Tank Farm Maintenance Procedure

Effluent Treatment Facility

USQ Not Required – ETF is a <Hazard Category 3 Radiological Facility

CHANGE HISTORY (≤ LAST 5 REV-MODS )

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for a safe, uniform method for periodic maintenance of above grade electrical equipment at TEDF Pump Station 3.

1.2 Scope

This procedure applies to the inspection and cleaning of power and control panels, disconnect switches, pump controllers, lighting, and associated wiring and enclosures. This procedure does not include inspection of equipment in sump area that is a permit-required confined space.

This procedure cannot be performed if 242-A Cooling Water System is in operation.

2.0 INFORMATION

None.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Some locations require LOTO for protection against temperature, pressure or hazardous chemicals before breaching the system. Under these circumstances, lock and tag is required in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

3.2 Radiation and Contamination Control

3.2.1 Work in radiological areas will be performed using a radiological work permit following review by Radiological Control per ALARA Work Planning procedure, TFC-ESHQ-RP_RWP-C-03.

3.3 Environmental Protection

3.3.1 In the event of a spill/leak/release, notify the SOM/FWS and respond per ETF-ERP-85B-003, Emergency Spill or Release at ETF.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:
- Vacuum cleaner with insulated attachments
- Portable compressed air canister
- Voltage tester 600-volt
- Clean, lint-free cloths.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- DOE-0336, Hanford Site Lockout/Tagout Procedure
- Drawing H-2-825707, Electrical Switch Rack, Panelboard and Meter Details

4.3 Field Preparations

4.3.1 ENSURE Operations personnel have configured system or equipment to allow performance of this procedure.
5.0 PROCEDURE

**Special Instructions**

Minor repairs such as tightening loose wires, replacing missing covers, and relamping may be completed during performance of this procedure. All actions taken and all adverse findings that require additional corrective actions are to be recorded on data sheets.

5.1 General Instructions

- 5.1.1 **POSITION** disconnect switch F8X770 to OFF.

- 5.1.2 **REQUEST** electrical utilities personnel to:
  - 5.1.2.1 **OPEN** primary disconnects to isolate F8X770.
  - 5.1.2.2 **INSTALL** electrical utilities lock and tag (hold off tag).
  - 5.1.2.3 **REQUEST** Operations overtag electrical utilities lock and tag per DOE-0336.

- 5.1.3 **CHECK** condition of conduit, enclosures, fixtures, for damage or other unsatisfactory conditions.

- 5.1.4 **VISUALLY INSPECT** grounding connections **AND**
  **REPAIR** damaged connections.

- 5.1.5 **ENSURE** grounding connections are tight.

- 5.1.6 **INSPECT** weather stripping on doors **AND**
  **REPLACE** damaged stripping.
5.2 Local Control Panel

Special Instructions

Sections 5.2 through 5.8 and steps within these sections may be performed in any logical order.

____ 5.2.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

____ 5.2.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire,

OR

REPAIR insulation.

____ 5.2.3 CHECK door-mounted switches and indicating lights.

____ 5.2.4 REPLACE indicating lights.

____ 5.2.5 CAREFULLY BLOW OUT sand and dust with compressed air,

OR

REMOVE with vacuum cleaner.

____ 5.2.6 INSPECT grounding system physical and mechanical conditions.

____ 5.2.7 ENSURE grounding connections are tight.
5.3 Service Disconnect F8X770

_____ 5.3.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

_____ 5.3.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire,

    OR

    REPAIR insulation.

_____ 5.3.3 CAREFULLY BLOW OUT sand and dust with compressed air,

    OR

    REMOVE with vacuum cleaner.

_____ 5.3.4 ENSURE wiring connections are tight.

_____ 5.3.5 CONFIRM correct blade alignment, travel stops, and mechanical operation.

_____ 5.3.6 INSPECT fuses for the following signs of wear:

    • Overheating
    • Deterioration
    • Damaged castings.

_____ 5.3.7 REPLACE fuses that show signs of wear.

_____ 5.3.8 CONFIRM fuse size and class.

_____ 5.3.9 CONFIRM proper operation of door interlock.

_____ 5.3.10 IF door interlock is not working, ADJUST AND LUBRICATE interlock.

_____ 5.3.11 INSPECT grounding system physical and mechanical conditions.

_____ 5.3.12 ENSURE grounding connections are tight.
5.4 Disconnect Switch 68I-PNLBD-A-DISC

_____ 5.4.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

_____ 5.4.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire,

    OR

    REPAIR insulation.

_____ 5.4.3 BLOW OUT sand and dust with compressed air,

    OR

    REMOVE with vacuum cleaner.

_____ 5.4.4 ENSURE wiring connections are tight.

_____ 5.4.5 CONFIRM correct blade alignment, travel stops, and mechanical operation.

_____ 5.4.6 INSPECT fuses for the following signs of wear:

    • Overheating
    • Deterioration
    • Damaged castings.

_____ 5.4.7 REPLACE fuses that show signs of wear.

_____ 5.4.8 CONFIRM fuse size and class.

_____ 5.4.9 CONFIRM proper operation of door interlock.

_____ 5.4.10 IF door interlock is not working, ADJUST AND LUBRICATE interlock.

_____ 5.4.11 INSPECT grounding system physical and mechanical conditions.

_____ 5.4.12 ENSURE grounding connections are tight.
5.5 Disconnect Switch 68I-EHU-002-DISC

NOTE - Unit heater disconnect switch 68I EHU 002 DISC may be placed in the OFF position during inspection and cleaning.

____ 5.5.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

____ 5.5.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire,

OR

REPAIR insulation.

____ 5.5.3 BLOW OUT sand and dust with compressed air,

OR

REMOVE with vacuum cleaner.

____ 5.5.4 ENSURE wiring connections are tight.

____ 5.5.5 CONFIRM correct blade alignment, travel stops, and mechanical operation.

____ 5.5.6 INSPECT fuses for the following signs of wear:
- Overheating
- Deterioration
- Damaged castings.

____ 5.5.7 REPLACE fuses that show signs of wear.

____ 5.5.8 CONFIRM fuse size and class.

____ 5.5.9 CONFIRM proper operation of door interlock.

____ 5.5.10 IF door interlock is not working, ADJUST AND LUBRICATE interlock.

____ 5.5.11 INSPECT grounding system physical and mechanical conditions.

____ 5.5.12 ENSURE grounding connections are tight.

____ 5.5.13 ENSURE disconnect switch is in ON position.
5.6 Alternator 68I-ALT-01 (Selector Relays)

- 5.6.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

- 5.6.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire,
  
  OR
  
  REPAIR insulation.

- 5.6.3 BLOW OUT sand and dust with compressed air,
  
  OR
  
  REMOVE with vacuum cleaner.

- 5.6.4 ENSURE wiring connections are tight.

5.7 Pump Controller 68I-MCC-P-A1

- 5.7.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

- 5.7.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire,
  
  OR
  
  REPAIR insulation.

- 5.7.3 BLOW OUT sand and dust with compressed air,
  
  OR
  
  REMOVE with vacuum cleaner.

- 5.7.4 ENSURE wiring connections are tight.

- 5.7.5 EXERCISE circuit breaker several times ensuring smooth positive operation.

- 5.7.6 ENSURE proper alignment of through enclosure operators.
5.7 Pump Controller 68I-MCC-P-A1 (Cont.)

____ 5.7.7 CONFIRM proper operation of door interlock.

____ 5.7.8 IF door interlock is not working, ADJUST AND LUBRICATE interlock.

____ 5.7.9 INSPECT fuses for the following signs of wear:

- Overheating
- Deterioration
- Damaged castings.

____ 5.7.10 REPLACE fuses that show signs of wear.

____ 5.7.11 INSPECT starter(s) contacts for pitting or wear. (Minor pitting may be corrected by lighting sanding or removed using scotch bright pads.)

____ 5.7.12 REPLACE badly pitted or worn contacts.

____ 5.7.13 CONFIRM smooth mechanical operation.

____ 5.7.14 CONFIRM AND RECORD motor overloads size on PM/S data sheet.

____ 5.7.15 MEASURE (megger) AND RECORD feeder wiring insulation resistance.

____ 5.7.16 INSPECT grounding system physical and mechanical conditions.

____ 5.7.17 ENSURE grounding connections are tight.

____ 5.7.18 ENSURE circuit breaker is in ON position.
5.8 Pump Controller 68I-MCC-P-B1

5.8.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

5.8.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire,

OR

REPAIR insulation.

5.8.3 BLOW OUT sand and dust with compressed air,

OR

REMOVE with vacuum cleaner.

5.8.4 ENSURE wiring connections are tight.

5.8.5 EXERCISE circuit breaker several times ensuring smooth positive operation.

5.8.6 ENSURE proper alignment of through enclosure operators.

5.8.7 CONFIRM proper operation of door interlock.

5.8.8 IF door interlock is not working, ADJUST AND LUBRICATE interlock.

5.8.9 INSPECT fuses for the following signs of wear:
  • Overheating
  • Deterioration
  • Damaged castings.

5.8.10 REPLACE fuses that show signs of wear.

5.8.11 INSPECT starter(s) contacts for pitting or wear. Minor pitting may be corrected by lighting sanding or removed using scotch bright pads.

5.8.12 REPLACE badly pitted or worn contacts.

5.8.13 CONFIRM smooth mechanical operation.

5.8.14 CONFIRM AND RECORD motor overloads size on PM/S data sheet.
5.8 Pump Controller 68I-MCC-P-B1 (Cont.)

5.8.15 MEASURE (megger) AND RECORD feeder wiring insulation resistance.

5.8.16 INSPECT grounding system physical and mechanical conditions.

5.8.17 ENSURE grounding connections are tight.

5.8.18 ENSURE circuit breaker is in ON position.

5.9 Mini-Power Center 68I-PNLBD-A

5.9.1 CHECK enclosure for signs of moisture entry or corrosion and that mounting is secure.

5.9.2 CHECK wiring for evidence of physical damage and overheating AND REPLACE wire or repair insulation.

5.9.3 CAREFULLY BLOW OUT sand and dust with compressed air, OR REMOVE with vacuum cleaner.

5.9.4 ENSURE wiring connections are tight.

5.9.5 EXERCISE circuit breakers several times ensuring smooth positive operation.

5.9.6 INSPECT grounding system physical and mechanical conditions.

5.10 Restoration

5.10.1 DISPOSE of any waste generated by this procedure performance in accordance with Waste Planning Checklist - WRPS (A-6002-848).

5.10.2 ENSURE maintenance equipment has been disconnected and removed.

5.10.3 REQUEST Operations remove overtag per DOE-0336.

5.10.4 REQUEST electrical utilities personnel close primary disconnects.

5.10.5 POSITION disconnect F8X770 to ON.

5.10.6 CONFIRM equipment or system restoration by observing indications are consistent with expected conditions.
5.11 Acceptance Criteria

Acceptance criteria has been met when steps in this procedure have been satisfactorily performed and results are recorded on the data sheet(s).

5.12 Review

5.12.1 INFORM FWS test is complete.

5.12.2 INFORM CRO test is complete.

5.12.3 (FWS) REVIEW AND ENSURE the following

- Completed data sheets meet the acceptance criteria
- Comments sections are filled out appropriately
- Work requests needed as a result of this procedure are identified and generated
- Work request number(s) of any work documents generated as a result of this procedure, are recorded in the comments/remarks section of the data sheet.

5.13 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

The record custodian identified in the Company Level, Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.