TC6 – Verify accessory compartment Lube Oil heater 23HL-1A and 1B are working (big heaters)

_____ d. TC6 – Verify accessory compartment Lube Oil heater 23HL-3A and 3B are working (small heaters)

_____ e. TC7 – Verify accessory compartment Lube Oil heater 23HL-1A and 1B are working (big heaters)

_____ f. TC7 – Verify accessory compartment Lube Oil heater 23HL-3A and 3B are working (small heaters)

_____ g. TC8 – Verify accessory compartment Lube Oil heater 23HL-1A and 1B are working (big heaters)

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_____ h. TC8 – Verify accessory compartment Lube Oil heater 23HL-3A and 3B are working (small heaters)

_____ i. TC9 – Verify accessory compartment Lube Oil heater 23HL-1A and 1B are working (big heaters)

_____ j. TC9 – Verify accessory compartment Lube Oil heater 23HL-3A and 3B are working (small heaters)

_____ k. TC10 – Verify accessory compartment Lube Oil heater 23HL-1A and 1B are working (big heaters)

_____ l. TC10 – Verify accessory compartment Lube Oil heater 23HL-3A and 3B are working (small heaters)

Accessory Module, Gas Valve Compartment

_____ a. TC5 – Verify Gas Valve compartment heater 23VS-1 is working (big heaters)

_____ b. TC5 – Verify Gas Valve compartment Humid. heater 23VS-3 is working (small heaters)

_____ c. TC6 – Verify Gas Valve compartment heater 23VS-1 is working (big heaters)

_____ d. TC6 – Verify Gas Valve compartment Humid. heater 23VS-3 is working (small heaters)

_____ e. TC7 – Verify Gas Valve compartment heater 23VS-1 is working (big heaters)

_____ f. TC7 – Verify Gas Valve compartment Humid. heater 23VS-3 is working (small heaters)

_____ g. TC8 – Verify Gas Valve compartment heater 23VS-1 is working (big heaters)

_____ h. TC8 – Verify Gas Valve compartment Humid. heater 23VS-3 is working (small heaters)

_____ i. TC9 – Verify Gas Valve compartment heater 23VS-1 is working (big heaters)

_____ j. TC9 – Verify Gas Valve compartment Humid. heater 23VS-3 is working (small heaters)

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_____ k. TC10 – Verify Gas Valve compartment heater 23VS-1 is working (big heaters)

_____ l. TC10 – Verify Gas Valve compartment Humid. heater 23VS-3 is working (small heaters)

5.0 MATERIAL HANDLING COLD WEATHER OPERATING PROCEDURES

5.1 MATERIAL HANDLING SITE COLD WEATHER SETUP BY AREA

5.2 DOOR INSPECTIONS (COAL YARD)

Coal Barge Unloader Area

_____ e. Dust Suppression.

_____ f. Suppression Breaker Room.

_____ g. Operators Cab.

_____ h. CBU Breaker Room 2 doors.

B to C Transfer

Sample House

_____ a. North ground floor.

_____ b. South Ground floor.

_____ c. Breaker room and Fire Protection room.

_____ d. East ground floor.

_____ e. “D” floor louvers.

_____ f. Top floor East.

_____ g. Top floor West.

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_____ h. Top floor louvers.

D to E Transfer

Stacker Reclaimer

_____ a. Operators cab.

_____ b. Electrical room (2 doors).

Crusher House

_____ a. East doors.

_____ b. West doors.

_____ c. North door.

_____ d. Wash down pump room (South and West doors and Heater).

_____ e. Take-Up area doors “E” & “R”.

_____ f. Top floor doors West “E” & “R”.

_____ g. Check all louvers Closed or covered.

_____ h. Crusher House breaker room all doors and sufficient heat.

“F” Gallery

_____ a. East doors.

_____ b. West doors.

_____ c. Fire Wall doors (all 3 sections).

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"F" to "G" Transfer

_____ a. "F1 & "F2 Take-Up area door.

_____ b. 14th floor (all doors).

_____ c. Doors at Tripper Room.

_____ d. All louvers.

Tripper Room

_____ a. East door to Unit 2.

_____ b. West doors to U1 and U2.

"R" Tunnel

_____ a. South door.

_____ b. East conveyor door.

Blending Tunnel

_____ a. East doors (2).

_____ b. Tunnel escape door (West).

Fuel Blending Breaker Room

_____ a. South doors (3).

_____ b. North door.

5.3 DOOR INSPECTIONS (LIMESTONE)

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Limestone Unloader

_____ a. Electrical room North and South.

_____ b. Winch room South door.

_____ c. Winch room Crane doors.

_____ d. Top level sheave access door.

“A” to “B” Limestone Transfer doors

“B” Limestone Conveyor

_____ a. Limestone Active Pile Entrainment (LAPE) building North and South doors.

“C” Limestone Conveyor

_____ a. Tunnel Escape door.

_____ b. “C” Limestone Conveyor at (LAPE) Building.

_____ c. Overhead doors at (LAPE) Building (3).

_____ d. “C” Conveyor top of belt at Reactant Preparation Building.

5.4 SCRAPER INSPECTION (PRIMARY AND SECONDARY)

Coal Conveyors and Feeders

_____ a. “A” Conveyor.

_____ b. “B” Conveyor.

_____ c. “C” Conveyor.

_____ d. “D” Conveyor.

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_____ e. “D” Feeders 1 thru 4.

_____ f. “E” Conveyor.

_____ g. “S” Conveyor.

_____ h. “R” Conveyor.

_____ i. “R” Feeder.

_____ j. “F1” & “F2” Feeders.

_____ k. “F1” & “F2” Conveyors.

_____ l. “G1” & “G2” Conveyors/Trippers.

_____ m. A thru E Blending feeders.

_____ n. “E2” Conveyor.

_____ o. “E3” Conveyor.

Limestone Conveyors and Feeders

_____ a. “A” Feeder.

_____ b. “A” Conveyor.

_____ c. “B” Feeder.

_____ d. “B” Conveyor.

_____ e. “B” Tripper.

_____ f. “C” Feeder.

_____ g. “C” Conveyor.

5.5 HEAT IN PUMP ROOMS AND CABINETS

Coal Yard System Heaters

_____ a. Coal Barge Unloader (CBU) Cab.

_____ b. (CBU) Dust suppression pump room and breaker room.

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_____ c. (CBU) NALCO building.

_____ d. (CDES) building fire protection room.

_____ e. (CDES) breaker room and control room.

_____ f. Stacker / Reclaimer Cab.

_____ g. Sample House Wash-Down pump Fire Protection room.

_____ h. Sample House breaker room.

_____ i. Sample House Wet Dust Extractor Cabinet.

_____ j. Crusher House Wash-down Pump/Fire Protection Room.

_____ k. Crusher House Breaker Room.

_____ l. Crusher House Wet Dust Extractor Cabinet.

_____ m. Crusher House Dust Suppression Pump Building.

_____ n. Fuel Blending Breaker Room.

_____ o. Fuel Blending Service Water Booster Room.

_____ p. Fuel Blending Fire Protection Room.

_____ q. Fuel Blending Tunnel Wet Dust Extractor Cabinet's "A" & "B".

Limestone System Heaters

_____ a. Limestone Barge Unloader (LBU) Dust Suppression Pump Building.

_____ b. (LBU) Cab.

_____ c. (LBU) Electrical Room.

_____ d. Limestone Active Pile Entrainment (LAPE) building Breaker Room.

5.6 MATERIAL HANDLING HEAT TRACE CHECKLIST

[redacted]

[redacted]

5.7 MATERIAL HANDLING MISCELLANEOUS ITEMS

_____ r. Confirm I&E has Completed Zero Speed Function Check PM's.

_____ s. Confirm I&E has Completed Gear Box Heater PM's.

_____ t. Test Vibrators on L/S Unloader Hopper.

_____ u. Move Portable Eyewash/Shower to Tractor Garage (Leave Full of Water).

_____ v. Confirm With Lube Department Oil Viscosity in Gear Boxes.

6.0 LABORATORY COLD WEATHER OPERATING PROCEDURES

6.1 LABORATORY SITE COLD WEATHER SETUP

1) Check area heaters is U1 Cooling Tower chemical feed buildings.
2) Check area heaters is U2 Cooling Tower chemical feed buildings.
3) Check area heaters in Water Treatment.
4) Have Heat Tracing checked at Condensate Polisher and NDCT & MDCT chemical feed buildings.

Business Use
LGE-KU003_0001501

7.0 CCRT/PWT COLD WEATHER OPERATING PROCEDURES

7.1 CCRT/PWT SITE COLD WEATHER SETUP

CCRT Gypsum Storage Enclosure

_____ a. Close Rolling Steel doors on East and South walls and all entry doors.

_____ b. Turn thermostats up on exhaust fans. May need to run some exhaust fans to keep moisture down in GSE during gypsum production.

_____c. Check closed all fan louvers, report any that are not working.

Transfer Tower 2

_____ a. Close all entry doors.

_____ b. Turn thermostats up on exhaust fans. May need to run some exhaust fans to keep moisture down in GSE during gypsum production.

_____c. Check closed all fan louvers, report any that are not working.

Transfer Tower 3

_____ a. Close all entry doors.

_____ b. Turn thermostats up on exhaust fans.

_____c. Check closed all fan louvers, report any that are not working.

Transfer Tower 4

_____ a. Close all entry doors.

_____ b. Turn thermostats up on exhaust fans.

_____c. Check closed all fan louvers, report any that are not working.

CCRT Fly Ash Silos

_____ a. Close double doors and entry doors on Ash Conditioner landings

_____ b. Close curtains around 0A1, 0A2, 0B1, 0B2 CCRT Fly Ash Shuttle Conveyors

_____c. Test space heaters on Ash Conditioner landings and Shuttle Conveyor landings. Report any that are not working.

Business Use
LGE-KU003_0001502

_____ d. Turn thermostats up on exhaust fans for the Ash Conditioner landings and Shuttle Conveyor landings

_____ e. Check closed all fan louvers

_____ f. Ensure exhaust fans are not running when space heaters are running.

_____ g. Check CCRT FAS Ash Conditioner Water Header Drain Valves (0-FA-CV-2410A1, A2, B1, B2) are open when not conditioning ash.

_____ h. Check heat trace panels ensuring; in auto, lights work and there are no faults

Report any problems found

_____ i. Check heat trace beacons (when lights are on the circuit is energized)

CCRT Maintenance Building

_____ a. Close Rolling Steel doors and entry doors.

_____ b. Test space heaters, report any that are not working.

_____ c. Turn thermostats up on exhaust fans

_____ d. Check closed all fan louvers, report any that are not working.

_____ e. Ensure exhaust fans are not running when space heaters are running.

CCRT Gypsum Dewatering Building

_____ a. Close Rolling Steel doors and entry doors.

_____ b. Test space heaters, report any that are not working.

_____ c. Turn thermostats up on exhaust fans

_____ d. Check closed all fan louvers, report any that are not working.

_____ e. Ensure exhaust fans are not running when space heaters are running.

_____ f. Check heat trace panels ensuring; in auto, lights work and there are no faults Report any problems found

_____ g. Check heat trace beacons (when lights are on the circuit is energized)

Transfer Tower 5 / CCRT Landfill Electrical and Conference Enclosure / CCRT Landfill Control Room

_____ a. Test space heaters, report any that are not working.

_____ b. Close Rolling Steel doors and entry doors._

Business Use
LGE-KU003_0001503

____ c. Turn thermostats up on exhaust fans. May need to run some exhaust fans on product runs.

_____d. Check closed all fan louvers, report any that are not working.

_____e. Check heat trace panels ensuring; in auto, lights work and there are no faults. Report any problems found

_____ f. Check heat trace beacons (when lights are on the circuit is energized)

Transfer Tower 6

_____ a. Close Rolling Steel doors and entry doors.

_____ b. Turn thermostats up on exhaust fans.

_____c. Check closed all fan louvers, report any that are not working.

Process Water Treatment

_____a. Close Rolling Steel doors and entry doors.

_____b. Test space heaters, report any that are not working.

_____c. Turn thermostats up on exhaust fans

_____d. Ensure PWT makeup air units are set for winter operations and thermostats are set to 60 degrees

_____d. Check closed all fan louvers, report any that are not working.

_____e. Ensure exhaust fans are not running when space heaters are running.

_____f. Check heat trace panels ensuring; in auto, lights work and there are no faults. Report any problems found

_____g. Check heat trace beacons (when lights are on the circuit is energized)

_____f. Monitor standby reaction tanks temperatures when the temperature drops below 32 degrees.

_____1. Flow enough water through train to increase temperature

_____2. Drain connecting piping between reaction tanks. This option is for extended train outages

Business Use
LGE-KU003_0001504

8.0 PROCEDURES

8.1 UNIT 1 HEATING SYSTEM

For Complete procedures see HVAC Unit 1 Operating Procedures

8.2 UNIT 1 HEATING OPERATIONS OVERVIEW

8.3 SYSTEM STARTUP PREREQUISITES

1. All Lockouts/Tagouts have been cleared in respect to the safe operation of the Unit Heating System.
2. All maintenance work on system components has been completed; and the system has been inspected for removal of foreign materials.
3. All valves are properly lined up in accordance with approved checklists.
4. Electrical power is available for motors and other electrical equipment.
5. Instrument air must be available to supply control air to the pneumatically operated valves.
6. Review status of plant equipment AND review the DCS alarm log.
7. System is filled and vented, with level established in the expansion tank.

8.4 NORMAL SYSTEM STARTUP

_____ a. Place Normal System Fill in operation in accordance with section **Error! Reference source not found.**.

NOTE: The Unit Heat Converter must be lined up to provide a flow path for the Primary Heating Pumps. Prolonged operation of a Primary Heating Pump without a flow path may cause damage to the pump.

_____ b. Line Up Unit Heat Converter for Operations

1. Verify water outlet line vent valve closed.
2. Verify water inlet line drain valve closed.
3. Open water inlet isolation.
4. Cycle open and close the water outlet line vent valve to expel air from the heater.
5. Cycle open and close the channel side vent on the heat converter to expel air from the heater.
6. Open water outlet isolation.

NOTE: Once two Primary Heating Pumps are operating and the heater is vented, steam can be admitted to the heat converter.

Business Use
LGE-KU003_0001505

c. Start two Primary Heating Pumps and all Secondary Heating Pumps in accordance with section **Error! Reference source not found.**.

d. Cycle open and close system vents at the following locations to expel air from the system:

- Turbine Room Heating Coils
- 1A Boiler Room Heating Coils
- 1B Boiler Room Heating Coils
- Unit Heat Converter

8.5 NORMAL SYSTEM OPERATIONS

_____ a. Locally, check the following items associated with the operating pumps:

- Discharge pressure
- Pump suction and discharge valves properly positioned
- Pump and motor vibration
- Motor temperature
- Pump packing glands for excessive leakage

_____ b. Weekly, equalize wear on pumps by alternating pumps in accordance with section **Error! Reference source not found.**.

_____ c. Locally, check the following items associated with the Expansion Tank:

- Leaks (physical integrity)
- Water make-up valves for proper alignment
- Expansion Tank water level

_____ d. Periodically inspect system piping and components for leaks (physical integrity) and lagging condition.

_____ e. Locally, check the following items associated with the Unit Heat Converter:

- Water outlet temperature
- Shell and channel relief valves seated/closed (150 psig)
- Shell side vent valve closed
- Shell side drain valve closed
- Channel side vent valve closed
- Channel side drain valve closed
- Shell water level (less than 2/3)