DISTRIBUTION SHEET

To DISTRIBUTION	From MF ERHART	Page 1 of 1
Project Title/Work Order OPERABILITY TEST PROCEDURE FOR 244-U DCRT		Date 02-14-95
		EDT No. NA
		ECN No. 613311

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
Central Files (2)	L8-04	X			
OSTI (2)	L8-07	X			
GT BEAR	R1-R1	X			
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GM CRUMMEL	R1-51	X			
MF ERHART (2)	R1-51	X			
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MR KOCH	R1-49	X			
BK RARIG	G7-57	X			
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ENGINEERING CHANGE NOTICE

Page 1 of 21. ECN 613311Proj.
ECN

2. ECN Category (mark one) Supplemental ☐ Direct Revision ☒ Change ECN ☐ Temporary ☐ Standby ☐ Supersedure ☒ Cancel/Void ☐	3. Originator's Name, Organization, MSIN, and Telephone No. MF ERHART, R1-51, 373-4743 5. Project Title/No./Work Order No. 244-U DCRT 8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-ER3641-OTP-001 REV 0	3a. USQ Required? ☒ Yes ☐ No 6. Bldg./Sys./Fac. No. 241-U-271 9. Related ECN No(s).	4. Date 02-14-95 7. Approval Designator SQ 10. Related PO No.
11a. Modification Work ☐ Yes (fill out Blk. 11b) ☒ No (NA Blks. 11b, 11c, 11d)	11b. Work Package No. N/A	11c. Modification Work Complete NA Cog. Engineer Signature & Date	11d. Restored to Original Condition (Temp. or Standby ECN only) NA Cog. Engineer Signature & Date
12. Description of Change These changes incorporate WHC-SD-ER3641-OTP-002 REV 0 and WHC-SD-ER3641-OTP-003 REV 0 into WHC-SD-ER3641-OTP-001 REV A 1. Additionally, this document will incorporate testing of new systems added to the 244-U DCRT. <i>me 2/13/95</i>			
13a. Justification (mark one) Criteria Change ☐ Design Improvement ☒ Environmental ☐ Facility Deactivation ☐ As-Found ☐ Facility Const. ☐ Const. Error/Omission ☐ Design Error/Omission ☐			
13b. Justification Details These changes will consolidate testing and allow the new system to have an Operability Test conducted.			

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ENGINEERING CHANGE NOTICE				Page 2 of 2		1. ECN (use no. from pg. 1) 613311																	
15. Design Verification Required ☐ Yes ☒ No		16. Cost Impact <table style="width: 100%; border: none;"> <tr> <td colspan="2" style="text-align: center; font-weight: bold;">ENGINEERING</td> <td colspan="2" style="text-align: center; font-weight: bold;">CONSTRUCTION</td> </tr> <tr> <td style="width: 30%;">Additional</td> <td style="width: 10%; text-align: center;">☐</td> <td style="width: 10%; text-align: center;">\$</td> <td style="width: 50%;">Additional</td> <td style="width: 10%; text-align: center;">☐</td> <td style="width: 10%; text-align: center;">\$</td> </tr> <tr> <td>Savings</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">\$</td> <td>Savings</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">\$</td> </tr> </table>				ENGINEERING		CONSTRUCTION		Additional	☐	\$	Additional	☐	\$	Savings	☐	\$	Savings	☐	\$	17. Schedule Impact (days) Improvement ☐ Delay ☐	
ENGINEERING		CONSTRUCTION																					
Additional	☐	\$	Additional	☐	\$																		
Savings	☐	\$	Savings	☐	\$																		
18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.																							
SDD/DD		☐		Seismic/Stress Analysis		☐																	
Functional Design Criteria		☐		Stress/Design Report		☐																	
Operating Specification		☐		Interface Control Drawing		☐																	
Criticality Specification		☐		Calibration Procedure		☐																	
Conceptual Design Report		☐		Installation Procedure		☐																	
Equipment Spec.		☐		Maintenance Procedure		☐																	
Const. Spec.		☐		Engineering Procedure		☐																	
Procurement Spec.		☐		Operating Instruction		☐																	
Vendor Information		☐		Operating Procedure		☐																	
OM Manual		☐		Operational Safety Requirement		☐																	
FSAR/SAR		☐		IEFD Drawing		☐																	
Safety Equipment List		☐		Cell Arrangement Drawing		☐																	
Radiation Work Permit		☐		Essential Material Specification		☐																	
Environmental Impact Statement		☐		Fac. Proc. Samp. Schedule		☐																	
Environmental Report		☐		Inspection Plan		☐																	
Environmental Permit		☐		Inventory Adjustment Request		☐																	
19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.																							
Document Number/Revision		Document Number/Revision		Document Number/Revision		Document Number/Revision																	
20. Approvals																							
Signature		Date		Signature		Date																	
OPERATIONS AND ENGINEERING				ARCHITECT-ENGINEER																			
Cog. Eng. N RAZFAR		3/13/95		PE																			
Cog. Mgr. AR TEDESCHI		3/13/95		QA																			
QA WL ADAMS		3/13/95		Safety																			
Safety OM JAKA		3/13/95		Design																			
OPS. JJ KLOS		3-13-95		Environ.																			
Originator MF ERHART		3/13/95		Other																			
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				ADDITIONAL																			
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Document Number: WHC-SD-ER3641-OTP-001, REV 1

Document Title: OPERABILITY TEST PROCEDURE FOR 244-U DCRT

Release Date: 3/13/95

**This document was reviewed following the
procedures described in WHC-CM-3-4 and is:**

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

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March 13, 1995

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SUPPORTING DOCUMENT

1. Total Pages 120

2. Title

OPERABILITY TEST PROCEDURE FOR 244-U DCRT

3. Number

WHC-SD-ER3641-OTP-001

4. Rev No.

1

5. Key Words

244-U, DCRT, LIQUID LEVEL DETECTOR, LEAK DETECTOR, ALARMS, 241-U-271 BUILDING, YOKIGAWA, DATA LOGGER, ALARM PANEL, TRANSFER PUMP, SUMP PUMP, DIP TUBE, HEPA FILTER, EXHAUST DPIC, SPECIFIC GRAVITY, HEAT TRACE, WEIGHT FACTOR, THERMOCOUPLE, PUMP PIT

6. Author

Name: MF ERHART

Signature

Organization/Charge Code 7CH40/N1041

7. Abstract

This OPT will insure the operability of the instrumentation for the 244-U Double Shell Containment Receiver Tank (DCRT). The system consists liquid level and leak detection sensors, specific gravity / weight factor system, heat trace, DCRT vessel temperature system, Dip tubes, exhauster DPIC and flush pit waste dilution system, and transfer pump system.

8. RELEASE STAMP

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**TANK FARM
PLANT OPERATING PROCEDURE**

SYSTEM

244-U

OPERABILITY TEST PROCEDURE FOR 244-U

MASTER

Release Date

03/13/95

Document No.

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TANK FARM PLANT OPERATIONS PROCEDURE

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TANK FARM PLANT OPERATIONS PROCEDURE

1.0 PURPOSE

1.1 This OTP will ensure the operability of various systems and their general equipment, used in the operation of the 244-U DCRT. Systems that will be tested include the following:

- Leak Detection Systems
- Heat Trace System
- Vessel Temperature Measurement System
- Dip Tube Water System
- Weight Factor and Specific Gravity System
- Instrument Air System
- Vessel Liquid Level System
- Vessel Liquid Transfer System
- Exhauster DPIC System

The tests will cover checks on equipment operation and electrical interlocks, but will not cover checks on associated annunciator alarms. The annunciator tests are covered in a separate OTP, SD-RE-OTP-108.

TANK FARM PLANT OPERATIONS PROCEDURE

2.0 INFORMATION

2.1 SCOPE

2.1.1 LEAK DETECTION SYSTEM

The leak detection system involves six leak detectors and four liquid level detectors, one in each pit drain trap. One leak detector is located in a pipe encasement, one is in the 244-U DCRT sump, and the remaining four are found in the following 244-U locations; pump pit, filter pit, instrument pit and flush pit. The leak detectors located in the pits are connected to leak detection-liquid level stations. The other leak detectors are connected to leak detection stations.

The leak detectors turn on strobe lights at the stations and annunciate on panels ANN-U and ANN-271-U, located in 244-U Instrument Bldg and 241-U-271 respectively, upon leak detection. The flush pit, pump pit, and transfer line leak detectors shut down the 244-U Transfer Pump (P-244-U-1) on alarm. The sump pit and pump pit leak detectors shut down the 241-U Jet Pumps on alarm.

Liquid level detectors are located in each pit drain trap. When drain trap levels are low, a strobe light alarm will be activated at each affected Leak Detection Station. Also, an alarm will annunciate on panels ANN-U and ANN-271-U, located in 244-U Instrument Bldg and 241-U-271 respectively. The traps must maintain an adequate liquid level to isolate the DCRT from the environment and maintain vessel vacuum.

2.1.2 HEAT TRACE SYSTEM

Process lines SN-264, SN-265 and SN-266 are utilized to transfer liquid waste to the 244-U DCRT and range in length from 30 to 186 feet. Each of these process lines has an independent heat trace system consisting of a heater cable, controller, driver, limit alarm, indicator and 3 Type "T" thermocouples (see Figure 1). The process line temperature is monitored by one thermocouple that sends input to the heat trace controller. As required, to maintain the setpoint process temperature, the controller operates the driver which activates the heater cable. Another thermocouple also monitors process line temperature but sends the data to the limit alarm. The limit alarm activates annunciator alarms at low and high temperature limits. The limit alarm also shuts down the controller at the high temperature limit and provides input to the indicator for set point and process temperature readouts. A spare thermocouple is included for future use.

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TANK FARM PLANT OPERATIONS PROCEDURE

2.1 SCOPE (Continued)

2.1.3 VESSEL TEMPERATURE MEASUREMENT SYSTEM

The receiver vessel has a thermocouple to monitor liquid temperature. A transmitter is used to convert the thermocouple signal for use by a pen recorder on the 244-U Instrumentation Panel. A Type E, Chromel-Constantan, thermocouple is used for measuring the tank temperature.

2.1.4 DIP TUBE WATER SYSTEM

The Dip Tube Water System is a system in which water flows into the high and medium purge Dip Tubes. The flow rate through the Dip Tube is equal to approximately 2 drops per second. This minimal flow rate is enough to humidify the air flowing through the Dip Tubes and; therefore, prevent them from becoming plugged by saltcake.

2.1.5 WEIGHT FACTOR AND SPECIFIC GRAVITY SYSTEM

The high and medium purge Dip Tubes extend well into the 244-U Receiver Vessel. While the low purge Dip Tube extends just inside the Vessel. The high purge Dip Tube extends to within one inch of the bottom of the Vessel and the medium purge Dip Tube extends to a height that is ten inches above the bottom of the high purge Dip Tube. Air flows through the Dip Tubes and forces the liquid out of the tube until an equilibrium is established between the air pressure and the pressure exerted by the liquid (i.e. its hydrostatic head).

The Dip Tubes are connected to the Weight Factor and Specific Gravity System. It is this system which measures the differential pressures that exist between the three Dip Tubes. This system consists of electronic differential pressure transmitters which convert the measured differential pressures into an electronic signal, representative of the liquid's weight factor and specific gravity.

2.1.6 INSTRUMENT AIR SYSTEM

This is the system which delivers Instrument Air to the Dip Tubes. The compressor for the Instrument Air System is located in building 241-U-701.

TANK FARM PLANT OPERATIONS PROCEDURE

2.1 SCOPE (Continued)

2.1.7 VESSEL LIQUID LEVEL SYSTEM

This system provides the actual 244-U DCRT Liquid Level via the differential pressures that exist between the high, medium and low purge Dip Tubes. The outputs are displayed on the Yokogawa μ R1000 Strip Chart Recorder. The Liquid Level is recorded on the strip chart as a percentage of the chart (purple pen), the total gallons are displayed on the digital display.

2.1.8 VESSEL LIQUID TRANSFER SYSTEM

Liquid is removed from the 244-U DCRT by the Transfer Pump. The flow rate of the liquid being transferred and the dilution rate of the liquid itself, are controlled by Diaphragm Operated Valves DOV-244-U-2 and DOV-244-U-1 respectively. The amount that these valves open or close is controlled by the Yokogawa YS170 Flow Indication Controller (FIC). From the FIC the DOVs can be manually adjusted to a percentage open. Also, the FIC can be put into an automatic mode. In this mode the FIC will automatically open or shut the DOV depending on the specific gravity of the liquid and/or the amount of liquid remaining in the 244-U DCRT.

2.1.9 EXHAUSTER DPIC SYSTEM

This is the system of Differential Pressure Indicating Controllers that measure the differential pressure of the air flow between the different exhaust HEPA filter stages. The DPIC system is interlocked to the Exhaust Fan (EF-1) and will shutdown the Exhaust Fan (EF-1) if a low differential pressure is measured.

TANK FARM PLANT OPERATIONS PROCEDURE

2.2 TERMS AND DEFINITIONS

- 2.2.1 CASS - Computer Automated Surveillance System
- 2.2.2 DCRT - Double Contained Receiver Tank
- 2.2.3 DPI - Differential Pressure Indicator
- 2.2.4 DPIC - Differential Pressure Indicating Controller
- 2.2.5 DOE - Department Of Energy
- 2.2.6 DOV - Diaphragm Operated Valve
- 2.2.7 EPC - Electro-Pneumatic Converter
- 2.2.8 FIC - Flow Indication Controller
- 2.2.9 HEPA - High Efficiency Particulate Air
- 2.2.10 HPT - Health Physics Technician
- 2.2.11 JCS PM/S - Job Control System Preventative
Maintenance/Surveillance
- 2.2.12 JHA - Job Hazards Analysis
- 2.2.13 LAM - Limit Alarm Meter
- 2.2.14 LDS - Leak Detection Station
- 2.2.15 LDE - Leak Detection Element
- 2.2.16 LL - Liquid Level
- 2.2.17 LLE - Liquid Level Element
- 2.2.18 MCC - Motor Control Center
- 2.2.19 MOV - Motor Operated Valve
- 2.2.20 MV - Manipulated Value
- 2.2.21 OTP - Operational Test Procedure
- 2.2.22 PI - Pressure Indicator
- 2.2.23 PRV - Pressure Regulating Valve
- 2.2.24 PS - Pressure Switch
- 2.2.25 RV - Relief Valve

TANK FARM PLANT OPERATIONS PROCEDURE

2.2 **TERMS AND DEFINITIONS** (Continued)

- 2.2.26 RW - Raw Water
- 2.2.27 RWP - Radiation Work Permit
- 2.2.28 SGT - Specific Gravty Iransmitter
- 2.2.29 SRV - Safety Relief Valve
- 2.2.30 SST - Single Shell Ianks
- 2.2.31 SV - Setpoint Value
- 2.2.32 TFO - Tank Farm Operations
- 2.2.33 TWRS - Tank Waste Remediation System
- 2.2.34 WFT - Weight Factor Iransmitter
- 2.2.35 WG - Water Gauge

2.3 **RESPONSIBILITIES**

- 2.3.1 The Maintenance craft personnel Aare responsible for:
 - Providing assistance during the test.
- 2.3.2 Quality Control (QC) is responsible for:
 - Verifying that the procedure sections were performed correctly.
- 2.3.3 HPT personnel are responsible for:
 - Conducting surveys of all equipment used during the transfer line leak detection testing.
 - Conducting surveys of all affected areas
- 2.3.4 Test Director
 - Provides the equipment found in step 4.1 of this procedure
 - Records equipment status and data per this procedure
 - Conducts a pre-job planning meeting.
 - Conducts a 244-U Facility and Equipment walkdown.

TANK FARM PLANT OPERATIONS PROCEDURE

2.4 REFERENCES

2.4.1 The following documents were used to write or are referenced in this procedure:

- WHC-CM-4-3, INDUSTRIAL SAFETY MANUAL, STANDARD A-3, "PRE-JOB SAFETY PLANNING/JOB SAFETY ANALYSIS," STANDARD E-2, "ELECTRICAL SAFETY PRACTICES"
- WHC-CM-6-1 EP 4.2., STANDARD ENGINEERING PRACTICE "TESTING PRACTICES"
- WHC-CM-6-1 APPX L, STANDARD ENGINEERING PRACTICES "OPERABILITY TEST PROCEDURES AND REPORTS"
- ARP-T-501-00001, RESPOND TO 241-U TANK FARM AND 244-U DCRT ALARMS
- H-2-73798, REV 3 ENGINEERING FLOW DIAGRAM, SYSTEM 3
- H-2-73800, REV 7 ENGINEERING FLOW DIAGRAM, SYSTEM 5
- H-2-73803, SH 3, REV 4, INSTRUMENTATION-REAR OF PANEL WIRING SYSTEM 3
- H-2-73815, SH 1, REV 3, INSTRUMENTATION-ANNUNCIATOR ARRGT AND WIRING
- H-2-73820, SH 1, REV 6, ELECTRICAL ONE-LINE & ELEM DIAG SYSTEM NO 3
- H-2-73811, SH 3, REV 0, INSTRUMENTATION-INTERCONNECTION DIAGRAM
- H-2-73823, SH 1, REV 7, ELECTRICAL LEAK DET HT TRACE & ANN ELEM DIAG-SYSTEM 3
- H-2-73823, SH 2, REV 0, ELECTRICAL LEAK DET HT TRACE & ANN ELEM DIAG-SYSTEM 3
- H-2-73825, SH 1, REV 6, ELECTRICAL PWR, INSTR, HT TRACE DISTR PLAN-SYSTEM 2
- H-2-73825, SH 3, REV 0, ELECTRICAL PWR, INSTR, HT TRACE DISTR PLAN-SYSTEM 2
- H-2-73826, SH 1, REV 7, ELECTRICAL PWR, INSTR, HT TRACE DISTR PLAN-SYSTEM 3
- H-2-73830, SH 2, REV 2, ELECTRICAL INSTR BLDG 244-U SYSTEM NO 3

2.5 SAFETY

Warning - Energized circuits and leads are contained inside the panel cabinet. Observe appropriate electrical precautions.

Warning - The circuit board is energized. Observe appropriate safety precautions.

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TANK FARM PLANT OPERATIONS PROCEDURE

2.5 SAFETY (Continued)

2.5.1 The following administrative procedures control work performed in this procedure:

- Industrial Safety Manual, WHC-CM-4-3, Vols 1-4
- Building Emergency Plan, WHC-IP-0263-TF
- Industrial Hygiene Manual, WHC-CM-4-40
- Tank Farm Health and Safety Plan (HASP), WHC-SD-WM-HSP-002

2.5.2 The test shall be STOPPED and the TFO Shift Manager immediately notified, if radiation levels significantly increase as determined by a Radiation Monitor.

2.6 RADIATION AND CONTAMINATION CONTROL

2.6.1 HPT assistance is required in accordance with RWP.

2.6.2 The following administrative procedures control work performed in this procedure:

- Hanford Site Radiological Control Manual (HSRCM), Rev. 2
- Industrial Safety Manual, WHC-CM-4-3, Vols 1-4

2.7 QUALITY ASSURANCE

2.7.1 Ensure that the test(s) are performed per procedure. The QC Inspector shall sign, date and stamp each procedure section authenticating the validity of the data obtained and verifying that the procedure section has been performed correctly.

2.8 GENERAL INFORMATION

2.8.1 Complete each procedure step in the given order, unless otherwise noted or as directed by the Test Director.

2.8.2 All entries recorded in this procedure shall be made in black ink.

2.8.3 Editorial changes required to this OTP may be made per the red line method by the Test Director and Cognizant Engineer as long as they do not impact operational facility safety function, or performance and will not compromise or influence the test data. Any changes affecting the above stated criteria shall be made in accordance with WHC-CM-6-1, *Standard Engineering Practices*, EP-2.2 Change Control.

TANK FARM PLANT OPERATIONS PROCEDURE

2.8 GENERAL INFORMATION (Continued)

- 2.8.4 Any non-conformance of the instrumentation or unexpected results during testing shall be logged and recorded in OTP EXCEPTION LOG.
- 2.8.5 Do not perform any part of this procedure on faulty equipment. If faulty equipment is discovered, STOP the execution of this procedure and resolve the problem.
- 2.8.6 If the performance of this procedure is suspended for any reason, ensure the requirements of the Lock and Tag System are met before leaving the test site.
- 2.8.7 This procedure DOES NOT contain any separate data/verification sheets. Verification of procedural steps and validity of the data is incorporated into the specific section.
- 2.8.8 The following interface areas exist:
- Hanford Fire Department
 - CASS
- 2.8.9 A JHA form will be used instead of the pre-job safety meeting form when any unusual hazards are identified. The PRE-JOB SAFETY MEETING FORM will be used with the JHA to document all attendees.

TANK FARM PLANT OPERATIONS PROCEDURE

3.0 RECORDS

- 3.1 The completed working copy of this procedure and all exception logs and exception records generated by this procedure, will be kept as permanent records.
- 3.2 In the event minor drawing changes are required to successfully complete this OTP, such as changing a relay contact from Normally Open (NO) to Normally Closed (NC), the change shall be noted and incorporated in an ECN after the completion of this OTP.

4.0 PREREQUISITES

- 4.1 The following supplies shall be available at the workplace:
- Voltohmmeter (VOM): Portable, 0-600 volts ac, $\pm 2\%$ accuracy.
Calibration No. _____ Expiration Date _____
 - Ammeter: Clamp-on, 0-3/6/15 amperes, $\pm 2\%$ accuracy.
Calibration No. _____ Expiration Date _____
 - Badger Water Meter
 - Portable Rotameter
 - Thermocouple Voltage Source (West Portable Potentiometer or equivalent).
Calibration No. _____ Expiration Date _____
 - Shorting Jumpers: 6 ea, #12 THWN, two feet long.
 - 0-400 in wg Manometer - MR-2
 - 0-40 in wg Manometer - MR-1
 - Shallow pan with water (6" diameter and 3" deep).
- 4.2 The following documents will be needed to perform this procedure:
- WHC-IP-0842, Section 5.9.1, LOCKOUT/TAGOUT
 - PCR-T-140-00013 "PROCESS INSTRUMENT CALIBRATION INTERVAL REQUIREMENTS"

TANK FARM PLANT OPERATIONS PROCEDURE

4.0 PREREQUISITES (Continued)

4.3 The following conditions must be met before this test may commence:

4.3.1 A pre-job safety meeting has been held before performing this procedure in accordance with WHC-IP-0842, Section 15.3, PRE-JOB SAFETY MEETING FORM.

Test Director

Date

4.3.2 Notify the Hanford Fire Department that the procedure is to be performed.

4.3.3 Notify CASS that the procedure is to be performed.

TANK FARM PLANT OPERATIONS PROCEDURE

4.0 PREREQUISITES (Continued)

NOTE - QC Inspector shall verify current calibration by inspecting calibration stickers on instruments in the field. In the event a sticker is missing or shows a device to be out of calibration, consult the JCS PM/S system for calibration verification.

4.3.4 QC Inspector shall verify the current calibration or check the functionality of the following instruments and, record the calibration due date or the functional check date on the table below.

INSTRUMENT	CALIBRATION DUE DATE	FUNCTIONAL CHECK DATE
SRV-244U-1		
PRV-244U-1		
PRV-244U-3		
PI-244U-1		
PI-244U-2		
PI-244U-3		
WFT-244-U-1		
SGT-244-U-1		
CVT-244-U-1		
CVT-244-U-2		
EPC-244-U-1		
EPC-244-U-2		
PS-244-U-1		

TANK FARM PLANT OPERATIONS PROCEDURE

4.0 PREREQUISITES (Continued)

NOTE - QC Inspector shall verify current calibration by inspecting calibration stickers on instruments in the field. In the event a sticker is missing or shows a device to be out of calibration, consult the JCS PM/S system for calibration verification.

4.3.5 QC Inspector shall verify the current calibration or check the functionality of the following instruments and, record the calibration due date or functional check date on the table below.

INSTRUMENT	CALIBRATION DUE DATE	FUNCTIONAL CHECK DATE
MR-244U-1 (RED)		
MR-244U-1 (BLUE)		
MR-244U-1 (PURPLE)		
MR-244U-1 (GREEN)		
MR-244U-1 (BROWN)		
MR-244U-1 (BLACK)		
DPI-244U-1		
DPI-244U-2		
DPIC-244U-3		
DPIC-244U-4		
DPIC-244U-5		
DPIC-244U-6		
DPIC-244U-7		
DPIC-244U-8		

TANK FARM PLANT OPERATIONS PROCEDURE

4.0 PREREQUISITES (Continued)

- 4.3.6 QC Inspector **SHALL VERIFY** that steps 4.3.4 and 4.3.5 are **COMPLETE** by **SIGNING** below.

QC Inspector Signature

Date

QC Stamp

- 4.3.7 Raw water must be AVAILABLE at 244-U DCRT.

- 4.3.8 Compressed air must be AVAILABLE at 244-U DCRT.

TANK FARM PLANT OPERATIONS PROCEDURE

5.0 PROCEDURE

5.1 LEAK DETECTION SYSTEM

5.1.1 POSITION the MCC 244-U Main DISCONNECT (located in 244-U Instrument Bldg, compartment A-5) to the CLOSED (ON) position.

☐

5.1.2 VERIFY that the Main DISCONNECT Bus, located on MCC 244-U Compartment A-5 in 244-U Instrument Bldg, is ENERGIZED.

☐

5.1.3 ENSURE that the Hanford Fire Department has been NOTIFIED of the performance of the 244-U OTP.

☐

5.1.4 VERIFY the following MCC 244-U DISCONNECT SWITCHES (located in 244-U Instrument Bldg) are OPEN (OFF).

DISCONNECT SWITCH	COMPARTMENT	ON	OFF
TRANSFER PUMP	A-1		
EXHAUST FAN	A-3		
SUMP PUMP	A-2		

5.1.5 PERFORM a Zero Energy Check on the Transfer Pump DISCONNECT SWITCH (located in MCC 244-U compartment A-1 in the 244-U Instrument Bldg).

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.6 UNPLUG the 244-U Pump Pit Transfer Pump (P-244-U-1).

☐

5.1.7 VERIFY that 244-U Flush Pit valve U-29, is CLOSED.

☐

NOTE - When DISCONNECT Switch CB-PNLBD-A is placed in the OPEN (OFF) position, the Fire Alarm is disabled. The Hanford Fire Department will respond to this condition (Fire Alarm disabled) unless they have had previous notification per step 5.1.3.

5.1.8 POSITION DISCONNECT Switch CB-PNLBD-A, found on MCC 244-U, compartment A-4R in 244-U Instrument Bldg, to the CLOSED (ON) position.

☐

5.1.9 PLACE a jumper across the LAM's low current interlock points TP-3A and TP-6, located in MCC 244-U, compartment A-1.

☐

5.1.10 PLACE a jumper across relay WFK-2, located in RELAY CONTROL 244-U panel in the 244-U Instrument Bldg, contacts TP-1B and TP-1C.

☐

5.1.11 POSITION the Transfer Pump DISCONNECT, located on MCC 244-U, compartment A-1 in 244-U Instrument Bldg, to the CLOSED (ON) position.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

WARNING

Energized circuits and leads are contained inside the panel cabinet.
Observe appropriate electrical precautions.

5.1.12 CLOSE the following circuit breakers, located on MCC 244-U,
compartment B-3, Panelboard A in 244-U Instrument Bldg:

5.1.12.1 Main Circuit Breaker

☐

5.1.12.2 Circuit Breaker #1

☐

5.1.12.3 Circuit Breaker #3

☐

5.1.12.4 Circuit Breaker #4

☐

5.1.12.5 Circuit Breaker #9

☐

5.1.12.6 Circuit Breaker #11

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.13 VERIFY the strobe lights are NOT FLASHING at the following Leak Detection Stations:

- PUMP PIT (LD-PP) ☐
- PUMP PIT (LL-PP) ☐
- FILTER PIT (LD-FTP) ☐
- FILTER PIT (LL-PP) ☐
- FLUSH PIT (LD-FLP) ☐
- FLUSH PIT (LL-FLP) ☐
- INSTRUMENT PIT (LD-INP) ☐
- INSTRUMENT PIT (LL-INP) ☐
- SUMP PIT (LD-SP) ☐
- TRANSFER LINE (LD TL-1) ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

WARNING

Energized circuits and leads are contained inside the panel cabinet.
Observe appropriate electrical precautions.

5.1.14 VERIFY that the following relays, located in the 244-U Instrument Bldg, are **ENERGIZED**:

RELAY	RELAY ENCLOSURE	ON	OFF
K-2	RELAY CONTROL 244-U		
K-5	RELAY CONTROL 244-U		
K-6	RELAY CONTROL 244-U		
K-7	RELAY CONTROL 244-U		
K-8	RELAY CONTROL 244-U		
K-9	RELAY CONTROL 244-U		
K-LS	RELAY CONTROL 244-U		
PK-1	RELAY CONTROL 244-U		

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.15 **VERIFY** the following conditions at the Pump Control Station (located on panel ANN-U in 244-U Instrument Bldg):

5.1.15.1 244-U RECEIVER TANK TRANSFER PUMP (MS-1) green STOP button indicating light is **ON**.

☐

5.1.15.2 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button indicating light is **OFF**.

☐

5.1.16 **PRESS** the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) START button (located on panel ANN-U in 244-U Instrument Bldg).

☐

5.1.17 **VERIFY** the following (at panel ANN-U in 244-U Instrument Bldg):

5.1.17.1 Transfer Pump red START indicating light is **ILLUMINATED (ON)**.

☐

5.1.17.2 Transfer Pump green START indicating light is **NOT ILLUMINATED (OFF)**.

☐

5.1.17.3 Relay K-6 is **ENERGIZED**.

☐

5.1.18 **DEPRESS AND HOLD** the Pump Pit LDS RESET button, simulating a Loss-Of-Power to LDE-PP, **WHILE PERFORMING** the following:

5.1.18.1 **VERIFY** that the Pump Pit LDS Strobe light (LD-PP) is **FLASHING**.

☐

5.1.18.2 **VERIFY** that relay K-8, Located in panel RELAY CONTROL 244-U in the 244-U Instrument Bldg, is **DE-ENERGIZED**.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.18.3 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.18.4 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.19 RELEASE the Pump Pit LDS RESET button. ☐
- 5.1.20 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.21 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.22 VERIFY that Pump Pit LDS Strobe Light (LD-PP) is NOT FLASHING (OFF). ☐
- 5.1.23 VERIFY that relay K-8, located in RELAY CONTROL 244-U in 244-U Instrument Bldg, is ENERGIZED. ☐
- 5.1.24 DEPRESS AND HOLD the Filter Pit LDS RESET button, simulating a Loss-Of-Power to LDE-FTP, WHILE PERFORMING the following:
- 5.1.24.1 VERIFY that the Filter Pit LDS Strobe light (LD-FTP) is FLASHING. ☐
- 5.1.24.2 VERIFY that relay K-8, Located in panel RELAY CONTROL 244-U in the 244-U Instrument Bldg, is DE-ENERGIZED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.24.3 **VERIFY** that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3A), located on panel ANN-U in the 244-U Instrument Bldg, has **ANNUNCIATED**. ☐
- 5.1.24.4 **VERIFY** that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3), located on panel ANN-271-U in 241-U-271, has **ANNUNCIATED**. ☐
- 5.1.25 **RELEASE** the Filter Pit LDS RESET button. ☐
- 5.1.26 **PRESS** the annunciator **ACKNOWLEDGE** button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.27 **PRESS** the annunciator **ACKNOWLEDGE** button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.28 **VERIFY** that Filter Pit LDS Strobe Light (LD-FTP) is **NOT FLASHING (OFF)**. ☐
- 5.1.29 **VERIFY** that relay K-8, located in panel RELAY CONTROL 244-U in 244-U Instrument Bldg, is **ENERGIZED**. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.30 DEPRESS AND HOLD the Sump Pit LDS RESET button, simulating a Loss-Of-Power to LDE-SP, WHILE PERFORMING the following:

5.1.30.1 VERIFY that the Sump Pit LDS Strobe light (LD-SP) is FLASHING.

☐

5.1.30.2 VERIFY that relay K-8, Located in panel RELAY CONTROL 244-U in the 244-U Instrument Bldg, is DE-ENERGIZED.

☐

5.1.30.3 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED.

☐

5.1.30.4 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED.

☐

5.1.31 RELEASE the Sump Pit LDS RESET button.

☐

5.1.32 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg.

☐

5.1.33 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271.

☐

5.1.34 VERIFY that Sump Pit LDS Strobe Light (LD-SP) is NOT FLASHING (OFF).

☐

5.1.35 VERIFY that relay K-8, located in panel RELAY CONTROL 244-U in 244-U Instrument Bldg, is ENERGIZED.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.36 DEPRESS AND HOLD the Flush Pit LDS RESET button, simulating a Loss-Of-Power to LDE-FLP, WHILE PERFORMING the following conditions:
- 5.1.36.1 VERIFY that the Flush Pit LDS Strobe light (LD-FLP) is FLASHING. ☐
- 5.1.36.2 VERIFY that relay K-8, Located in panel RELAY CONTROL 244-U in the 244-U Instrument Bldg, is DE-ENERGIZED. ☐
- 5.1.36.3 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.36.4 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.37 RELEASE the Flush Pit LDS RESET button. ☐
- 5.1.38 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.39 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.40 VERIFY that Flush Pit LDS Strobe Light (LD-FLP) is NOT FLASHING (OFF). ☐
- 5.1.41 VERIFY that relay K-8, located in panel RELAY CONTROL 244-U in 244-U Instrument Bldg, is ENERGIZED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.42 DEPRESS AND HOLD the Instrument Pit LDS RESET button, simulating a Loss-Of-Power to LDE-INP, WHILE PERFORMING the following:

5.1.42.1 VERIFY that the Instrument Pit LDS Strobe light (LD-INP) is FLASHING. ☐

5.1.42.2 VERIFY that relay K-8, Located in panel RELAY CONTROL 244-U in the 244-U Instrument Bldg, is DE-ENERGIZED. ☐

5.1.42.3 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐

5.1.42.4 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐

5.1.43 RELEASE the Instrument Pit LDS RESET button. ☐

5.1.44 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐

5.1.45 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐

5.1.46 VERIFY that Instrument Pit LDS Strobe Light (LD-INP) is NOT FLASHING (OFF). ☐

5.1.47 VERIFY that relay K-8, located in panel RELAY CONTROL 244-U in 244-U Instrument Bldg, is ENERGIZED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.48 DEPRESS AND HOLD the Transfer Line Enclosure LDS RESET button, simulating a Loss-Of-Power to LDE-TL-1, WHILE PERFORMING the following:
- 5.1.48.1 VERIFY that the Transfer Line Enclosure LDS Strobe light (LD TL-1) is FLASHING. ☐
- 5.1.48.2 VERIFY that relay K-8, Located in panel RELAY CONTROL 244-U in the 244-U Instrument Bldg, is DE-ENERGIZED. ☐
- 5.1.48.3 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.48.4 VERIFY that alarm LK DET SYS TBL-XFR LINE, PMP, FL, INSTR, FLTR, & SUMP PITS (LDA-3), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.49 RELEASE the Transfer Line Enclosure LDS RESET button. ☐
- 5.1.50 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.51 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.52 VERIFY that Transfer Line Enclosure LDS Strobe Light (LD TL-1) is NOT FLASHING (OFF). ☐
- 5.1.53 VERIFY that relay K-8, located in panel RELAY CONTROL 244-U in 244-U Instrument Bldg, is ENERGIZED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.54 **VERIFY** the following (at panel ANN-U in 244-U Instrument Bldg):

5.1.54.1 Transfer Pump red START indicating light is **ILLUMINATED (ON)**. ☐

5.1.54.2 Transfer Pump green STOP indicating light is **NOT ILLUMINATED (OFF)**. ☐

5.1.54.3 Relay K-6 is **ENERGIZED**. ☐

NOTE - The LLE and LDE in the 244-U Pump Pit are connected. Therefore, when the 244-U Pump Pit LLE is lifted up, the LDE will also be elevated.

5.1.55 **LIFT** the Pump Pit seal liquid loop level detectors (LLE-PP) located in the 244-U Pump Pit, **AND PERFORM** the following:

5.1.55.1 **VERIFY** Pump Pit LDS Strobe light (LL-PP) is **FLASHING**. ☐

5.1.55.2 **VERIFY** Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is **DE-ENERGIZED**. ☐

5.1.55.3 **VERIFY** that alarm LOW LEVEL DRAIN TRAP PUMP, FLUSH, INST & FILTER PITS (LLA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has **ANNUNCIATED**. ☐

5.1.55.4 **VERIFY** that alarm LO LVL-DR TRAP PMP, FL, INSTR & FLTR PITS (LLA-1), located on panel ANN-271-U in 241-U-271, has **ANNUNCIATED**. ☐

5.1.56 **PRESS** the annunciator **ACKNOWLEDGE** button, located on panel ANN-U in 244-U Instrument Bldg. ☐

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TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.57 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271.

☐

5.1.58 PLACE a dry pan UNDER the 244-U Pump Pit LDE (LDE-PP).

☐

5.1.59 IF required, ADD water to the seal loop trap.

☐

5.1.60 LOWER LLE-PP back into the Pump Pit seal loop trap, AND VERIFY the following:

5.1.60.1 244-U Pump Pit LDS Strobe light (LL-PP) is NOT FLASHING (OFF).

☐

5.1.60.2 Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED.

☐

5.1.60.3 244-U Pump Pit LDE (LDE-PP) has been LOWERED into the pan.

☐

5.1.61 ADD water to the pan that contains LDE-PP AND, PERFORM the following:

5.1.61.1 VERIFY that Pump Pit LDS Strobe light (LD-PP) is FLASHING.

☐

5.1.61.2 VERIFY that relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED.

☐

5.1.61.3 VERIFY that relay K-2, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.61.4 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) green STOP button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is ON. ☐
- 5.1.61.5 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is OFF. ☐
- 5.1.61.6 VERIFY that alarm TRANSFER PUMP SHUTDOWN (MSA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.61.7 VERIFY that alarm LEAK DETECTED TRANSFER LINE PUMP FLUSH INSTR & FILTER PITS (LDA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.61.8 VERIFY that alarm TRANSFER PUMP SHUTDOWN (MSA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.61.9 VERIFY that alarm LK DET'D-XFR LINE PMP FL, INSTR & FLTR PITS (LDA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.61.10 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.61.11 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.62 LIFT Pump Pit LLE (LLE-PP), REMOVE the pan of water from under LDE-PP. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.63 LOWER LLE-PP back into the Pump Pit seal loop trap. ☐
- 5.1.64 POUR water from the pan into the 244-U Pump Pit drain. ☐
- 5.1.65 PRESS the 244-U Pump Pit LDS RESET button. ☐
- 5.1.66 PRESS the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) START button, located on ANN-U in 244-U, AND VERIFY the following:
- 5.1.66.1 Pump Pit LDS Strobe light (LD-PP) is NOT FLASHING (OFF). ☐
- 5.1.66.2 Relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED. ☐
- 5.1.66.3 Relay K-2, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED. ☐
- 5.1.66.4 VERIFY that 244-U RECEIVER TANK TRANSFER PUMP (MS-1), located on panel ANN-U in the 244-U Instrument Bldg, red START button is ILLUMINATED. ☐
- 5.1.67 PRESS the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) green STOP button, located on the ANN-U panel in 244-U Instrument Bldg. ☐
- 5.1.68 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) green STOP button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is ON. ☐
- 5.1.69 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is OFF. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.70 PRESS the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button (located on panel ANN-U in 244-U Instrument Bldg). ☐
- 5.1.71 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is ILLUMINATED. ☐
- NOTE - The LLE and LDE in the 244-U Flush Pit are connected. Therefore, when the 244-U Flush Pit LLE is lifted up, the LDE will also be elevated.
- 5.1.72 LIFT the Flush Pit seal loop liquid level detectors (LLE-FLP) located in the 244-U Flush Pit, AND PERFORM the following:
- 5.1.72.1 VERIFY Flush Pit LDS Strobe light (LL-FLP) is FLASHING. ☐
- 5.1.72.2 VERIFY Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED. ☐
- 5.1.72.3 VERIFY that alarm LOW LEVEL DRAIN TRAP PUMP, FLUSH, INST & FILTER PITS (LLA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.72.4 VERIFY that alarm LO LVL-DR TRAP PMP, FL, INSTR & FLTR PITS (LLA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.73 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.74 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.75 PLACE a dry pan UNDER the 244-U Flush Pit LDE (LDE-FLP).

☐

5.1.76 IF required, ADD water to the seal loop trap.

☐

5.1.77 LOWER LLE-FLP back into the Flush Pit seal loop trap, AND VERIFY the following:

5.1.77.1 Flush Pit LDS Strobe light (LL-FLP) is NOT FLASHING (OFF).

☐

5.1.77.2 Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED.

☐

5.1.77.3 244-U Flush Pit LDE (LDE-FLP) has been LOWERED into the pan.

☐

5.1.78 ADD water to the pan containing LDE-FLP AND, PERFORM the following:

5.1.78.1 VERIFY that Flush Pit LDS Strobe light (LD-FLP) is FLASHING.

☐

5.1.78.2 VERIFY that relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED.

☐

5.1.78.3 VERIFY that relay K-5, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED.

☐

5.1.78.4 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) green STOP button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is ON.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.78.5 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is OFF. ☐
- 5.1.78.6 VERIFY that alarm TRANSFER PUMP SHUTDOWN (MSA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.78.7 VERIFY that alarm LEAK DETECTED TRANSFER LINE PUMP FLUSH INSTR & FILTER PITS (LDA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.78.8 VERIFY that alarm TRANSFER PUMP SHUTDOWN (MSA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.78.9 VERIFY that alarm LK DET'D-XFR LINE PMP FL, INSTR & FLTR PITS (LDA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.78.10 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.78.11 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.79 LIFT Flush Pit LLE (LLE-FLP), REMOVE the pan of water from under LDE-FLP. ☐
- 5.1.80 LOWER LLE-FLP back into the 244-U Flush Pit seal loop trap. ☐
- 5.1.81 POUR water from the pan into the 244-U Flush Pit drain. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.82 PRESS the Flush Pit LDS RESET button.

☐

5.1.83 PRESS the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) START button, located on ANN-U in 244-U, AND VERIFY the following:

5.1.83.1 Flush Pit LDS Strobe light (LD-FLP) is NOT FLASHING (OFF).

☐

5.1.83.2 Relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED.

☐

5.1.83.3 Relay K-5, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED.

☐

5.1.83.4 VERIFY that 244-U RECEIVER TANK TRANSFER PUMP (MS-1), located on panel ANN-U in the 244-U Instrument Bldg, red START button is ILLUMINATED.

☐

5.1.84 REMOVE Transfer Line LDE (LDE-TL-1) from the 244-U Transfer Line Enclosure.

☐

5.1.85 PLACE LDE-TL-1 in a shallow pan of water AND, PERFORM the following:

5.1.85.1 VERIFY that Transfer Line Enclosure LDS Strobe light (LD TL-1) is FLASHING.

☐

5.1.85.2 VERIFY that relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED.

☐

5.1.85.3 VERIFY that relay K-7, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.85.4 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) green STOP button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is ON. ☐
- 5.1.85.5 VERIFY 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button, located on panel ANN-U in the 244-U Instrument Bldg, indicating light is OFF. ☐
- 5.1.85.6 VERIFY that alarm TRANSFER PUMP SHUTDOWN (MSA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.85.7 VERIFY that alarm LEAK DETECTED TRANSFER LINE PUMP FLUSH INSTR & FILTER PITS (LDA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.85.8 VERIFY that alarm TRANSFER PUMP SHUTDOWN (MSA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.85.9 VERIFY that alarm LK DET'D-XFR LINE PMP FL, INSTR & FLTR PITS (LDA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.85.10 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.85.11 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.86 REMOVE Transfer Line LDE (LDE-TL-1) from the pan of water. ☐
- 5.1.87 PRESS the Transfer Line LDS RESET button. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.88 PRESS the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) START button, located on ANN-U in 244-U Instrument Bldg, AND VERIFY the following:

5.1.88.1 Transfer Line Enclosure LDS Strobe light (LD TL-1) is NOT FLASHING (OFF). ☐

5.1.88.2 Relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED. ☐

5.1.88.3 Relay K-7, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED. ☐

5.1.88.4 VERIFY that 244-U RECEIVER TANK TRANSFER PUMP (MS-1), located on panel ANN-U in the 244-U Instrument Bldg, red START button is ILLUMINATED. ☐

5.1.89 REMOVE Sump Pit LDE (LDE-SP) from the 244-U Sump Pit. ☐

5.1.90 PLACE LDE-SP in a shallow pan of water AND, PERFORM the following:

5.1.90.1 VERIFY that Sump Pit LDS Strobe light (LD-SP) is FLASHING. ☐

5.1.90.2 VERIFY that relay K-1, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED. ☐

5.1.90.3 VERIFY that alarm LEAK DETECTED SUMP PIT (LDA-2A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.90.4 **VERIFY** that alarm LEAK DETECTED SUMP PIT (LDA-2), located on panel ANN-271-U in 241-U-271, has **ANNUNCIATED**. ☐
- 5.1.90.5 **PRESS** the annunciator **ACKNOWLEDGE** button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.90.6 **PRESS** the annunciator **ACKNOWLEDGE** button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.91 **REMOVE** Sump Pit LDE (LDE-SP) from the pan of water. ☐
- 5.1.92 **PRESS** the Sump Pit LDS **RESET** button. ☐
- 5.1.93 **VERIFY** Sump Pit LDS Strobe light (LD-SP) is **NOT FLASHING (OFF)**. ☐
- 5.1.94 **VERIFY** Relay K-1, located in panel RELAY CONTROL 244-U in the 244-U Instrument Bldg, is **ENERGIZED**. ☐
- 5.1.95 **PRESS** the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) **STOP** button, located on the ANN-U panel in 244-U Instrument Bldg. ☐
- 5.1.96 **VERIFY** that the voltage on the Transfer Pump receptacle wires (TP-T1, TP-T2 and TP-T3) is zero (0) volts. ☐
- 5.1.97 **RECONNECT** the P-244-U-1 Transfer Pump to the power receptacle found in the 244-U Pump Pit. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

NOTE - The LLE and LDE in the 244-U Filter Pit are connected. Therefore, when the 244-U Filter Pit LLE is lifted up, the LDE will also be elevated.

5.1.98 LIFT the Filter Pit seal loop liquid level detector (LLE-FTP) located in the 244-U Filter Pit, AND PERFORM the following:

5.1.98.1 VERIFY Filter Pit LDS Strobe light (LL-FTP) is FLASHING. ☐

5.1.98.2 VERIFY Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED. ☐

5.1.98.3 VERIFY that alarm LOW LEVEL DRAIN TRAP PUMP, FLUSH, INST & FILTER PITS (LLA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐

5.1.98.4 VERIFY that alarm LO LVL-DR TRAP PMP, FL, INSTR & FLTR PITS (LLA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐

5.1.99 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐

5.1.100 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐

5.1.101 PLACE a dry pan UNDER the 244-U Filter Pit LDE (LDE-FTP). ☐

5.1.102 IF required, ADD water to the seal loop trap. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.103 LOWER LLE-FTP back into the Filter Pit seal loop trap, AND VERIFY the following:

5.1.103.1 Filter Pit LDS Strobe light (LL-FTP) is NOT FLASHING (OFF). ☐

5.1.103.2 Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED. ☐

5.1.103.3 244-U Filter Pit LDE (LDE-FTP) has been LOWERED into the pan. ☐

5.1.104 ADD water to the pan containing LDE-FTP AND, PERFORM the following:

5.1.104.1 VERIFY that Filter Pit LDS Strobe light (LD-FTP) is FLASHING. ☐

5.1.104.2 VERIFY that relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED. ☐

5.1.104.3 VERIFY that alarm LEAK DETECTED TRANSFER LINE PUMP FLUSH INSTR & FILTER PITS (LDA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐

5.1.104.4 VERIFY that alarm LK DET'D-XFR LINE PMP FL, INSTR & FLTR PITS (LDA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐

5.1.104.5 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐

5.1.104.6 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐

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TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.105 LIFT Filter Pit LLE (LLE-FTP), REMOVE the pan of water from under LDE-FTP. ☐

5.1.106 LOWER LLE-FTP back into the 244-U Filter Pit seal loop trap. ☐

5.1.107 POUR water from the pan into the 244-U Filter Pit drain. ☐

5.1.108 PRESS the Filter Pit RESET button, located on the Filter Pit LDS, AND VERIFY the following:

5.1.108.1 Filter Pit LDS Strobe light (LD-FTP) is NOT FLASHING (OFF). ☐

5.1.108.2 Relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED. ☐

NOTE - The LLE and LDE in the 244-U Instrument Pit are connected. Therefore, when the 244-U Instrument Pit LLE is lifted up, the LDE will also be elevated.

5.1.109 LIFT the Instrument Pit seal loop liquid level detector (LLE-INP) located in the 244-U Instrument Pit, AND VERIFY the following:

5.1.109.1 Instrument Pit LDS Strobe light (LL-INP) is FLASHING. ☐

5.1.109.2 Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED. ☐

5.1.109.3 Alarm LOW LEVEL DRAIN TRAP PUMP, FLUSH, INST & FILTER PITS (LLA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.109.4 Alarm LO LVL-DR TRAP PMP, FL, INSTR & FLTR PITS (LLA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED.

☐

5.1.110 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg.

☐

5.1.111 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271.

☐

5.1.112 PLACE a dry pan UNDER the 244-U Instrument Pit LDE (LDE-INP).

☐

5.1.113 IF required, ADD water to the seal loop trap.

☐

5.1.114 LOWER LLE-INP back into the Instrument Pit seal loop trap, AND VERIFY the following:

5.1.114.1 Instrument Pit LDS Strobe light (LL-INP) is NOT FLASHING (OFF).

☐

5.1.114.2 Relay K-9, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED.

☐

5.1.114.3 244-U Instrument Pit LDE (LDE-INP) has been LOWERED into the pan.

☐

5.1.115 ADD water to the pan containing LDE-INP AND, PERFORM the following:

5.1.115.1 VERIFY that Instrument Pit LDS Strobe light (LD-INP) is FLASHING.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

- 5.1.115.2 VERIFY that relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED. ☐
- 5.1.115.3 VERIFY that alarm LEAK DETECTED TRANSFER LINE PUMP FLUSH INSTR & FILTER PITS (LDA-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.1.115.4 VERIFY that alarm LK DET'D-XFR LINE PMP FL, INSTR & FLTR PITS (LDA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.1.116 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.1.117 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.1.118 LIFT Instrument Pit LLE (LLE-INP), REMOVE the pan of water from under LDE-INP. ☐
- 5.1.119 PRESS the Instrument Pit RESET button, located on the Instrument Pit LDS, AND VERIFY the following:
- 5.1.119.1 Instrument Pit LDS Strobe light (LD-INP) is NOT FLASHING (OFF). ☐
- 5.1.119.2 Relay K-6, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is ENERGIZED. ☐
- 5.1.120 LOWER LLE-FTP back into the 244-U Instrument Pit seal loop trap. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.1 LEAK DETECTION SYSTEM (Continued)

5.1.121 POUR water from the pan into the 244-U Filter Pit drain. ☐

5.1.122 REMOVE the jumper on the LAM LO current interlock points, TP-3A and TP-6, located in MCC 244-U, compartment A-1 in 244-U Instrument Bldg. ☐

5.1.123 REMOVE the jumper across relay WFK-2, located in RELAY CONTROL 244-U panel in the 244-U Instrument Bldg, contacts TP-1B and TP-1C. ☐

5.1.124 Test Director SHALL VERIFY that section 5.1 is COMPLETE by SIGNING below.

Test Director Signature

Date

5.1.125 QC Inspector SHALL VERIFY that section 5.1 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM

- 5.2.1 **VERIFY** that the 244-U DCRT Heat Trace system is configured as found in Figure 1.

WARNING

Energized circuits and leads are contained inside the panel cabinet. Observe appropriate electrical precautions.

- 5.2.2 **CLOSE** 244-U Instrument Bldg circuit breaker #5 located on MCC 244-U in compartment B-3 (Panelboard A) in 244-U Instrument Bldg.

- 5.2.3 **VERIFY** the following Heat Trace responses:

HEAT TRACE SELECTOR SWITCH POSITION	LO SET						HIGH SET					
TRANSFER LINES	SN-264		SN-265		SN-266		SN-264		SN-265		SN-266	
ANALOG PANEL TEMPERATURE READING												
WITHIN ACCEPTABLE LO SET RANGE OF 50°F ± 5°F (✓)	YES	NO	YES	NO	YES	NO						
WITHIN ACCEPTABLE HI SET RANGE OF 180°F ± 5°F (✓)							YES	NO	YES	NO	YES	NO

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

5.2.4 VERIFY the following Heat Trace responses:

HEAT TRACE SELECTOR SWITCH POSITION	PC (PROCESS)		
	SN-264	SN-265	SN-266
TRANSFER LINES			
ANALOG PANEL TEMPERATURE READING			

- 5.2.5 REMOVE Thermocouple Overtemp leads, 264-1 and 264-2, from Limit Alarm 264 connections 9 and 11. ☐
- 5.2.6 CONNECT Thermocouple Voltage Source to Limit Alarm 264, connections 9 and 11, to SIMULATE thermocouple input. ☐
- 5.2.7 INSTALL clamp-on ammeter on line 264-A1. ☐
- 5.2.8 SIMULATE a process setpoint temperature by SETTING the Thermocouple Voltage Source to a value that is EQUIVALENT to a temperature of 150°F. ☐
- 5.2.9 VERIFY that the Heat Trace System and Instrument Panel are ON. ☐
- 5.2.10 LOWER Thermocouple Voltage Source UNTIL Alarm UNDER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-1A), located on panel ANN-U in 244-U, ANNUNCIATES. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

5.2.11 VERIFY Alarm UNDER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED.

☐

5.2.12 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 50°F ± 10°F (✓)	
		YES	NO
SN-264			

5.2.13 PRESS the panel ANN-U ACKNOWLEDGE button (located in 244-U Instrument Bldg).

☐

5.2.14 PRESS the panel ANN-271-U ACKNOWLEDGE button (located in 241-U-271).

☐

5.2.15 RAISE Thermocouple Voltage Source UNTIL Alarm OVER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-2A), located on panel ANN-U in 244-U, ANNUNCIATES.

☐

5.2.16 VERIFY Alarm OVER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-2), located on panel ANN-U-271 in 241-U-271, has ANNUNCIATED.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

5.2.17 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 180°F ± 10°F (✓)	
		YES	NO
SN-264			

5.2.18 PRESS the panel ANN-U ACKNOWLEDGE button (located in 244-U Instrument Bldg).

☐

5.2.19 PRESS the panel ANN-271-U ACKNOWLEDGE button (located in 241-U-271).

☐

5.2.20 VERIFY that the output amperage to the Heat Trace is zero.

☐

5.2.21 DISCONNECT the Thermocouple Voltage Source.

☐

5.2.22 REINSTALL the Thermocouple Overtemp leads, 264-1 and 264-2, to Limit Alarm 264 connections 9 and 11.

☐

5.2.23 REMOVE Thermocouple Control leads, 264-3 and 264-4, from Controller 264 connections 4 and 5.

☐

5.2.24 CONNECT Thermocouple Voltage Source to Controller 264 connections 4 and 5 AND SIMULATE a temperature of 100°F.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

- 5.2.25 RECORD the Heat Trace voltage and Heat Trace current AND; ALSO, VERIFY that voltage divided by the current is within the acceptable range.

TRANSFER LINE	HEAT TRACE VOLTAGE	HEAT TRACE CURRENT	VOLTAGE/CURRENT	WITHIN ACCEPTABLE RANGE OF 72 ± 15 (✓)	
				YES	NO
SN-264					

- 5.2.26 RAISE Thermocouple Voltage Source UNTIL the ammeter indicates zero.

☐

- 5.2.27 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF $150^{\circ}\text{F} \pm 10^{\circ}\text{F}$ (✓)	
		YES	NO
SN-264			

- 5.2.28 DISCONNECT the Thermocouple Voltage Source.

☐

- 5.2.29 REINSTALL the Thermocouple Control leads, 264-3 and 264-4, to Controller 264 connections 4 and 5.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

- 5.2.30 REMOVE the clamp-on ammeter from line 264-A1. ☐
- 5.2.31 INSTALL the clamp-on ammeter on line 265-A1. ☐
- 5.2.32 REMOVE Thermocouple Overtemp leads, 265-1 and 265-2, from Limit Alarm 265 connections 9 and 11. ☐
- 5.2.33 CONNECT Thermocouple Voltage Source to Limit Alarm 265, connections 9 and 11, to SIMULATE thermocouple input. ☐
- 5.2.34 SIMULATE a process setpoint temperature by SETTING the Thermocouple Voltage Source to a value that is EQUIVALENT to a temperature of 150°F. ☐
- 5.2.35 VERIFY that the Heat Trace System and Instrument Panel are ON. ☐
- 5.2.36 LOWER Thermocouple Voltage Source UNTIL Alarm UNDER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-1A), located on panel ANN-U in 244-U Instrument Bldg, ANNUNCIATES. ☐
- 5.2.37 VERIFY Alarm UNDER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

- 5.2.38 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 50°F ± 10°F (✓)	
		YES	NO
SN-265			

- 5.2.39 PRESS the panel ANN-271-U ACKNOWLEDGE button (located in 241-U-271).

☐

- 5.2.40 PRESS the panel ANN-U ACKNOWLEDGE button (located in 244-U Instrument Bldg).

☐

- 5.2.41 RAISE Thermocouple Voltage Source UNTIL Alarm OVER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-2A), located on panel ANN-U in 244-U Instrument Bldg, ANNUNCIATES.

☐

- 5.2.42 VERIFY Alarm OVER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-2), located on panel ANN-U-271 in 241-U-271, has ANNUNCIATED.

☐

- 5.2.43 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 180°F ± 10°F (✓)	
		YES	NO
SN-265			

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

- 5.2.44 PRESS the panel ANN-U ACKNOWLEDGE button (located in 244-U Instrument Bldg). ☐
- 5.2.45 PRESS the panel ANN-271-U ACKNOWLEDGE button (located in 241-U-271). ☐
- 5.2.46 VERIFY that the output amperage to the Heat Trace is zero. ☐
- 5.2.47 DISCONNECT the Thermocouple Voltage Source. ☐
- 5.2.48 REINSTALL the Thermocouple Overtemp leads, 265-1 and 265-2, to Limit Alarm 265 connections 9 and 11. ☐
- 5.2.49 REMOVE Thermocouple Control leads, 265-3 and 265-4, from Controller 265 connections 4 and 5. ☐
- 5.2.50 CONNECT Thermocouple Voltage Source to Controller 265 connections 4 and 5 AND SIMULATE a temperature of 100°F. ☐
- 5.2.51 RECORD the Heat Trace voltage and Heat Trace current AND; ALSO, VERIFY that voltage divided by the current is within the acceptable range.

TRANSFER LINE	HEAT TRACE VOLTAGE	HEAT TRACE CURRENT	VOLTAGE/CURRENT	WITHIN ACCEPTABLE RANGE OF 72 ± 15 (✓)	
				YES	NO
SN-265					

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

5.2.52 RAISE Thermocouple Voltage Source UNTIL the ammeter indicates zero.

☐

5.2.53 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 150°F ± 10°F (✓)	
		YES	NO
SN-265			

5.2.54 DISCONNECT the Thermocouple Voltage Source.

☐

5.2.55 REINSTALL the Thermocouple Control leads, 265-3 and 265-4, to Controller 265 connections 4 and 5.

☐

5.2.56 REMOVE the clamp-on ammeter from line 265-A1.

☐

5.2.57 INSTALL the clamp-on ammeter on line 266-A1.

☐

5.2.58 REMOVE Thermocouple Overtemp leads, 266-1 and 266-2, from Limit Alarm 266 connections 9 and 11.

☐

5.2.59 CONNECT Thermocouple Voltage Source to Limit Alarm 266, connections 9 and 11, to SIMULATE thermocouple input.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

- 5.2.60 SIMULATE a process setpoint temperature by SETTING the Thermocouple Voltage Source to a value that is EQUIVALENT to a temperature of 150°F. ☐
- 5.2.61 VERIFY that the Heat Trace System and Instrument Panel are ON. ☐
- 5.2.62 LOWER Thermocouple Voltage Source UNTIL Alarm UNDER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-1A), located on panel ANN-U in 244-U Instrument Bldg, ANNUNCIATES. ☐
- 5.2.63 VERIFY Alarm UNDER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.2.64 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range. ☐

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 50°F ± 10°F (✓)	
		YES	NO
SN-266			

- 5.2.65 PRESS the panel ANN-U ACKNOWLEDGE button (located in 244-U Instrument Bldg). ☐
- 5.2.66 PRESS the panel ANN-271-U ACKNOWLEDGE button (located in 241-U-271). ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

5.2.67 RAISE Thermocouple Voltage Source UNTIL Alarm OVER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-2A), located on panel ANN-U in 244-U Instrument Bldg, ANNUNCIATES. ☐

5.2.68 VERIFY Alarm OVER TEMPERATURE SUPERNATANT LINES HEAT TRACE (HTA-2), located on panel ANN-U-271 in 241-U-271, has ANNUNCIATED. ☐

5.2.69 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 180°F ± 10°F (✓)	
		YES	NO
SN-266			

5.2.70 PRESS the panel ANN-U ACKNOWLEDGE button (located in 244-U Instrument Bldg). ☐

5.2.71 VERIFY that the output amperage to the Heat Trace is zero. ☐

5.2.72 DISCONNECT the Thermocouple Voltage Source. ☐

5.2.73 REINSTALL the Thermocouple Overtemp leads, 266-1 and 266-2, to Limit Alarm 266 connections 9 and 11. ☐

5.2.74 REMOVE Thermocouple Control leads, 266-3 and 266-4, from Controller 266 connections 4 and 5. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

5.2.75 CONNECT Thermocouple Voltage Source to Controller 266 connections 4 and 5 AND SIMULATE a temperature of 100°F. ☐

5.2.76 RECORD the Heat Trace voltage and Heat Trace current AND; ALSO, VERIFY that voltage divided by the current is within the acceptable range.

TRANSFER LINE	HEAT TRACE VOLTAGE	HEAT TRACE CURRENT	VOLTAGE/CURRENT	WITHIN ACCEPTABLE RANGE OF 72 ± 15 (✓)	
				YES	NO
SN-266					

5.2.77 RAISE Thermocouple Voltage Source UNTIL the ammeter indicates zero. ☐

5.2.78 RECORD the equivalent temperature AND VERIFY that the temperature is within the acceptable range.

TRANSFER LINE	HEAT TRACE EQUIVALENT TEMPERATURE	WITHIN ACCEPTABLE RANGE OF $150^{\circ}\text{F} \pm 10^{\circ}\text{F}$ (✓)	
		YES	NO
SN-266			

5.2.79 DISCONNECT the Thermocouple Voltage Source. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

5.2.80 REINSTALL the Thermocouple Control leads, 266-3 and 266-4, to Controller 266 connections 4 and 5.

☐

5.2.81 REMOVE the clamp-on ammeter from line 266-A1.

☐

5.2.82 OPERATE the Heat Trace System for a minimum of eight (8) hours.

☐

5.2.83 AFTER eight (8) hours has elapsed, PLACE the SN-264, SN-265 and SN-266 Heat Trace Analog Panel Meter Switches to the PC (process) position.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.2 HEAT TRACE SYSTEM (Continued)

- 5.2.84 RECORD the Analog Panel Meter temperatures AND, VERIFY that the observed temperatures are within the acceptable range.

TRANSFER LINE	HEAT TRACE ANALOG PANEL METER TEMPERATURE	WITHIN ACCEPTABLE RANGE OF 150°F ± 10°F (✓)	
		YES	NO
SN-264			
SN-265			
SN-266			

- 5.2.85 IF the temperatures obtained in 5.2.84 ARE NOT acceptable, VERIFY that the Heat Trace is warm AND/OR is RECEIVING a current.

- 5.2.86 Test Director SHALL VERIFY that section 5.2 is COMPLETE by SIGNING below.

Test Director Signature

Date

- 5.2.87 QC Inspector SHALL VERIFY that section 5.2 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.3 VESSEL TEMPERATURE MEASUREMENT SYSTEM

WARNING

Energized circuits and leads are contained inside the panel cabinet.
Observe appropriate electrical precautions.

- 5.3.1 REMOVE the 244-U vessel thermocouple leads (TE-244-U-1(-) and TE-244-U-1(+)) on Temperature Transmitter TT-244-U-1, located on the 244-U TRANSMITTER\CONVERTER RACK in the 244-U Instrument Bldg. ☐
- 5.3.2 CONNECT the Thermocouple Voltage Source to the Temperature Transmitter (TT-244-U-1), located on the 244-U TRANSMITTER\CONVERTER RACK in the 244-U Instrument Bldg. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.3 VESSEL TEMPERATURE MEASUREMENT SYSTEM (Continued)

NOTE - The Yokogawa μ R1000 Strip Chart Recorder (located on panel ANN-U in 244-U Instrument Bldg) records data on six channels. Specifically, TR-244U-1 data is recorded on channel six (black pen) of the Yokogawa μ R1000.

5.3.3 SET the Thermocouple Voltage Source to an Equivalent Temperatures (by inputting a Thermocouple voltage) AND, RECORD the responses OBTAINED from Temperature Recorder TR-244U-1 (located on panel ANN-U in 244-U Instrument Bldg):

% RANGE	THERMOCOUPLE VOLTAGE SOURCE INPUT (mV)	EQUIVALENT TEMPERATURE (°F)	TEMPERATURE RECORDER (TR-244-U-1)	WITHIN ACCEPTABLE RANGE(%) (✓)	
				YES	NO
0	0	32		0 $\pm$ 2	
25	1.81	86		25 $\pm$ 2	
50	3.62	138		50 $\pm$ 2	
75	5.44	188		75 $\pm$ 2	
100	7.25	237		100 $\pm$ 2	

TANK FARM PLANT OPERATIONS PROCEDURE

5.3 VESSEL TEMPERATURE MEASUREMENT SYSTEM (Continued)

- 5.3.4 REMOVE the Thermocouple Voltage Source from the Temperature Transmitter (TT-244-U-1), located on the 244-U TRANSMITTER\CONVERTER RACK in the 244-U Instrument Bldg.

☐

- 5.3.5 RECONNECT the Vessel Thermocouple leads (TE-244-U-1(-) and TE-244-U-1(+)) to the Temperature Transmitter (TT-244-U-1), located on the 244-U TRANSMITTER\CONVERTER RACK in the 244-U Instrument Bldg.

☐

- 5.3.6 Test Director SHALL VERIFY that section 5.3 is COMPLETE by SIGNING below.

Test Director Signature

Date

- 5.3.7 QC Inspector SHALL VERIFY that section 5.3 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.4 DIP TUBE SYSTEM

5.4.1 VERIFY Dip Tube System has been configured per Figure 2.

☐

5.4.2 ENSURE that the following valves are CLOSED (located in the 244-U Instrument Bldg on the TRANSMITTER/CONVERTER RACK):

• RW-1

☐

• RW-3

☐

• RW-4

☐

• RW-5

☐

• RW-6

☐

• RW-7

☐

• RW-8

☐

• RW-9

☐

• RW-10

☐

• RW-11

☐

• RW-12

☐

• RW-13

☐

• RW-14

☐

• RW-16

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.4 DIP TUBE SYSTEM (Continued)

5.4.3 IF the 244-U water source is to be utilized, OPEN the following valves (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

• RW-1

☐

• RW-6

☐

• RW-8

☐

• RW-9

☐

• RW-11

☐

• RW-13

☐

5.4.4 IF Water Truck is to be utilized, PERFORM the following:

5.4.4.1 CONNECT a flexible water hose from the Water Truck to 244-U Instrument Bldg HC-1.

☐

5.4.4.2 OPEN the Water Truck water supply valve.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.4 DIP TUBE SYSTEM (Continued)

5.4.4.3 OPEN the following valves (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

• RW-4

☐

• RW-6

☐

• RW-8

☐

• RW-9

☐

• RW-11

☐

• RW-13

☐

5.4.5 SLOWLY OPEN valve RW-5 AND OBSERVE pressure rise on pressure gauge PI-1 (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK).

☐

5.4.6 CLOSE the following valves (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

• RW-5

☐

• BV-1

☐

• BV-2

☐

• BV-3

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.4 DIP TUBE SYSTEM (Continued)

5.4.7 OPEN valve RW-5 (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK).

☐

5.4.8 OPEN valves RW-10 and RW-12 one half turn.

☐

5.4.9 OBSERVE sight glasses GF-1 and GF-2 AND VERIFY that droplets of water can be seen DRIPPING through the sight glasses.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.4 DIP TUBE SYSTEM (Continued)

5.4.10 DETERMINE AND RECORD (on the table below) the specific data by PERFORMING the following:

5.4.10.1 ADJUST valves RW-10 and RW-12 to obtain the specific flow rate.

5.4.10.2 COUNT the number of drops over a 10 second time period.

5.4.10.3 CALCULATE the flow rate (NUMBER OF DROPS/10 SEC).

5.4.10.4 VERIFY that the calculated flow rate is within the acceptable limit.

ADJUSTED FLOW RATE	2 ± 1 DROP/SEC			
SIGHT GLASSES	GF-1		GF-2	
NUMBER OF DROPS DURING TEN SECONDS				
CALCULATED FLOW RATE (NUMBER OF DROPS/10 SECONDS)				
CALCULATED FLOW RATE WITHIN ACCEPTABLE RANGE OF 2 ± 1 DROP/SEC (✓)	YES	NO	YES	NO

TANK FARM PLANT OPERATIONS PROCEDURE

5.4 DIP TUBE SYSTEM (Continued)

5.4.11 CLOSE the following valves (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

• RW-1

☐

• RW-5

☐

• RW-6

☐

• RW-8

☐

• RW-9

☐

• RW-10

☐

• RW-11

☐

• RW-12

☐

• RW-13

☐

5.4.12 IF the water truck was utilized to supply water to 244-U DCRT THEN, CLOSE valve RW-4 (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

☐

5.4.13 VERIFY valve (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK) RW-7 is CLOSED.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.4 DIP TUBE SYSTEM (Continued)

5.4.14 Test Director SHALL VERIFY that section 5.4 is COMPLETE by SIGNING below.

Test Director Signature

Date

5.4.15 QC Inspector SHALL VERIFY that section 5.4 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.5 INSTRUMENT AIR SYSTEM

5.5.1 VERIFY that the following valves (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK) are **CLOSED** (see Figure 3):

• GV-1

☐

• GV-2

☐

• GV-3

☐

• BV-4

☐

• BV-11

☐

• BV-13

☐

• BV-14

☐

• BV-15

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.5 INSTRUMENT AIR SYSTEM (Continued)

5.5.2 OPEN the following valves (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

• BV-1

☐

• BV-2

☐

• BV-3

☐

• BV-5

☐

• BV-6

☐

• BV-7

☐

• BV-10

☐

5.5.3 SLOWLY OPEN valve (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK) GV-2.

☐

5.5.4 OBSERVE pressure gauge PI-3 AND, VERIFY that PRV-3 has been ADJUSTED to 20 ± 1 psig.

☐

5.5.5 ADJUST DPR-1 to 1.5 CFM AND, INSPECT rotameter (FI-3), located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK, for a constant flow (ball remains at a steady position).

☐

5.5.6 ADJUST DPR-2 to 1.5 CFM AND, INSPECT rotameter (FI-2), located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK, for a constant flow (ball remains at a steady position).

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.5 INSTRUMENT AIR SYSTEM (Continued)

5.5.7 ADJUST DPR-3 to 1.5 CFM AND, INSPECT rotameter (FI-1), located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK, for a constant flow (ball remains at a steady position).

☐

5.5.8 CLOSE the following valves, located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK:

• BV-5

☐

• BV-6

☐

• BV-7

☐

5.5.9 Test Director SHALL VERIFY that section 5.5 is COMPLETE by SIGNING below.

Test Director Signature

Date

5.5.10 QC Inspector SHALL VERIFY that section 5.5 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.6 WEIGHT FACTOR AND SPECIFIC GRAVITY SYSTEM

- NOTE - During the test of this system the Yokogawa μ R1000 Strip Chart Recorder will be utilized.
- High and Low level alarms may be annunciated during the performance of this test.

5.6.1 VERIFY that the Weight Factor and Specific Gravity System has been installed per in Figure 3. ☐

5.6.2 VERIFY that manometer MR-1 has a range of 0 - 40 in wg. ☐

5.6.3 VERIFY that manometer MR-2 has a range of 0 - 400 in wg. ☐

5.6.4 ISOLATE the 244-U DCRT Weight Factor transmitter by performing the following (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

5.6.4.1 OPEN WFT-3. ☐

5.6.4.2 CLOSE WFT-2. ☐

5.6.4.3 CLOSE WFT-1. ☐

5.6.5 ISOLATE the 244-U DCRT Specific Gravity transmitter by performing the following (located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK):

5.6.5.1 OPEN SGT-3. ☐

5.6.5.2 CLOSE SGT-2. ☐

5.6.5.3 CLOSE SGT-1. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.6 WEIGHT FACTOR AND SPECIFIC GRAVITY SYSTEM (Continued)

5.6.6 ATTACH manometer MR-1 to SGT-244-U-1 calibration ports
(located on the TRANSMITTER/CONVERTER RACK in 244-U
Instrument Bldg).

☐

5.6.7 ATTACH manometer MR-2 to WFT-244-U-1 calibration ports
(located on the TRANSMITTER/CONVERTER RACK in 244-U
Instrument Bldg).

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.6 WEIGHT FACTOR AND SPECIFIC GRAVITY SYSTEM (Continued)

NOTE - Data from the Weight Factor Transmitter (WFT-244-U-1) and Specific Gravity Transmitter (SGT-244-U-1), located on the 244-U TRANSMITTER\CONVERTER RACK in the 244-U Instrument Bldg, are recorded by the Yokogawa μ R1000 Strip Chart Recorder. Specifically, the data is recorded on channel two (red pen) and channel three (green pen) of the Yokogawa μ R1000 and have been designated Weight Factor Recorder (WFR-244U-1) and Specific Gravity Recorder (SGR-244U-1) respectively. These two recorders are located on panel ANN-U in the 244-U Instrument Bldg. Also, the Yokogawa μ R1000 Strip Chart Recorder contains a digital readout. The readout continually cycles through six channel data screens and displays the information specific to that channel. The data for channels two and three will be in inches.

5.6.8 **RECORD** the Weight Factor Transmitter and Specific Gravity Transmitter responses, by **EXAMINING** WFR-244U-1 and SGR-244U-1 respectively, to the following manometer input settings.

MANOMETER SETTING	SGR-244U-1 STRIP CHART VALUE (RED PEN) (%)		WFR-244U-1 STRIP CHART VALUE (GREEN PEN) (%)		SGR-244U-1 DIGITAL READOUT VALUE (in)		WFR-244U-1 DIGITAL READOUT VALUE (in)	
MR-1 = 0 in wg								
MR-2 = 0 in wg								
WITHIN ACCEPTABLE RANGE OF $0 \pm 1\%$ AND/OR 0 ± 1 in (✓)	YES	NO	YES	NO	YES	NO	YES	NO
MR-1 = 5 in wg								
MR-2 = 45 in wg								
WITHIN ACCEPTABLE RANGE OF $25 \pm 1\%$ AND/OR 5 ± 1 in FOR SGR-244U-1, 45 ± 1 in FOR WFR-244U-1 (✓)	YES	NO	YES	NO	YES	NO	YES	NO

TANK FARM PLANT OPERATIONS PROCEDURE

5.6 WEIGHT FACTOR AND SPECIFIC GRAVITY SYSTEM (Continued)

5.6.9 RECORD the Weight Factor Transmitter and Specific Gravity Transmitter responses, by EXAMINING WFR-244U-1 and SGR-244U-1 respectively, to the following manometer input settings.

MANOMETER SETTING	SGR-244U-1 STRIP CHART VALUE (RED PEN) (%)		WFR-244U-1 STRIP CHART VALUE (GREEN PEN) (%)		SGR-244U-1 DIGITAL READOUT VALUE (in)		WFR-244U-1 DIGITAL READOUT VALUE (in)	
MR-1 = 10 in wg								
MR-2 = 90 in wg								
WITHIN ACCEPTABLE RANGE OF $50 \pm 1\%$ AND/OR 10 ± 1 in FOR SGR-244U-1, 90 ± 1 in FOR WFR-244U-1 (✓)	YES	NO	YES	NO	YES	NO	YES	NO
MR-1 = 15 in wg								
MR-2 = 135 in wg								
WITHIN ACCEPTABLE RANGE OF $75 \pm 1\%$ AND/OR 15 ± 1 in FOR SGR-244U-1, 135 ± 1 in FOR WFR-244U-1 (✓)	YES	NO	YES	NO	YES	NO	YES	NO
MR-1 = 20 in wg								
MR-2 = 180 in wg								
WITHIN ACCEPTABLE RANGE OF $100 \pm 1\%$ AND/OR 20 ± 1 in FOR SGR-244U-1, 180 ± 1 in FOR WFR-244U-1 (✓)	YES	NO	YES	NO	YES		NO	

TANK FARM PLANT OPERATIONS PROCEDURE

5.6 WEIGHT FACTOR AND SPECIFIC GRAVITY SYSTEM (Continued)

5.6.10 Test Director SHALL VERIFY that section 5.6 is COMPLETE by SIGNING below.

Test Director Signature

Date

5.6.11 QC Inspector SHALL VERIFY that section 5.6 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.7 VESSEL LIQUID LEVEL SYSTEM

NOTE - LAS-244U-1 and LAS-244U-2 are located in the 244-U Instrument Bldg on panel ANN-U. The alarm setpoints can be observed on the Yokogawa μ R1000 Strip Chart Recorder digital readout. The readout will continually cycle through each data channel screen and display the information specific to that channel.

5.7.1 ENSURE that LAS-244U-1 HI alarm is SET to ANNUNCIATE at a 244-U Vessel level of $\geq 65\%$ (93.6 in).

☐

5.7.2 ENSURE that LAS-244U-2 LO alarm is SET to ANNUNCIATE at a 244-U Vessel level of $\leq 15\%$ (21.6 in).

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.7 VESSEL LIQUID LEVEL SYSTEM (Continued)

NOTE - Channel 1 (purple pen) of the Yokogawa μ R1000 Strip Chart Recorder has been designated for use by LR-244U-1. The data recorded is displayed in two methods. The first method is the Strip Chart itself. Liquid level data is recorded on the Chart, by the purple pen, in the form of a percentage full (i.e. 75%, 50%, 25%...). The second method is a digital display of channel data. The level data for the digital display is presented as inches full (i.e. 144 in, 130 in, 75 in,...). However, the display "cycles" through 6 channels of data, displaying each in turn.

- Alarms HIGH LEVEL RECEIVER TANK (LA-U-1A) and LOW LEVEL RECEIVER TANK (LA-U-2A) will annunciate on panel ANN-U in the 244-U Instrument Bldg.
- Alarms HIGH LEVEL RECEIVER TANK (LA-244-U-1) and LOW LEVEL RECEIVER TANK (LA-244-U-2) will annunciate on panel ANN-U-271 in the 241-U-271.

5.7.3 APPLY the following manometer differential pressure to SGT-244-U-1 and WFT-244-U-1 AND RECORD the response of LR-244U-1.

MANOMETER SETTING		LR-244U-1 ACCEPTABLE RANGE, $\pm 2\%$ (± 2.9 in)	OBSERVED LR-244U-1 VALUE % (in)	HIGH LEVEL RECEIVER TANK (LA-U-1A) ANNUNCIATED (YES/NO)	LOW LEVEL RECEIVER TANK (LA-U-2A) ANNUNCIATED (YES/NO)
MR-1 (in wg)	MR-2 (in wg)				
5	60	66.6% (95.9 in)			
10	0	0% (0.0 in)			
10	30	16.6% (23.9 in)			
10	60	33.3% (47.95 in)			
10	90	50.0% (72.0 in)			
10	120	66.6% (95.9 in)			
10	150	83.3% (119.95 in)			
10	180	100.0% (144.0 in)			

TANK FARM PLANT OPERATIONS PROCEDURE

5.7 VESSEL LIQUID LEVEL SYSTEM (Continued)

NOTE - Channel 1 (purple pen) of the Yokogawa μ R100 Strip Chart Recorder has been designated for use by LR-244U-1. The data recorded is displayed in two methods. The first method is the Strip Chart itself. Liquid level data is recorded on the Chart, by the purple pen, in the form of a percentage full (i.e. 75%, 50%, 25%...). The second method is a digital display of channel data. The level data for the digital display is presented as inches full (i.e. 144 in, 130 in, 75 in,...). However, the display "cycles" through 6 channels of data, displaying each in turn.

- Alarms HIGH LEVEL RECEIVER TANK (LA-U-1A) and LOW LEVEL RECEIVER TANK (LA-U-2A) will annunciate on panel ANN-U in the 244-U Instrument Bldg.
- Alarms HIGH LEVEL RECEIVER TANK (LA-244-U-1) and LOW LEVEL RECEIVER TANK (LA-244-U-2) will annunciate on panel ANN-U-271 in the 241-U-271.

5.7.4 **APPLY** the following manometer differential pressure to SGT-244-U-1 and WFT-244-U-1 **AND RECORD** the response of LR-244U-1.

MANOMETER SETTING		LR-244U-1 ACCEPTABLE RANGE, $\pm 2\%$ (± 2.9 in)	OBSERVED LR-244U-1 VALUE % (in)	HIGH LEVEL RECEIVER TANK (LA-U-1A) ANNUNCIATED (YES/NO)	LOW LEVEL RECEIVER TANK (LA-U-2A) ANNUNCIATED (YES/NO)
MR-1 (in wg)	MR-2 (in wg)				
15	0	0.0% (0.0 in)			
15	30	11.1% (15.98 in)			
15	60	22.2% (31.97 in)			
15	90	33.3% (47.95 in)			
15	120	44.4% (63.94 in)			
15	150	55.5% (79.92 in)			
15	180	66.6% (95.9 in)			
20	180	50.0% (72.0 in)			

TANK FARM PLANT OPERATIONS PROCEDURE

5.7 VESSEL LIQUID LEVEL SYSTEM (Continued)

- 5.7.5 SET the SGT-244-U-1 manometer MR-1 differential pressure to 10 in wg. ☐
- 5.7.6 SET the WFT-244-U-1 manometer MR-2 differential pressure to a value just BELOW 115 in wg. ☐
- 5.7.7 SLOWLY RAISE the WFT-244-U-1 manometer MR-2 differential pressure (to a value ABOVE 115 in wg) UNTIL, the 244-U Instrument Bldg alarm (located on panel ANN-U) HIGH LEVEL RECEIVER TANK (LA-U-1A) ANNUNCIATES. ☐
- 5.7.8 VERIFY that the 241-U-271 HIGH LEVEL RECEIVER TK (LA-244-U-1), located on panel ANN-271-U, alarm ANNUNCIATES. ☐
- 5.7.9 RECORD the manometer MR-2 differential pressure AND VERIFY that the value is within acceptable limits.

OBSERVED MANOMETER MR-2 DIFFERENTIAL PRESSURE VALUE	WITHIN ACCEPTABLE RANGE 115 in (± 2.0 in) ✓	
	YES	NO

- 5.7.10 LOWER the WFT-244-U-1 manometer MR-2 differential pressure to a value just ABOVE 27 in wg. ☐
- 5.7.11 SLOWLY LOWER the WFT-244-U-1 manometer MR-2 differential pressure (to a value BELOW 27 in wg) UNTIL, the 244-U Instrument Bldg alarm (located on panel ANN-U) LOW LEVEL RECEIVER TANK (LA-U-2A) ANNUNCIATES. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.7 VESSEL LIQUID LEVEL SYSTEM (Continued)

5.7.12 VERIFY that the 241-U-271 LOW LEVEL RECEIVER TANK (LA-244-U-2), located on panel ANN-271-U, alarm ANNUNCIATES. ☐

5.7.13 RECORD the manometer MR-2 differential pressure AND VERIFY that the value is within acceptable limits.

OBSERVED MANOMETER MR-2 DIFFERENTIAL PRESSURE VALUE	WITHIN ACCEPTABLE RANGE 27 in (± 2.0 in) ✓	
	YES	NO

5.7.14 REMOVE manometer MR-2 from WFT-244-U-1. ☐

5.7.15 Test Director SHALL VERIFY that section 5.7 is COMPLETE by SIGNING below.

Test Director Signature

Date

5.7.16 QC Inspector SHALL VERIFY that section 5.7 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM

5.8.1 ENSURE that the following circuit breakers, found in MCC 244-U, compartment B-3 in panelboard A, are CLOSED:

- Circuit Breaker #1.
- Circuit Breaker #3.
- Circuit Breaker #4.
- Circuit Breaker #9.
- Circuit Breaker #11.
- Circuit Breaker #17.

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5.8.2 OPEN the following valves, located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK:

- BV-11
- BV-14
- GV-2

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☐
☐

5.8.3 ENSURE that valve BV-10, located on the 244-U Instrument Bldg TRANSMITTER/CONVERTER RACK, is OPEN.

☐

5.8.4 ENSURE that valves U-29 and U-30, located in the 244-U Flush Pit, are CLOSED.

☐

5.8.5 PLACE the Yokogawa YS170 FIC, located on panel ANN-U in 244-U Instrument Bldg, in MANUAL mode by PRESSING the "M" button.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

- 5.8.6 PRESS the blue page button, located on the lower right hand side of the FIC, UNTIL FIC-1 is DISPLAYED on the screen. ☐

NOTE - The Yokogawa FIC will respond faster if while pressing an arrow key, the shift key is simultaneously held down.

- 5.8.7 PRESS the left arrow button, located on the bottom left hand side of the FIC-1 screen, UNTIL the horizontal bar graph is fully left. ☐

- 5.8.8 OBSERVE the MV value present on the FIC-1 screen, AND VERIFY that the value is equal to 0.0. ☐

- 5.8.9 VISUALLY INSPECT DOV-244-U-1, located in the 244-U Flush Pit, AND VERIFY that it is FULLY CLOSED. ☐

- 5.8.10 PRESS the right arrow button, located on the bottom right hand side of the FIC, UNTIL the horizontal bar graph is fully right. ☐

- 5.8.11 OBSERVE the MV value present on the FIC-1 screen, AND VERIFY that the value is equal to 100.0. ☐

- 5.8.12 VISUALLY INSPECT DOV-244-U-1, located in the 244-U Flush Pit, AND VERIFY that it is FULLY OPEN. ☐

- 5.8.13 PRESS the blue page button, located on the lower right hand side of the FIC, UNTIL FIC-2 is DISPLAYED on the screen. ☐

NOTE - The Yokogawa FIC will respond faster if while pressing an arrow key, the shift key is simultaneously held down.

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

- 5.8.14 PRESS the left arrow button, located on the bottom left hand side of the FIC, UNTIL the horizontal bar graph is *fully* left. ☐
- 5.8.15 OBSERVE the MV value present on the FIC-2 screen, AND VERIFY that the value is equal to 0.0. ☐
- 5.8.16 VISUALLY INSPECT DOV-244-U-2, located in the 244-U Pump Pit, AND VERIFY that it is FULLY CLOSED. ☐
- 5.8.17 PRESS the right arrow button, located on the bottom right hand side of the FIC, UNTIL the horizontal bar graph is fully right. ☐
- 5.8.18 OBSERVE the MV value present on the FIC-2 screen, AND VERIFY that the value is equal to 100.0. ☐
- 5.8.19 VISUALLY INSPECT DOV-244-U-2, located in the 244-U Pump Pit, AND VERIFY that it is FULLY OPEN. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

NOTE - Press the blue page button, lower right hand side of the Yokogawa FIC, to toggle between the FIC-1 and FIC-2 screens.

5.8.20 SET the SGT-244-U-1 manometer MR-1 differential pressure to the following values **AND, VISUALLY VERIFY** the responses of DOV-244-U-1 and DOV-244-U-2 (located in the 244-U Flush Pit and Pump Pit respectively).

MANOMETER MR-1 DIFFERENTIAL PRESSURE VALUE	EQUIVALENT LIQUID SPECIFIC GRAVITY (SpG)	FIC-1 SV VALUE (YES/NO)	FIC-2 SV VALUE (YES/NO)	VISUAL CHECK OF DOV-244-U-1 (YES/NO)	VISUAL CHECK OF DOV-244-U-2 (YES/NO)
10 in wg	1.0	0 ± 1%	66.6 ± 1%	FULLY CLOSED	FULLY OPEN
11.6 in wg	1.16	50 ± 1%	60 ± 1%	OPEN	OPEN
18 in wg	1.8	100 ± 1%	20 ± 1%	FULLY OPEN	OPEN

5.8.21 REMOVE manometer MR-1 from SGT-244-U-1. ☐

5.8.22 ADD 3000 gallons of water to the 244-U DCRT by **PERFORMING** the following:

5.8.22.1 CONNECT one end of a 2 inch Flexible Jumper to 244-U Pump Pit Nozzle M. ☐

5.8.22.2 CONNECT the other end of the 2 inch Flexible Jumper to the Portable Rotameter. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

5.8.22.3 CONNECT the Portable Rotameter to a Badger water meter.

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5.8.22.4 ROUTE the discharge of the Badger water meter to 244-U Pump Pit riser #6.

☐

5.8.22.5 IF the water is being supplied by the 244-U facility THEN, ENSURE 244-U Flush Pit valves U-25 and U-29 are CLOSED.

☐

5.8.22.6 OPEN 244-U Flush Pit valves U-27 and U-30.

☐

5.8.22.7 PLACE 244-U Flush Pit valve U-28 in the DILUTION position.

☐

5.8.22.8 VISUALLY VERIFY 244-U Flush Pit valve DOV-244-U-1 is FULLY CLOSED.

☐

5.8.22.9 RECORD the initial Badger water meter reading (found in 244-U Pump Pit) and the initial CVT-244-U-2 reading (located on the TRANSMITTER/CONVERTER RACK in the 244-U Instrument Bldg).

DEVICE	INITIAL READING (GALLONS)
CVT-244-U-2	
BADGER WATER METER	

5.8.22.10 PRESS the blue page button, located on the lower right hand side of the FIC, UNTIL FIC-1 is DISPLAYED on the screen.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

5.8.22.11 IF the water is being supplied by a water truck
THEN, GO TO step 5.8.22.15.

☐

5.8.22.12 OPEN 244-U Flush Pit valve U-26.

☐

5.8.22.13 SLOWLY OPEN 244-U Flush Pit valve U-25.

☐

5.8.22.14 GO TO step 5.8.23.

☐

5.8.22.15 ENSURE 244-U Flush Pit valves U-25 and U-29 are
CLOSED.

☐

5.8.22.16 CONNECT a flexible water hose from the water truck
to the 244-U Flush Pit "T" connection downstream
of valve U-25.

☐

5.8.22.17 OPEN water truck water supply valve.

☐

5.8.22.18 SLOWLY OPEN 244-U Flush Pit valve U-26.

☐

5.8.22.19 GO TO step 5.8.23.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

NOTE - To open valve DOV-244-U-1 to a specified amount, with the FIC-1 screen displayed, the bottom right hand side arrow button must be pressed until the correct MV value is displayed. The FIC-1 MV value is the amount that DOV-244-U-1 has been directed to open. Also, the Portable Rotameter is located in the 244-U Pump Pit.

5.8.23 SET FIC-1 MV to the following values AND, RECORD water flow rates from the following devices WHEN APPROXIMATELY 500 gallons has flowed through the Badger water meter:

FIC-1 MV VALUE	DEVICE FLOW RATES			
	CVT-244-U-2 (%)	PORTABLE ROTAMETER	STRIP CHART (BLUE PEN)	FIC-1 PV VALUE
50%				

5.8.24 SET FIC-1 MV to the following values AND, RECORD water flow rates from the following devices WHEN APPROXIMATELY 1000 gallons have flowed through the Badger water meter:

FIC-1 MV VALUE	DEVICE FLOW RATES			
	CVT-244-U-2 (%)	PORTABLE ROTAMETER	STRIP CHART (BLUE PEN)	FIC-1 PV VALUE
100%				

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

NOTE - Initial readings for the Badger water meter and CVT-244-U-2 can be obtained from the table in step 5.8.22.9. Also, The Badger water meter is located in the 244-U Pump Pit and CVT-244-U-2 is located on the TRANSMITTER/CONVERTER RACK in the 244-U Instrument Bldg. It should be remembered that the Badger water meter is the "official" water meter for adding water to the 244-U DCRT.

5.8.25 WHEN the approximate amount of water, as determined below, has been **ADDED** to the 244-U DCRT, **RECORD** the following CVT-244-U-2 and Badger water meter readings:

APPROXIMATE AMOUNT OF WATER ADDED	INSTRUMENT READINGS					
	INITIAL CVT-244-U-2 READING (GAL) [A]	CVT-244-U-2 READING (GAL) [B]	B - A	INITIAL BADGER WATER METER READING (GAL) [C]	BADGER WATER METER READING [D]	D - C
1500 ± 50						
2000 ± 50						
2500 ± 50						
3000 ± 50						

5.8.26 WHEN APPROXIMATELY 3000 gallons of water has been **ADDED** to the 244-U DCRT, as **DETERMINED** by the Badger water meter, **PERFORM** the following:

5.8.26.1 IF the 244-U DCRT water source was used **THEN**,
CLOSE 244-U Flush Pit valve U-25 and U-26.

☐

5.8.26.2 IF the water truck was used **THEN**, **CLOSE** the water truck water supply valve.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

- 5.8.26.3 IF the water truck was used THEN, CLOSE 244-U Flush Pit valve U-26. ☐
- 5.8.26.4 VERIFY that 244-U Flush Pit valve U-25 is CLOSED. ☐
- 5.8.26.5 CLOSE 244-U Flush Pit valves U-27, U-28 and U-30. ☐
- 5.8.27 DISCONNECT one end of the 2 inch Flexible Jumper from 244-U Pump Pit Nozzle M. ☐
- 5.8.28 DISCONNECT the other end of the 2 inch Flexible Jumper from the Portable Rotameter. ☐
- 5.8.29 DISCONNECT the Portable Rotameter from the Badger water meter. ☐
- 5.8.30 ENSURE a Process Blank has been INSTALLED on 244-U Pump Pit Nozzle "L". ☐
- 5.8.31 ENSURE 244-U Flush Pit valves U-29 and U-30 are CLOSED. ☐
- 5.8.32 ENSURE 244-U Pump Pit valve U-32 is CLOSED. ☐
- 5.8.33 ENSURE 244-U Pump Pit valve U-13 is in the OPERATE (OPER) position. ☐
- 5.8.34 ENSURE DOV-244-U-2, located in the 244-U Pump Pit, is FULLY CLOSED. ☐
- 5.8.35 CONNECT a flexible jumper, with a 3 in diameter connector head, from nozzle 2-1 to the inlet connector head on the jumper assembly per Figure 4. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

5.8.36 CONNECT a flexible jumper, with a 3 in diameter connector head, from the outlet connector head on the jumper assembly to nozzle 17 per Figure 4.

5.8.37 ENSURE the following MCC 244-U DISCONNECT SWITCHES (located in 244-U Instrument Bldg) are CLOSED (ON).

DISCONNECT SWITCH	COMPARTMENT	ON	OFF
TRANSFER PUMP	A-1		
CB-PNLBD-A	A-4R		
MAIN	A-5		

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

WARNING

Energized circuits and leads are contained inside the panel cabinet.
Observe appropriate electrical precautions.

5.8.38 ENSURE the following MCC 244-U CIRCUIT BREAKERS (located in 244-U Instrument Bldg) are CLOSED (ON).

CIRCUIT BREAKER	PANEL	COMPARTMENT	ON	OFF
1	PANELBOARD A	B-3		
2	PANELBOARD A	B-3		
3	PANELBOARD A	B-3		
4	PANELBOARD A	B-3		
9	PANELBOARD A	B-3		
11	PANELBOARD A	B-3		
13	PANELBOARD A	B-3		
17	PANELBOARD A	B-3		
21	PANELBOARD A	B-3		

5.8.39 PLACE the Yokogawa YS170 FIC, located on panel ANN-U in 244-U Instrument Bldg, in MANUAL mode by PRESSING the "M" button.

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

5.8.40 PRESS the blue page button, located on the lower right hand side of the FIC, UNTIL FIC-2 is DISPLAYED on the screen. ☐

NOTE - The Yokogawa FIC will respond faster if the arrow key and the shift key are simultaneously held down.

5.8.41 PRESS the left arrow button, located on the bottom left hand side of the FIC, UNTIL the horizontal bar graph is fully left. ☐

5.8.42 OBSERVE the MV value present on the FIC-2 screen, AND VERIFY that the value is equal to 0.0. ☐

5.8.43 VISUALLY INSPECT DOV-244-U-2, located in the 244-U Pump Pit, AND VERIFY that it is FULLY CLOSED. ☐

5.8.44 PRESS the right arrow button, located on the bottom right hand side of the FIC, UNTIL the horizontal bar graph is fully right. ☐

5.8.45 OBSERVE the MV value present on the FIC-2 screen, AND VERIFY that the value is equal to 100.0. ☐

5.8.46 VISUALLY INSPECT DOV-244-U-2, located in the 244-U Pump Pit, AND VERIFY that it is FULLY OPEN. ☐

5.8.47 START the P-244-U-1 Transfer Pump by PRESSING the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) red START button (located on panel ANN-U in the 244-U Instrument Bldg). ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

NOTE - Channel 4 (blue pen) of the Yokogawa μ R1000 Strip Chart Recorder has been designated for use by FR-244U-1. The data recorded is displayed in two methods. The first method is the Strip Chart itself. Transfer flow data is recorded on the Chart, by the blue pen, in the form of a percentage of flow (i.e. 75%, 50%, 25%...). The second method is a digital display of channel data. The level data for the digital display is presented as gallons per minute (i.e. 14 gpm, 30 gpm, 100 gpm,...). However, the display "cycles" through 6 channels of data, displaying each in turn.

5.8.48 **VERIFY** that the Transfer Pump flow is increasing by **OBSERVING** FR-244U-1 (located on panel ANN-U in the 244-U Instrument Bldg).

5.8.49 **VERIFY** that Alarm LOW FLOW TRANSFER LINE (FA-U-1A), located on panel ANN-U in 244-U Instrument Bldg, is **NOT ANNUNCIATED**. ☐

5.8.50 **VERIFY** that Alarm LOW FLOW TRANSFER LINE (FA-244-U-1), located on panel ANN-271-U in 241-U-271, is **NOT ANNUNCIATED**. ☐

5.8.51 **AFTER** two (2) minutes, when the Transfer Pump flow has **STABILIZED**, **RECORD** the FR-244U-1 (located on panel ANN-U in the 244-U Instrument Bldg) flow rate. ☐

FR-244U-1 STRIP CHART VALUE (BLUE PEN) %	FR-244U-1 DIGITAL READOUT VALUE GPM

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

NOTE - LOW FLOW TRANSFER LINE Alarm will annunciate at approximately 15 gpm (this is equivalent to 10% on the Strip Chart).

5.8.52 CONTINUALLY PUSH the Yokogawa FIC (located on panel ANN-U in the 244-U Instrument Bldg) lefthand arrow button to **SLOWLY CLOSE DOV-244-U-2 UNTIL**, Alarm LOW FLOW TRANSFER LINE (FA-U-1A), located on panel ANN-U in the 244-U Instrument Bldg, has **ANNUNCIATED**.

☐

5.8.53 DETERMINE that the P-244-U-1 Transfer Pump has **SHUT DOWN** by **PERFORMING** the following:

5.8.53.1 LISTEN for the sound of the Transfer Pump operating.

☐

5.8.53.2 VERIFY that the 244-U RECEIVER TANK TRANSFER PUMP (MS-1) green STOP button, found on panel ANN-U in the 244-U Instrument Bldg, is **ILLUMINATED**.

☐

5.8.53.3 VERIFY that Alarm LOW FLOW TRANSFER (FA-U-1A), found on panel ANN-U in the 244-U Instrument Bldg, has **ANNUNCIATED**.

☐

5.8.53.4 VERIFY that Alarm LOW FLOW TRANSFER (FA-244-U-1), found on panel ANN-271-U in 241-U-271, has **ANNUNCIATED**.

☐

5.8.53.5 VERIFY that Alarm TRANSFER PUMP SHUTDOWN (MSA-1A), found on panel ANN-U in the 244-U Instrument Bldg, has **ANNUNCIATED**.

☐

5.8.53.6 VERIFY that the Alarm TRANSFER PUMP SHUTDOWN (MSA-1), found on panel ANN-271-U in 241-U-271, has **ANNUNCIATED**.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

5.8.54 DETERMINE that the 244-U Transfer flow has DECREASED to zero (0) gpm by PERFORMING the following:

5.8.54.1 EXAMINE the Yokogawa Strip Chart, found on panel ANN-U in the 244-U Instrument Bldg, AND VERIFY that the blue pen INDICATES zero (o) percent. ☐

5.8.54.2 EXAMINE the Yokogawa Strip Chart digital display, found on panel ANN-U in the 244-U Instrument Bldg, AND VERIFY that channel 4 INDICATES zero (o) gpm. ☐

5.8.55 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐

5.8.56 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐

5.8.57 VERIFY 244-U Flush Pit valve U-25 is CLOSED. ☐

5.8.58 OPEN 244-U Flush Pit valve U-27. ☐

5.8.59 POSITION 244-U Flush Pit valve U-28 to the FLUSH position (this will direct flow from U-27 to valve U-29). ☐

5.8.60 OPEN 244-U Flush Pit valve U-29. ☐

5.8.61 VERIFY 244-U Flush Pit valve U-30 is CLOSED. ☐

5.8.62 IF the 244-U water supply is used THEN, OPEN 244-U Flush Pit valve U-25. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

- 5.8.63 IF a water truck is used THEN, OPEN the water truck water supply valve. ☐
- 5.8.64 OPEN 244-U Flush Pit valve U-26. ☐
- 5.8.65 VERIFY that alarm FLUSH LINE HIGH PRESSURE (PA-U-1A), located on panel ANN-U in 244-U Instrument Bldg, ANNUNCIATES. ☐
- 5.8.66 VERIFY that alarm FLUSH LINE HIGH PRESSURE (PA-244-U-1), located on panel ANN-271-U in 241-U-271, ANNUNCIATES. ☐
- 5.8.67 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.8.68 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.8.69 VERIFY that Relay K-LS, located in panel RELAY CONTROL 244-U of the 244-U Instrument Bldg, is DE-ENERGIZED. ☐
- 5.8.70 CLOSE 244-U Flush Pit valve U-26. ☐
- 5.8.71 IF the water truck was used, CLOSE the water truck water supply valve. ☐
- 5.8.72 IF the 244-U water source was used, CLOSE the 244-U Flush Pit valve U-25. ☐
- 5.8.73 OPEN 244-U Flush Pit valve U-30. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.8 VESSEL LIQUID TRANSFER SYSTEM (Continued)

5.8.74 RELIEVE pressure on 244-U Pump Pit Nozzle "L" Process Blank by, POSITIONING 244-U Flush Pit valve U-28 to the DILUTION position.

☐

5.8.75 ALLOW 1 minute to transpire THEN, CLOSE 244-U Flush Pit valve U-30.

☐

5.8.76 IF the water truck was used, DISCONNECT the flexible water hose from the 244-U Flush Pit "T" connection downstream of valve U-25.

☐

5.8.77 Test Director SHALL VERIFY that section 5.8 is COMPLETE by SIGNING below.

Test Director Signature

Date

5.8.78 QC Inspector SHALL VERIFY that section 5.8 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM

5.9.1 OPEN the following 244-U Filter Pit HEPA Filter valves:

• U-19

☐

• U-20

☐

• U-21

☐

• U-22

☐

• U-23

☐

• U-24

☐

• BFV-1

☐

5.9.2 VERIFY that the 244-U Filter Pit Motor Operated Valve MOV-244-U-1, is CLOSED.

☐

5.9.3 CLOSE Exhaust Stack Drain Valve.

☐

5.9.4 POSITION FILTER BRANCH #1 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the BY-PASS position.

☐

5.9.5 VERIFY FILTER BRANCH #1 INTLK BYPASSED red light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.6 POSITION FILTER BRANCH #2 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the BY-PASS position. ☐
- 5.9.7 VERIFY FILTER BRANCH #2 INTLK BYPASSED red light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.8 POSITION FILTER BRANCH #3 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the BY-PASS position. ☐
- 5.9.9 VERIFY FILTER BRANCH #3 INTLK BYPASSED red light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.10 CLOSE 244-U Filter Pit HEPA Filter valves U-23 and U-24. ☐
- 5.9.11 POSITION FILTER BRANCH #1 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the OFF position. ☐
- 5.9.12 VERIFY FILTER BRANCH #1 INTLK ON green light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.13 POSITION FILTER BRANCH #2 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the OFF position. ☐
- 5.9.14 VERIFY FILTER BRANCH #2 INTLK ON green light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.15 POSITION EXHAUST FAN DISCONNECT Switch, located on MCC 244-U, compartment A-3 in the 244-U Instrument Bldg, to the CLOSED (ON) position. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.16 START Exhauster by PRESSING 244-U RECEIVER TANK EXHAUST FAN (MS-4) red START button, located on panel ANN-U in the 244-U Instrument Bldg. ☐
- 5.9.17 DIAL in a high pressure value on DPIC-6, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, BY ADJUSTING the HIGH Differential Pressure indicator to a point BELOW the current Differential Pressure reading. ☐
- 5.9.18 VERIFY that Alarm HEPA FILTERS HIGH DIFF PRESS (DPA-U-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.9.19 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.9.20 VERIFY that Alarm HEPA FILTERS HIGH DIFF PRESS (DPA-244-U-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.9.21 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.9.22 RETURN the HIGH Differential Pressure indicator on DPIC-6, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, to a value of 1.75 in wg. ☐
- 5.9.23 DIAL in a high pressure value on DPIC-7, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, BY ADJUSTING the HIGH Differential Pressure indicator to a point BELOW the current Differential Pressure reading. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.24 VERIFY that Alarm HEPA FILTERS HIGH DIFF PRESS (DPA-U-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.9.25 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.9.26 VERIFY that Alarm HEPA FILTERS HIGH DIFF PRESS (DPA-244-U-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.9.27 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.9.28 RETURN the HIGH Differential Pressure indicator on DPIC-7, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, to a value of 1.75 in wg. ☐
- 5.9.29 POSITION FILTER BRANCH #1 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the BY-PASS position. ☐
- 5.9.30 VERIFY FILTER BRANCH #1 INTLK BYPASSED red light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.31 POSITION FILTER BRANCH #3 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the OFF position. ☐
- 5.9.32 VERIFY FILTER BRANCH #3 INTLK ON green light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.33 CLOSE 244-U Filter Pit HEPA Filter valves U-19 and U-20. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.34 OPEN 244-U Filter Pit HEPA Filter valves U-23 and U-24. ☐
- 5.9.35 DIAL in a high pressure value on DPIC-8, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, BY ADJUSTING the HIGH Differential Pressure indicator to a point BELOW the current Differential Pressure reading. ☐
- 5.9.36 VERIFY that Alarm HEPA FILTERS HIGH DIFF PRESS (DPA-U-1A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.9.37 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.9.38 VERIFY that Alarm HEPA FILTERS HIGH DIFF PRESS (DPA-244-U-1), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.9.39 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.9.40 RETURN the HIGH Differential Pressure indicator on DPIC-8, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, to a value of 1.75 in wg. ☐
- 5.9.41 DIAL in a low pressure value on DPIC-5, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, BY ADJUSTING the LOW Differential Pressure indicator to a point ABOVE the current Differential Pressure reading. ☐
- 5.9.42 VERIFY that the 244-U Exhauster has SHUT DOWN, BY DETERMINING if the 244-U RECEIVER TANK EXHAUST FAN (MS-4) green STOP button (located on panel ANN-U in the 244-U Instrument Bldg) IS ILLUMINATED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.43 VERIFY that Alarm EXHAUST FAN SHUTDOWN (MSA-4A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.9.44 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.9.45 VERIFY that Alarm EXHAUST FAN SHUTDOWN (MSA-4), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.9.46 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.9.47 RETURN the LOW Differential Pressure indicator on DPIC-5, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, to a value of 0.4 in wg. ☐
- 5.9.48 START Exhauster by PRESSING 244-U RECEIVER TANK EXHAUST FAN (MS-4) red START button, located on panel ANN-U in the 244-U Instrument Bldg. ☐
- 5.9.49 DIAL in a low pressure value on DPIC-4, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, BY ADJUSTING the LOW Differential Pressure indicator to a point ABOVE the current Differential Pressure reading. ☐
- 5.9.50 VERIFY that the 244-U Exhauster has SHUT DOWN, BY DETERMINING if the 244-U RECEIVER TANK EXHAUST FAN (MS-4) green STOP button (located on panel ANN-U in the 244-U Instrument Bldg) IS ILLUMINATED. ☐
- 5.9.51 VERIFY that Alarm EXHAUST FAN SHUTDOWN (MSA-4A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.52 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.9.53 VERIFY that Alarm EXHAUST FAN SHUTDOWN (MSA-4), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.9.54 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.9.55 RETURN the LOW Differential Pressure indicator on DPIC-4, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, to a value of 0.4 in wg. ☐
- 5.9.56 POSITION FILTER BRANCH #3 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the BY-PASS position. ☐
- 5.9.57 VERIFY FILTER BRANCH #3 INTLK BYPASSED red light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.58 POSITION FILTER BRANCH #1 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the OFF position. ☐
- 5.9.59 VERIFY FILTER BRANCH #1 INTLK ON green light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.60 OPEN 244-U Filter Pit HEPA Filter valves U-19 and U-20. ☐
- 5.9.61 CLOSE 244-U Filter Pit HEPA Filter valves U-23 and U-24. ☐
- 5.9.62 START Exhauster by PRESSING 244-U RECEIVER TANK EXHAUST FAN (MS-4) red START button, located on panel ANN-U in the 244-U Instrument Bldg. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.63 DIAL in a low pressure value on DPIC-3, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, BY ADJUSTING the LOW Differential Pressure indicator to a point ABOVE the current Differential Pressure reading. ☐
- 5.9.64 VERIFY that the 244-U Exhauster has SHUT DOWN, BY DETERMINING if the 244-U RECEIVER TANK EXHAUST FAN (MS-4) green STOP button (located on panel ANN-U in the 244-U Instrument Bldg) IS ILLUMINATED. ☐
- 5.9.65 VERIFY that Alarm EXHAUST FAN SHUTDOWN (MSA-4A), located on panel ANN-U in the 244-U Instrument Bldg, has ANNUNCIATED. ☐
- 5.9.66 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-U in 244-U Instrument Bldg. ☐
- 5.9.67 VERIFY that Alarm EXHAUST FAN SHUTDOWN (MSA-4), located on panel ANN-271-U in 241-U-271, has ANNUNCIATED. ☐
- 5.9.68 PRESS the annunciator ACKNOWLEDGE button, located on panel ANN-271-U in 241-U-271. ☐
- 5.9.69 RETURN the LOW Differential Pressure indicator on DPIC-3, located on DIFFERENTIAL PRESSURE INSTRUMENTATION PANEL in the 244-U Instrument Bldg, to a value of 0.4 in wg. ☐
- 5.9.70 VERIFY that the low setpoints for DPIC-3 through DPIC-5 are SET to 0.4 in wg. ☐
- 5.9.71 VERIFY that the high setpoints for DPIC-6 through DPIC-8 are SET to 1.75 in wg. ☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

5.9.72 VERIFY that the 244-U Exhauster is SHUT DOWN, BY DETERMINING if the 244-U RECEIVER TANK EXHAUST FAN (MS-4) green STOP button (located on panel ANN-U in the 244-U Instrument Bldg) IS ILLUMINATED.

☐

5.9.73 CLOSE the following 244-U Filter Pit HEPA Filter valves:

• U-19

☐

• U-20

☐

• U-21

☐

• U-22

☐

5.9.74 VERIFY the following 244-U Filter Pit HEPA Filter valves are CLOSED:

• U-23

☐

• U-24

☐

5.9.75 OPEN the Exhaust Stack Drain valve.

☐

5.9.76 POSITION FILTER BRANCH #1 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the BY-PASS position.

☐

5.9.77 VERIFY FILTER BRANCH #1 INTLK BYPASSED red light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED.

☐

TANK FARM PLANT OPERATIONS PROCEDURE

5.9 EXHAUSTER DPIC SYSTEM (Continued)

- 5.9.78 POSITION FILTER BRANCH #2 Key Switch, located on panel ANN-U in the 244-U Instrument Bldg, to the BY-PASS position. ☐
- 5.9.79 VERIFY FILTER BRANCH #2 INTLK BYPASSED red light, located on panel ANN-U in the 244-U Instrument Bldg, is ILLUMINATED. ☐
- 5.9.80 POSITION EXHAUST FAN DISCONNECT Switch, located on MCC 244-U, compartment A-3 in the 244-U Instrument Bldg, to the OPEN (OFF) position. ☐
- 5.9.81 Test Director SHALL VERIFY that section 5.9 is COMPLETE by SIGNING below.

Test Director Signature

Date

- 5.9.82 QC Inspector SHALL VERIFY that section 5.9 is COMPLETE by SIGNING below.

QC Inspector Signature

Date

QC Stamp

TANK FARM PLANT OPERATIONS PROCEDURE

Figure 1 - Heat Trace Diagram

TANK FARM PLANT OPERATIONS PROCEDURE

Figure 2 - 244-U Dip Tube System

TANK FARM PLANT OPERATIONS PROCEDURE

Figure 3 - Air System and Weight Factor and Specific Gravity System

TANK FARM PLANT OPERATIONS PROCEDURE

FIGURE 4 - 244-U DCRT PUMP PIT FLOW TEST JUMPER CONFIGURATION

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OTP EXCEPTION LOG

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OTP EXCEPTION LOG		
Number	Date	Description

TANK FARM PLANT OPERATIONS PROCEDURE

OTP EXCEPTION RECORD

This page may be reproduced as necessary.

OTP step number:	OTP Exception Log Number
Description of Exception:	
Resolution of Exception:	
Date of Resolution:	
Test Director signature:	
Cognizant Engineer signature:	
Quality Assurance signature:	
Tank Farm Operations signature:	

TANK FARM PLANT OPERATIONS PROCEDURE

OTP ACCEPTANCE RECORD

This OTP has been completed and the results, including red-line changes, exceptions, and exception resolutions, have been reviewed for compliance with the intent of the Purpose (Section 1.0). The OTP results are accepted by the undersigned:

Cognizant Engineer

Date

West Tank Farm Operations

Date

Safety

Date

Quality Assurance

Date

Test Director

Date

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PROCEDURE HISTORY SIGNATURE DATA

Procedure Signatures for WHC-SD-ER3641-OTP-001			TYPE OF CHANGE	IMPACT LEVEL
POSITION/ORG	DELEGATE	DATE	NEW	SQE
Cog Engineer				
Engineer				
Manager Stab/WTPO				
Manager FS/WTPO				
Engineer/TWRSQA				
Engineer/WTSS				
Engineer/WTSA				
Engineer/ALARA				
Engineering Writer				
Acceptance Review				
Approval Authority				

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