### Tank Farm Plant Operating Procedure

#### GENERAL

**USQ #TF-18-1635-S, Rev. 1**

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-4</td>
<td>12/17/2018</td>
<td>Operations Request</td>
<td>Removed a portion of section 5.3 as SACS will no longer be in use.</td>
</tr>
<tr>
<td>K-2</td>
<td>07/05/2017</td>
<td>Operations Request</td>
<td>Replaced Attachment 1 Exhauster Status Log Sheet with Site Form A-6007-307, Exhauster Status Log Sheet through procedure. Added Site Form A-6007-307, Exhauster Status Log Sheet to performance Docs 4.1.1 and 4.1.2 struck out Tank Monitor and Control System exhauster status log book in 4.1.2. 5.3 updated notes striking out Attachment 1 Exhauster Status Log Sheet and replacing with Site Form A-6007-307, Exhauster Status Log Sheet note prior to and in 5.3.2 added “Site Form A-6007-307” to Exhauster status log sheet. Updated Records section to reflect same changes. Struck out Attachment 1. Attachment 1 removed from index. Remove step 5.3.3.</td>
</tr>
<tr>
<td>K-1</td>
<td>11/29/2016</td>
<td>Operations Request</td>
<td>In general: Added definition to Section 2.1. Added Forms to Sections 4.1.1 and 4.1.2. Step 5.2.8: Replaced RCM-8 with Netbotz. Expanded Step 5.3.1.3. Step 5.10.4: changed printer address to MFM18010. All applicable places replaced pressing CNTRL-ALT-DEL with using the windows key. Step 5.14.3: Added ability to allow system administrator to provide directions. Step 5.15.2.1 Added step to push emergency power cutoff switches. Added new Section 5.17. Updated Records section.</td>
</tr>
<tr>
<td>K-0</td>
<td>08/31/2016</td>
<td>Periodic review</td>
<td>Replaced TMACS Central Facility with TMACS Facility. Deleted Panalarm Control Panels from Step 2.2.2. Modified Step 2.2.3. Deleted Steps 2.2.6, 5.2.4. Added “tank” to Step 5.4.1.5. Added NOTE above Step 5.5.8. Modified Steps 5.10.19 and 5.10.20. Deleted Sections 5.14, Start Up Powerbloc, 5.15, Respond to Powerbloc Trouble Alarms, and 5.16 Shutdown Powerbloc. Modified NOTE above Step 5.14.1 and deleted Step 5.14.4. Changed title and note for Section 5.15. Deleted Step 5.15.1. Added new RECORD Section for compliance to Std-01. Deleted Figure 1.</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for operating the Tank Monitor and Control System (TMACS) and for start-up, shutdown, monitoring activities, alarm response, troubleshooting, response to loss of power, and emergency conditions for the TMACS Facility.

1.2 Scope

This procedure includes instructions for start-up, shutdown, monitoring activities, alarm response, troubleshooting, response to loss of power, and emergency conditions for TMACS operation at the TMACS Facility or from a TMACS Master Terminal. Regular TMACS operation is performed from the Central Control Room. Any activity requiring response to TMACS Facility shall be performed per Shift Manager direction.
2.0 INFORMATION

2.1 Terms and Definitions

NOTE - SENSOR ALARMS include trouble alarms.

ALARM(S) - A condition received by TMACS in which one of the following occurs:
  - A sensor value exceeds its limit or returns to within limits indicated by the “Tank Object” and the alarm message flashing
  - An equipment failure message is displayed, such as communications loss or power loss in the field
  - Alarm condition met (i.e., High Radiation or Leak Detected in C-106 sluicing).

BUTTONS: GRAPHICS - Gray shaded rectangles that visually depress when “clicked” upon. Many of the BUTTONS will have instructions imprinted on or beside them.

BUTTONS: MOUSE - Two mouse buttons are present. The mouse buttons control pointer operations such as clicking buttons and dragging windows.

CENTRAL CONTROL ROOM - Primary facility for Production Operations TMACS monitoring.

CLICK - A method of placing the screen pointer on an object and activating the object (e.g., button) on the screen using the mouse button.

DRAG - A method of positioning an item by placing the pointer on the item to move, holding down the mouse button, and moving the mouse to relocate the item to a new location on the screen.

EMERGENCY SHUT OFF SWITCHES - Switches designed to remove power from specific equipment during an emergency situation.

ENLARGE/DECREASE - The Up/Down arrows adjacent to the HIDE button serve to enlarge or decrease the window size. The Up arrow enlarges the window and the Down arrow decreases the window.

ENVIRONMENT WINDOW - The overall display screen used for the G2 software. The Environment Window must be manipulated during start-up and shutdown of TMACS.
2.1 Terms and Definitions (Cont.)

HIDE - A button with an “X” imprinted on it that when “clicked” upon, causes the current window to disappear. When several windows are displayed at once, a window can be lifted to the foreground by pointing to the desired window with the mouse and “clicking” on the window.

ICON - A small graphic typically representing a process.

MENU BAR - Gray bar at top of screen showing menu options such as “tool” and “reports.”

MENU BAR OPTIONS - When a choice is selected from the menu bar, the resulting drop-down menu shows all options available to the user under that heading.

MOUSE - A hand-sized device that directs the arrow (pointer) on the screen when it is moved.

NetBotz – The NetBotz is on HLAN and accessible through a web browser. The temperature and humidity sensors are on a cabinet in room B107; the sensor has a local display. The leak detection ropes are under the floor in rooms B105 and B107.

NUISANCE ALARM - An alarm that diverts personnel attention from other monitored parameters or equipment operation due to its repetitive nature. A nuisance alarm may or may not indicate an off-normal or emergency condition.

POINTER - An arrow shaped symbol displayed on the TMACS screen and used in conjunction with the mouse.

RIGHT CLICK - Pressing the right mouse button on a two-button mouse.

SCREEN - The entire viewing area, usually consisting of several windows.

STATUS BAR - Gray bar along bottom of Windows screen displaying current activity, located just above “Start” menu bar.

TASKBAR - Bar at the bottom of the screen which contains the start button and process icons.

TMACS Alarm Printer — Printer used for printing TMACS generated alarms. The alarm printer is run off of the TMACS Terminal designated as the TMACS Master Terminal.

2.1 Terms and Definitions (Cont.)

TMACS Master Terminal – TMACS Terminal that has control functions i.e., ability to acknowledge alarms, initiate alarm printing, make parameter changes, and has alarm sound capabilities.

TMACS Production Computer - This is a Hewlett-Packard Netserver LX Pro computer which runs all data acquisition, display, and storage of data. Located in 2750E/B-105 labeled as TMACS Production Computer.

TMACS Terminals - Computer systems which display TMACS data. TMACS Terminals are not required for TMACS operations and do not have control to acknowledge alarms or sound capability unless made the TMACS Master Terminal.

TREND – Button/icon with “graph symbol” imprinted on it.

WINDOW - An activity or instructional box appearing in various locations on the screen.
2.2 General Information

2.2.1 Operators are required to be certified as a TMACS Operator to perform this procedure.

2.2.2 TMACS is a computerized monitoring system for sensors in the 200 Area Tank Farms. Signals are received from sensors at field mounted Acromags, Computer Interface Units (CIU) and Westronix equipment then relayed via telephone line modem to the host TMACS computer for display.

2.2.3 TMACS is capable of receiving the following types of signals from the field:
   - Temperature data from tank-mounted thermocouple trees
   - Liquid level indicating transmitters (ENRAF 854 LIT)
   - Discrete panel alarms from tank farm and evaporator control rooms as they become operational
   - Tank Monitor and Control System equipment alarms.

2.2.4 TMACS resides on the TMACS Production Computer. The software utilizes graphic windows which are accessed by a mouse and keyboard. The TMACS Production Computer houses G2 software and the hardware interface drivers.

2.2.5 If power is lost to a TMACS Master Terminal other than the TMACS Production Computer, control functions may default to the TMACS Production Computer.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

**WARNING** - If smoke or fire is observed, or if sprinklers have activated, exposure to hazardous smoke could cause serious damage to lung/eyes or serious injury to personnel. Touching any metallic or electrical equipment could cause serious electric shock and injury to personnel.

**WARNING** - If a water leak is found, contact with energized electrical equipment could cause electrical shock and injury to personnel.

3.2 Environmental Compliance

3.2.1 In the event of a leak during transfer operations, immediately report any spills and/or releases to the Central Shift Manager. The Central Shift Manager will notify Environmental in accordance with the TFC-ESHQ-ENV_FS-C-01 Environmental Notification and environmental on-call list.

3.2.2 To meet the requirements of Washington Administrative Code (WAC), Chapter 173-303, *Dangerous Waste Regulations*, spilled or leaked waste must be removed from transfer piping secondary containment, with the exception of catch tanks, within 24 hours of detection.

3.3 Limits

**Operating Specification Documents (OSDs)**

<table>
<thead>
<tr>
<th>Document No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSD-T-151-00007</td>
<td>Operating Specification for the Double Shell Storage Tanks</td>
</tr>
<tr>
<td>OSD-T-151-00013</td>
<td>Operating Specifications for Single-Shell Waste Storage Tanks</td>
</tr>
<tr>
<td>OSD-T-151-00031</td>
<td>Operating Specifications for Tank Farm Leak Detection and Single Shell Tank Intrusion Detection</td>
</tr>
</tbody>
</table>
4.0 PREREQUISITES

4.1 Performance Documents

4.1.1 The following documents may be needed to perform this procedure:

- ARP-T-041-00003, TMACS Alarm Response
- TFC-ESHQ-ENV_FS-C-01, Environmental Notification
- HNF-IP-0263-TF, Tank Farms Building Emergency Plan
- TO-040-650, Obtain and Record Single-Shell Tank Temperature Data
- TO-040-660, Obtain/Record Double-Shell Tank Temperature Data
- Tank Monitor and Control System Failure Response Call List (TMACS On-Call List)
- Site Form A-6007-230, Inhibited Alarm Logbook Data Sheet
- Site Form A-6007-307, Exhauster Status Log Sheet
- Record Submittal Checklist (Section 5.18.)

4.1.2 The following records are maintained by the TMACS facility Operator:

- Tank Monitor and Control System Logbook
- Site Form A-6007-230, Inhibited Alarm Logbook Data Sheet
- Site Form A-6007-307, Exhauster Status Log Sheet.
5.0 PROCEDURE

NOTE – Sections 5.1 through 5.16 may be performed in any logical order.

5.1 Perform Routine Shift Checks (All Shifts)

NOTE - The steps 5.1.1 through 5.1.4 are performed within the first hour of each shift.

5.1.1 PERFORM the following to ensure TMACS is operational:

5.1.1.1 CONFIRM operability of each TMACS Terminal, at the location of the TMACS Master Terminal by observing the displayed time is correct and updating once per second on the “STATUS PANEL” window.

5.1.1.2 IF observed time is not correct or is not updating once per second, NOTIFY Shift Manager AND PERFORM the following:

   a. RECORD any variation of the time in TMACS Operator Logbook.

   b. NOTIFY TMACS Engineer of discrepancy.

5.1.2 PERFORM the following to review Alarm Status:

5.1.2.1 SELECT “CURRENT ALARMS” menu option under Tools menu.

5.1.2.2 OBSERVE each alarm message.

5.1.2.3 REVIEW liquid level trend for each tank with an activated high or low level alarm.

5.1.2.4 IF adequate follow-up actions have not been completed, or if new conditions exist, NOTIFY Shift Manager.
5.1 Perform Routine Shift Checks (All Shifts) (Cont.)

5.1.3 **PERFORM** the following to review logs:

5.1.3.1 **CHECK** the following logs for activity, notifications, and completeness from previous shifts:

- TMACS OPERATOR LOGBOOK
- EXHAUSTER STATUS LOGBOOK.

5.1.4 **CHECK** the alarm printer for paper and ink.

5.1.4.1 **IF** low, **NOTIFY** Shift Manager of the need to get supplies from TMACS Facility or supply.
5.2 Perform Trend Routines and Night Routines (Night Shift)

5.2.1 PERFORM the following to review tank temperature trends:

5.2.1.1 GO TO Hanford Tank Farm Facilities window using the TMACS Master Terminal.

5.2.1.2 CLICK on tank object to obtain TANK STATUS windows for a tank connected to TMACS.

5.2.1.3 CLICK on temperature sensor in waste displaying highest tank temperature, to obtain 7-day trend.

5.2.1.4 REPORT any abnormal or unexplainable trends to Shift Manager.

5.2.1.5 REPEAT Steps 5.2.1.1 through 5.2.1.4 for each tank.

5.2.2 PERFORM the following to review Tank liquid level trends:

5.2.2.1 USING TMACS Master Terminal, GO TO Hanford Tank Farm Facilities window AND CLICK on tank object to obtain TANK STATUS windows for a tank connected to TMACS.

5.2.2.2 CLICK on Trend symbol adjacent to the Liquid Level sensor to call up Liquid Level Trend.

5.2.2.3 REPORT any abnormal or unexplainable trends to Shift Manager. (OSD-T-151-00007, OSD-T-151-00013)

5.2.2.4 REPEAT Steps 5.2.2.1 through 5.2.2.3 for each tank.

5.2.3 RECORD trend routines are complete in TMACS Operator Logbook.
5.2 Perform Trend Routines and Night Routines (Night Shift) (Cont.)

Perform Night Routine at TMACS Facility

NOTE - Extra printer supplies are maintained for each printer. Color laser printer toner cartridges are stored in the TMACS Facility.

5.2.4 CHECK the paper and printer supplies for the alarm printer.

5.2.5 IF the supply becomes low, NOTIFY day shift to contact the Supply Room at 373-9585 to order more.

5.2.6 ENSURE paper and toner/cartridge supplies are adequate.

5.2.7 PERFORM general housekeeping and inspections of Rooms B-105 and B-107.
   - Electronic malfunctions
   - Excessive equipment heat
   - Safety hazards
   - Clutter.

5.2.8 RECORD night routines are complete in the TMACS Operation Logbook.
5.3 Maintain Exhauster Status Log

NOTE - The Exhauster Status Log Sheet was started in response to a Washington State Department of Health request to track the operating times for each exhauster. The Washington Administration Code, Section 246-247-080, states “each facility shall maintain a log for each emission unit.”

- PRC Air and Water Services uses the information in this log to calculate the total radionuclide emission from each exhauster in annual reports submitted to the state and federal regulators.

5.3.1 IF the Site Form A-6007-307, Exhauster Status Log Sheet is full for the exhauster currently being logged, PERFORM the following:

5.3.1.1 OBTAIN blank copies of the appropriate Site Form A-6007-307, Exhauster Status Log Sheet.

5.3.1.2 RECORD the following information on the Site Form A-6007-307, Exhauster Status Log Sheet as applicable, using one page per fan:
- Facility
- Stack number
- Fan number.

NOTE - When identified in specific maintenance procedures that fan shutdowns and switching is expected to occur frequently and for short durations, each status change does not have to be recorded on the Site Form A-6007-307, Exhauster Status Log Sheet. However, the start and completion of the activity should be recorded in the TMACS logbook and the end of shift status needs to be updated in the Exhauster Status Log.

5.3.2 RECORD each Exhauster status change, time/date, and applicable information as reported by the field operators on the appropriate Site Form A-6007-307, Exhauster Status Log Sheet.

5.3.3 IF still in use, RETAIN original Exhauster Log Sheets in the Exhauster Status Logbook.

5.3.4 SUBMIT completed Exhauster Status Log Sheets to the Central Shift Office with the Records Submittal Checklist per Section 5.18 for retention.
5.4 Define Transfer Route and Begin Data Collection

Defining Transfer Route

NOTE - Step 5.4.1 may be completed prior to the start of a transfer.
- The Define Transfer option is only available from the TMACS Master Terminal.

5.4.1 WHEN requested, PERFORM the following to define a transfer route.

5.4.1.1 SELECT “TOOLS” menu from the menu bar.

5.4.1.2 SELECT “WASTE TRANSFERS”.

5.4.1.3 SELECT “DEFINE TRANSFER”.

5.4.1.4 SELECT the sending tank.

5.4.1.5 SELECT the receiving tank.

5.4.1.6 CLICK on double right arrows to place the selected transfer in the far right column.

5.4.1.7 IF tank selection is correct, CLICK “SAVE TRANSFER”.

Begin Data Collection

5.4.2 WHEN requested, CLICK “TRANSFER STATUS” from the Tools and Waste Transfer menus.

5.4.3 SELECT correct transfer from the transfer list.

NOTE - Data collection is started when “START TRANSFER” is selected.

5.4.4 WHEN requested, CLICK on “START TRANSFER” to start data collection.

5.4.4.1 IF Rate-of-Change alarms are received, NOTIFY Shift Manager/OE.

5.4.5 IF requested, CLICK “Suspend Transfer” to temporarily suspend transfer data collection.

5.4.6 IF requested, CLICK “Delete Transfer” to end transfer data collection and remove the transfer from the “Waste Transfer Status” list.
5.5 Setup Sensor Report

NOTE - The setting up of a Sensor Report is only available from the TMACS Master Terminal.

5.5.1 SELECT the “Reports” menu from the menu bar.

5.5.2 SELECT “Sensor Update” AND CLICK “New.”

5.5.3 ENTER name of the new report in the box labeled “New Report Name.”

5.5.4 ON the UPDATE SENSOR REPORT screen, SELECT the Selector Sensors Box.

5.5.5 ON the SELECT SENSOR box, SELECT FARM button for farm requested.

5.5.6 ON the SELECT SENSOR box, SELECT TYPE button (Level or Temperature) for farm that was selected.

5.5.7 ENSURE that the correct instruments are selected as called out from a procedure or work package that requested sensor report to be created.

NOTE - The Update Sensor Report screen will show all of the sensors selected.

5.5.8 REPEAT steps 5.5.5 through 5.5.7 until all instruments that were requested are selected.
5.6 Raise and Lower ENRAF Level Gauge Displacer

NOTE - Step 5.6.1 will raise the ENRAF level gauge displacer into the tank dome riser and “PARK” it while retrieval activities occur. This will prevent damage to the ENRAF wire or displacer. A surface level reading cannot be taken while the ENRAF is in the “Park” position.

5.6.1 PERFORM the following to raise ENRAF displacer and “PARK” it:

5.6.1.1 REQUEST authorization from Shift Manager to raise ENRAF displacer.

5.6.1.2 RIGHT CLICK on the ENRAF that is to be raised AND SELECT “Park Enraf” from the drop down menu.

   a. IF “Park Enraf” option is not available for selected gauge, NOTIFY the TMACS Engineer to establish PARK height.

5.6.1.3 CLICK “OK” in the “Park Enraf?” window.

NOTE - ENRAF may take several minutes to rise to the Park position.

5.6.1.4 CONFIRM ENRAF is parked by performing the following:

   a. ENSURE “PARKED” is displayed by the ENRAF icon.

   b. LEFT CLICK on the parked ENRAF icon that was raised to bring up trend chart AND CLICK trend chart detail button to show sensor details.

   c. ENSURE “PARKED” is displayed on the “QUALITY STATUS” line on the “SENSOR DETAILS” page.

5.6.1.5 RECORD actions taken in the TMACS Operator Logbook.
5.6 Raise and Lower ENRAF Level Gauge Displacer (Cont.)

NOTE - Step 5.6.2 will lower the ENRAF and set it back down on the surface of the waste, allowing a surface level reading to be taken.

5.6.2 PERFORM the following to remove the ENRAF from “PARK” and lower the ENRAF displacer:

5.6.2.1 REQUEST authorization from Shift Manager to lower ENRAF back onto the tank waste surface.

5.6.2.2 RIGHT CLICK on ENRAF that is to be lowered.

5.6.2.3 CLICK “Lower Enraf”.

5.6.2.4 CLICK “OK” in the “Lower Enraf?” window to lower ENRAF displacer.

NOTE - ENRAF may take several minutes to lower to the waste surface.

5.6.2.5 CONFIRM ENRAF is lowered by performing the following:

   a. ENSURE ENRAF icon changes to show a NORMAL ENRAF.

   b. RIGHT CLICK on the ENRAF icon that was lowered AND

       SELECT “show sensor details” from the drop-down menu.

   c. ENSURE “good” is displayed by on the “QUALITY STATUS” line on the “SENSOR DETAILS” page.

5.6.3 RECORD actions taken in the TMACS Operator Logbook.
5.7 Patch TMACS Production Computer

5.7.1 **OBTAIN** Central Shift Manager permission prior to performing TMACS Production Computer patching.

5.7.2 **SWITCH** TMACS Master Terminal to “2750E_MAIN” per Section 5.12.

5.7.3 **REPORT** to the TMACS Facility.

5.7.4 **PERFORM** TMACS Production Computer patching.

5.7.5 **SWITCH** TMACS Master Terminal per Shift Manager direction.

5.7.6 **REPORT** to the TMACS Master Terminal.
<table>
<thead>
<tr>
<th>5.8 Patch TMACS Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NOTE</strong> - Information window will appear on the screen and prompt Operator to update a TMACS Terminal. TMACS Master Terminal must only be switched to a patched master-capable TMACS Terminal.</td>
</tr>
<tr>
<td><strong>5.8.1</strong> CLICK “OK” for patching on TMACS Terminal <strong>AND</strong> WAIT for patching to be completed.</td>
</tr>
<tr>
<td><strong>5.8.2</strong> IF TMACS Master Terminal also needs to be patched, SWITCH TMACS Master Terminal to a master-capable TMACS terminal per Section 5.12.</td>
</tr>
<tr>
<td><strong>5.8.3</strong> CLICK “OK” for patching on the unpatched TMACS Terminal.</td>
</tr>
<tr>
<td><strong>5.8.4</strong> AFTER patching is complete, RESTORE the previous TMACS Master Terminal per Section 5.12.</td>
</tr>
<tr>
<td><strong>5.8.5</strong> REPEAT Step 5.8.1 for any other TMACS Terminal that requires patching.</td>
</tr>
</tbody>
</table>
5.9 Start-up TMACS Production Computer

5.9.1 ENSURE uninterruptible power supply (UPS) is ON.

5.9.2 ENSURE the TMACS Production Computer Monitor is ON.

5.9.3 ENSURE the TMACS Production Alarm Printer is ON.

5.9.4 ENSURE the TMACS Color Graphics printer is ON.

NOTE - Power switch to the TMACS Production Computer is located on the front under the “Dell” logo.

5.9.5 ENSURE the TMACS Production Computer is ON AND OBSERVE green LED button is ON.

5.9.6 OBSERVE TMACS Production Computer Monitor displays several start-up messages and ends with a window with the message: “Press Control + Alt + Delete to sign in” (it may take several minutes for the graphic to appear).

5.9.7 IF flags appear, CLICK “OK” to clear them.

5.9.8 PRESS “Control + Alt + Delete” keys simultaneously on the TMACS Production Computer keyboard.

5.9.9 OBSERVE Login information window is displayed.

5.9.10 ENTER “TMACSOperator” in entry field labeled “User Name”.

5.9.11 OBTAIN password from TMACS key box.

5.9.12 ENTER the password in entry field labeled “passcode”.

5.9.13 ENSURE the HANFORD domain is selected.

5.9.14 CLICK the box with the arrow in it.

5.9.15 IF flags appear, CLEAR them by CLICKING “OK”.

5.9.16 WAIT until the Hanford Tank Farm Facilities window is displayed on the monitor before proceeding.
5.9 Start-up TMACS Production Computer (Cont.)

5.9.17 CLICK “Show Main Display” under Tools menu.

5.9.18 CONFIRM TMACS is operational by observing the displayed time on the “MASTER STATUS PANEL” window is correct and updating once per second.

5.9.19 ENSURE all field equipment is communicating correctly AND REVIEW current alarm status.

5.9.20 NOTIFY Shift Manager of discrepancies.

5.9.21 IF the time on the MASTER STATUS PANEL is not updating once per second,

OR

IF field equipment is not communicating properly, CONTACT TMACS Engineer per the TMACS On-Call List.

5.9.22 RECORD start-up of TMACS in TMACS Operator Logbook.

5.9.23 NOTIFY Shift Manager that TMACS has been returned to service.
5.10 Shut Down TMACS Production Computer

5.10.1 REQUEST permission from Shift Manager to shut down TMACS.

5.10.2 PRINT the Hanford Tank Farm Facilities by clicking on the “PRINT SCREEN” button. (The button may be concealed behind the “MOST RECENT ALARM” window.)

5.10.3 OBSERVE that the “Print” window is displayed.

5.10.4 IF you are in 274AW, SELECT the printer “PS-1\MFM18010”.

5.10.5 IF you are in 2750E, SELECT the printer “Hewlett-Packard HP Color Laserjet CP4520 Series”.

5.10.6 CLICK the Print button.

5.10.7 OBSERVE that the screen print is printed.

5.10.8 SAVE the screen print for use when restarting TMACS.

5.10.9 PRESS the “Ctrl + Y” keys on the TMACS Production keyboard.

5.10.10 OBSERVE that “User Settings Editor” is displayed.

5.10.11 CLICK on box to the right of the “G2 User Mode” box.

5.10.12 OBSERVE that a second window, referred to as a text editor, is displayed to the left of the Login window.

5.10.13 HOLD DOWN “CTRL” key AND

TYPE “X” to cancel any existing settings.

5.10.14 TYPE “shutdown” in lower case letters AND

PRESS “ENTER”.

5.10.15 CLICK “End” button to start TMACS shutdown process.

5.10.16 WAIT until TMACS is removed from screen.
5.10 Shut Down TMACS Production Computer (Cont.)

5.10.17  **PRESS** the WINDOWS key (/png) on the TMACS Production Computer keyboard.

5.10.18  **OBSERVE** that “TMACSOperator” and the following 2 icons are displayed in the upper right-hand window:

![Power Icon]

5.10.19  **CLICK** center icon (/png).

5.10.20  **OBSERVE** window with “Shut Down” and “Restart” displayed.

5.10.21  **CLICK** “Shut down”.

5.10.22  **OBSERVE** window with “Choose a reason”.

5.10.23  **CLICK** on drop-down arrow **AND**

**SELECT** “Other (Planned)”.

5.10.24  **CLICK** Continue.

5.10.25  **IF** warning appears, **CLICK** “Shut Down anyway”.

5.10.26  **CONFIRM** green LED on front of TMACS Production Computer is OFF.

5.10.27  **TURN OFF** power to TMACS Production Computer Monitor.

5.10.28  **TURN OFF** power to TMACS Alarm Printer.

5.10.29  **TURN OFF** power to TMACS Graphics Printer.
5.11 Start-up TMACS Terminal

NOTE - TMACS Production Computer must be started per Section 5.9 before TMACS Terminal(s) can be started.

5.11.1 TURN ON power to TMACS Terminal monitor.

5.11.2 TURN ON power to TMACS Terminal computer.

5.11.3 OBSERVE Hanford Tank Farm Facilities window is displayed on monitor.

5.11.4 CLICK “Show Main Display” from Tools drop down menu.

5.11.5 CONFIRM TMACS is operational by observing the displayed time on the “STATUS PANEL” window is correct and updating once per second.

5.11.6 IF time on “STATUS PANEL” is not updating once per second, CONTACT TMACS Engineer per TMACS On-Call List.
5.12 Switching TMACS Master Terminal

5.12.1 **OBTAIN** Shift Manager permission prior to switching TMACS Master Terminal.

5.12.2 **CLICK** “Tools”.

5.12.3 **CLICK** “Window Status”.

5.12.4 **CLICK** the desired TMACS Terminal to be made the TMACS Master Terminal.

5.12.5 **CLICK** “Make Master”.

5.12.6 **CLICK** “OK”.
5.13 Shut Down TMACS Terminal

5.13.1 **PRESS** “Ctrl + Alt + Delete” on the TMACS Terminal keyboard.

5.13.2 **OBSERVE** that Windows Security graphic is displayed.

5.13.3 **CLICK** “Shutdown”.

5.13.4 **OBSERVE** that “Shutdown Computer” window is displayed.

5.13.5 **CLICK** “Shutdown”.

5.13.6 **PRESS** “OK”.

5.13.7 **TURN OFF** power to TMACS computer.
5.14 Respond to Loss of TMACS Power

NOTE - TMACS is equipped with a UPS that will keep the TMACS Production Computer powered for up to 60 minutes. If normal power is restored promptly, TMACS will not need to be re-started. In addition, TMACS modems are equipped with an uninterruptible power supply (UPS) located on the west side next to the modem rack.

- The TMACS Production Computer UPS is programmed to send a notification email to ^Tank Farms Shift Operations mailbox if the UPS switches to battery power.

5.14.1 REPORT to TMACS Facility per Shift Manager direction.

5.14.2 RECORD in TMACS Operators Logbook TMACS status and notifications.

5.14.3 IF power outage is to last for more than 30 minutes, PERFORM shutdown of TMACS Production Computer and TMACS Terminal per Section 5.10 and Section 5.13,

OR

FOLLOW directions per system administrator AND

RECORD directions given.

5.14.4 IF power is lost to the power panel, NOTIFY Shift Manager to request electricians.

5.14.5 WHEN power is regained, CONTACT Shift Manager to verify power is stable and for equipment startup direction.
5.15 Respond to APC Netbotz 450 Environmental Monitor

NOTE - The TMACS Facility is equipped with leak detectors located under the false floor in room B-105 and B-107. They will provide indication of moisture accumulation, most likely from a piping leak inside a HVAC unit or fire system piping. All alarms are emailed to the shift manager’s email box. An alarm will be sent out hourly until the moisture is removed from the leak detectors and the APC Netbotz 450 automatically resets.

5.15.1 INSPECT rooms B-105 and B-107 for evidence of problems and/or leaks.

(OSD-T-151-00031)

WARNING

If a water leak is found, contact with energized electrical equipment could cause electrical shock and injury to personnel.

5.15.2 IF a leak is found in the sub-floor and the cause cannot be immediately determined and corrected, PERFORM the following:

5.15.2.1 PUSH Emergency Power Cut Off Switch located inside B-107 at each doorway.

5.15.2.2 EVACUATE TMACS Facility to the 2750E Building lobby.

5.15.2.3 NOTIFY Shift Manager of the conditions found and actions taken.

5.15.3 RECORD actions taken in the TMACS Operator Logbook.
5.16 Troubleshoot TMACS Equipment

5.16.1 PERFORM the following to troubleshoot TMACS screen errors:

5.16.1.1 IF TMACS screen has un-erased shadow lines or other graphic flaws, HOLD DOWN “Ctrl” key AND TYPE “C” to refresh screen.

5.16.1.2 IF screen errors still remain, NOTIFY Shift Manager and a TMACS Engineer.

5.16.2 IF TMACS Alarm Printer is not functioning, PERFORM the following:

5.16.2.1 TURN OFF Power to TMACS Alarm Printer.

5.16.2.2 AFTER 15 seconds, TURN ON Power to the TMACS Alarm Printer.

5.16.2.3 IF the TMACS Alarm Printer is still not functioning, NOTIFY Shift Manager.
5.17 Enable/Disable TMACS Alarms

5.17.1 IF inhibiting an alarm, PERFORM the following to disable alarm processing for the sensor generating a nuisance alarm:

5.17.1.1 DETERMINE if an alarm may be inhibited. An alarm can be inhibited if one of the following conditions have been met:

- The alarm has gone off 10 times in a 15 minute period (nuisance alarm), with no cause determined, and the alarm is determined to be false by investigation in the field
- A scheduled maintenance job will activate the alarm repeatedly in a short period of time
- The system associated with the alarm is out of service, yet the out of service conditions repeatedly set off the alarm
- As directed by the Shift Manager.

5.17.1.2 IF inhibiting alarms that are identified as Environmental, REQUEST Shift Manager evaluate the need to notify the facility Environmental Representative.

5.17.1.3 COMPLETE Inhibited Alarm Logbook Data Sheet (Site Form A-6007-230) AND OBTAIN Shift Managers concurrence to inhibit alarm.

5.17.1.4 RIGHT CLICK on sensor generating the alarm.

5.17.1.5 SELECT “TOGGLE ALARM PROCESSING” from menu.

5.17.1.6 ENSURE message “Do you wish to disable the Alarm?” is displayed.

5.17.1.7 CLICK the button labeled “OK” to disable alarm.

5.17.1.8 RECORD in TMACS logbook an entry detailing alarms disabled.
5.17 Enable/Disable TMACS Alarms (Cont.)

5.17.2 IF enabling an inhibited alarm, **PERFORM** the following to ENABLE an alarm previously disabled:

5.17.2.1 **DETERMINE** if alarm(s) may be returned to normal AND **REQUEST** approval from Shift Manager. Reasons an alarm may be returned to normal may include:
- Conclusion of scheduled maintenance work
- Correction of an abnormal condition revealed by further investigation of excessive alarm activation
- Return of the system associated with the alarm to service
- Test to see if condition that caused nuisance alarm has cleared.

5.17.2.2 **REQUEST** Shift Manager sign and date **SHIFT MANAGER APPROVAL TO RETURN** on Alarm Inhibit Tracking Sheet.

5.17.2.3 **RIGHT CLICK** on sensor generating the alarm.

5.17.2.4 **SELECT** “TOGGLE ALARM PROCESSING” from menu.

5.17.2.5 **ENSURE** message “Do you wish to enable Alarm?” is displayed.

5.17.2.6 **CLICK** the button labeled “OK” to enable alarm.

5.17.2.7 **RECORD** in TMACS logbook an entry detailing alarms enabled.
5.18 Records

5.18.1 PERFORM the following for records identified within this procedure.

5.18.1.1 RECORD the number of times the record was generated in applicable column

OR

PLACE a check mark (✓) in the N/A column.

5.18.1.2 SUBMIT the package for verification of completed records.

<table>
<thead>
<tr>
<th>Records Submittal Checklist</th>
<th>Number of times completed</th>
<th>N/A (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site Forms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Form A-6007-230, Inhibited Alarm Logbook Data Sheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Form A-6007-307, Exhauster Status Log Sheet.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FWS/OE/Shift Manager SEND the completed records to the Central Shift Office for records retention.</td>
<td></td>
<td></td>
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<tr>
<td>___________________________ / _______________________ / _______________</td>
<td></td>
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</tr>
<tr>
<td>Signature</td>
<td>Print (First and Last)</td>
<td>Date</td>
</tr>
<tr>
<td>FWS/OE/Shift Manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.