

ENGINEERING CHANGE NOTICE

Page 1 of 3

1. ECN: 642650

Proj. ECN: W-058-293

2. ECN Category (mark one) Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. Mark A. Friedrich, TWRS, G3-14 376-7408	4. USQ Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Date June 24, 1997	
	6. Project Title/No./Work Order No. Replacement of Cross-Site Transfer System W-058/C12300	7. Bldg./Sys./Fac. No. 6241-A&V	8. Approval Designator SQ/SC-1	
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) HNF-SD-W058-ATP-002 <i>new</i>	10. Related ECN No(s). None	11. Related PO No. NA	

12a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 12b) <input checked="" type="checkbox"/> No (NA Blks. 12b, 12c, 12d)	12b. Work Package No. NA	12c. Modification Work Complete NA Design Authority/Cog. Engineer Signature & Date	12d. Restored to Original Condition (Temp. or Standby ECN only) NA Design Authority/Cog. Engineer Signature & Date
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13a. Description of Change

13b. Design Baseline Document?  Yes  No

SC-3

- Page 3; Repaginated Table of Contents
- Page 4; Added drawings H-2-822421 SH 2, H-2-822513, SH 3 and H-6-14018 SH 1 to references
- Page 7; Replaced FDNW with CON on item 5.2.1, revised paragraph 4
- Page 9; Changed control room from 278-WA to 242-S for sections 7.1.7 and 7.1.8; changed VTPS range
- Page ~~11~~ <sup>12</sup>; Revised items 9.1.2 and 9.1.5
- Page ~~13, 14~~ <sup>13, 14</sup>; Revised items 9.2.1, 9.2.5 and 9.2.8; added items 9.2.9; deleted caution statement
- Page ~~14~~ <sup>15</sup>; Revised items 9.5.3 through 9.5.9 and 9.5.10
- Page ~~16, 17~~ <sup>16, 17</sup>; Revised items 9.10.3 and 9.10.4
- Page ~~18, 19~~ <sup>18, 19</sup>; Revised items 9.10.5, 9.10.7, 9.10.8, 9.10.10, 9.10.11, 9.10.14, 9.11.3 through 9.11.5, 9.11.7, 9.11.8, 9.11.10, 9.11.11, and 9.11.14

14a. Justification (mark one)

Criteria Change <input checked="" type="checkbox"/>	Design Improvement <input type="checkbox"/>	Environmental <input type="checkbox"/>	Facility Deactivation <input type="checkbox"/>
As-Found <input type="checkbox"/>	Facilitate Const <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	Design Error/Omission <input type="checkbox"/>

14b. Justification Details

- Tests identified in the ATP have been deferred to the Pre-OTP (*SECTION 11, TRANSFER VALUES*)
- *ADDED TWO SUMP PUMPS*
- *ADDED NEW PRESSURE RANGES/TOLERANCES*

15. Distribution (include name, MSIN, and no. of copies)

*See distribution sheet*

RELEASE STAMP

DATE: **JUL 17 1997**

STA: *4*

HANFORD RELEASE

ID: *2*



# ENGINEERING CHANGE NOTICE

16. Design Verification Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	17. Cost Impact		18. Schedule Impact (days)	
	ENGINEERING Additional Savings <input checked="" type="checkbox"/> \$ 1500 <sup>00</sup> Additional Savings <input type="checkbox"/> \$		CONSTRUCTION Improvement <input type="checkbox"/> Delay <input checked="" type="checkbox"/> TBD	

19. 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 13. Enter the affected document number in Block 20.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
Equipment Spec.	<input type="checkbox"/>	Maintenance Procedure	<input type="checkbox"/>	ASME Coded Item	<input type="checkbox"/>
Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IFPD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Samp. Schedule	<input type="checkbox"/>	Tickler File	<input type="checkbox"/>
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>		<input type="checkbox"/>
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>		<input type="checkbox"/>

20. 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
NA		

21. Approvals

Signature	Date	Signature	Date
Design Authority: N/A	NA	Design Agent: Mark Friedlich	7-14-97
Cog. Eng. <i>Ed Celso</i>	7/5/97	PE <i>Stender</i>	7/15/97
Cog. Mgr. <i>AA Parsons</i>	7/17/97	QA SEE DESIGN AUTHORITY	NA
QA L.R. HALL (FOWW) <i>Larry R. Hall</i>	7-15-97	Safety NA	NA
Safety m. <i>on Idea</i>	7/17/97	Design Mark Friedlich	7-14-97
Environ. N/A	NA	Environ. NA	NA
Other N/A	NA	Other	
Ops. <i>DA Monahan</i>	7/17/97		
Travel Cog. <i>Wj S. ty</i>	7/17/97		
	NA		

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

ADDITIONAL

**ENGINEERING CHANGE NOTICE  
CONTINUATION SHEET**

ECN W-058-293

Page 3 of 3

Date 6-24-97

continued from block 13a

10. <sup>W 19</sup> Page ~~18~~; Revised items 9.12.3, 9.12.5, 9.12.8, 9.12.11, 9.12.14, and 9.13.3 through 9.13.5
11. <sup>W 20</sup> Page ~~19~~; Revised items 9.13.6 through 9.13.9, deleted items 9.13.10 through 9.13.12, renumbered items 9.13.13 through 9.13.16, revised items 9.14.3, 9.14.5 through 9.14.9, deleted items 9.14.10 through 9.14.12, renumbered items 9.14.13 through 9.14.16
12. <sup>W 21</sup> Page ~~20~~; Added items 9.16.2 and 9.16.10; renumbered items 9.16.2 through 9.16.8; changed FT-3125 to FIT-3125
13. <sup>W 22</sup> Page ~~21~~; Revised items 9.17.2, 9.17.6 and 9.17.9; added item 9.17.10; renumber 9.17.10 to 9.17.11; deleted caution statement; added section 9.18
14. <sup>W 23</sup> Page ~~22~~; Revised items 10.1.2 and 10.1.5
15. <sup>W 24</sup> Page ~~23~~; Revised items 10.2.1, 10.2.5 and 10.2.8; added items 10.2.9 through 10.2.14; deleted caution statement
16. <sup>W 25</sup> Page ~~24~~; Revised items 10.5.3 through 10.5.11 and 10.6.3
17. <sup>W 26</sup> Page ~~25~~; Revised items 10.6.4 through 10.6.9, 10.7.3 through 10.7.9, deleted items 10.7.10 through 10.7.12, renumbered items 10.7.13 through 10.7.16
18. <sup>W 27</sup> Page ~~26~~; Revised items 10.8.3 through 10.8.9, deleted items 10.8.10 through 10.8.12, renumbered items 10.8.13 through 10.8.16, revised items 10.9.3 through 10.9.6
19. <sup>W 28</sup> Page ~~27~~; Added items 10.10.2 and 10.10.10; renumbered items 10.10.2 through 10.10.8; revised section 10.11; revised note; revised items 10.11.1 and 10.11.2; deleted caution statement
20. <sup>W 30</sup> Page ~~28~~; Revised items 10.11.3, 10.11.5, 10.11.6, 10.11.8, and 10.11.9; added item 10.11.10, renumbered items 10.11.10 to 10.11.11; added section 10.12
- 21 Deleted pages 30 through 32

# Acceptance Test Procedure, Diversion Box and Vent Station Instrumentation

**K. A. Colosi**

Numatec Hanford Corporation, Richland, WA 99352  
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: W-058-293      UC: 2030  
Org Code: 8C610      Charge Code: N58PM  
B&R Code: 39EW31301      Total Pages: 36

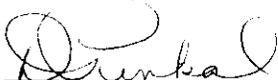
Key Words: Acceptance Test Procedure, Project W-058, Diversion Box and Vent Station

Abstract: This procedure contains the requirements for acceptance testing of new instrumentation within the Project W-058 Diversion Box and Vent Station

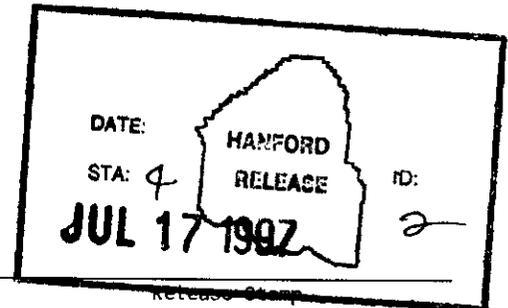
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Release Approval

7/17/97  
Date



**Approved for Public Release**



ACCEPTANCE TEST PROCEDURE HNF-SD-W058-ATP-002

TEST TITLE DIVERSION BOX AND VENT STATION INSTRUMENTATION

LOCATION BUILDINGS 6241-A AND 6241-V

PROJECT NUMBER W-058 WORK ORDER \_\_\_\_\_

PROJECT TITLE REPLACEMENT OF CROSS-SITE TRANSFER SYSTEM

Prepared for  
Lockheed Martin Hanford Company

Prepared By

Fluor Daniel Northwest  
Richland, Washington

PROCEDURE APPROVAL

Fluor Daniel Northwest (FDNW)

<u>Mark Friedlich</u>	<u>7-14-97</u>	<u>Robert B Hoffmann</u>	<u>7-14-97</u>
Author	Date	Technical Documents	Date
<u>C. J. Dammie</u>	<u>7/15/97</u>	<u>NA</u>	_____
Checker	Date	Safety	Date
<u>NA</u>	_____	<u>Larry R. Hall</u>	<u>7-14-97</u>
Environmental	Date	Quality Engineering	Date
<u>[Signature]</u>	<u>7/15/97</u>	_____	_____
Project Management	Date	_____	_____

Lockheed Martin Hanford Corp. (~~LMHC~~)

<u>Mark Parsons</u>	<u>7-17-97</u>	<u>Larry R. Hall</u>	<u>7-14-97</u>
Projects Department	Date	Quality Assurance	Date
<u>m. o. [Signature]</u>	<u>7/17/97</u>	<u>[Signature]</u>	<u>7-17-97</u>
Safety	Date	Operations	Date

EXECUTION AND TEST APPROVAL

EXECUTED BY

_____ Test Director/Organization	_____ Date	_____ Test Operator/Organization	_____ Date
_____ Recorder/Organization	_____ Date		

WITNESSES

_____ Witness/Organization	_____ Date	_____ Title III Inspector	_____ Date
_____ Witness/Organization	_____ Date	_____ Witness/Organization	_____ Date

A-E APPROVAL

Fluor Daniel Northwest (FDNW)

Without exceptions \_\_\_\_\_      With exceptions resolved \_\_\_\_\_      With exceptions outstanding \_\_\_\_\_

_____ Acceptance Inspection	_____ Date	_____ Design Engineer	_____ Date
_____ Project Manager	_____ Date		

TEST APPROVAL AND ACCEPTANCE

Lockheed Martin Hanford Corp. (LMHC)

Without exceptions \_\_\_\_\_      With exceptions resolved \_\_\_\_\_      With exceptions outstanding \_\_\_\_\_

_____ NHC Projects Department	_____ Date	_____ Quality Assurance	_____ Date
_____ Safety	_____ Date	_____ Operations	_____ Date

## TABLE OF CONTENTS

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NOTE: At completion of test, enter pages added during performance of test to this Table of Contents.

## 1 PURPOSE

This Acceptance Test Procedure (ATP) has been prepared to demonstrate that the Instrumentation systems function as required by project criteria and HNF-SD-W058-SUP-002.

## 2 REFERENCES

### 2.1 DRAWINGS

H-2-822336, Sh 1, Rev 1	Piping Plan Diversion Box 6241-A
H-2-822336, Sh 2, Rev 1	Piping Plan Diversion Box 6241-A
H-2-822403, Sh 1, Rev 2	P&ID Diversion Box 6241-A
H-2-822404, Sh 1, Rev 2	P&ID Vent Station 6241-V
H-2-822421, Sh 1, Rev 1	Instrumentation, Plans & Elevations PCU-2 & Misc Instruments
H-2-822421, Sh 2, Rev 1	Instrumentation, Plans & Elevations PCU-2 & Misc Instruments
H-2-822441, Sh 1, Rev 0	Electrical Plan, Elevation, Detail and Elementary Diag
H-2-822513, Sh 3, Rev 1	Electrical Elementary Diagrams Diversion Box 6241-A
H-2-822513, Sh 5, Rev 1	Electrical Elementary Diagrams Diversion Box 6241-A
H-2-822513, Sh 9, Rev 1	Electrical Elementary Diagrams Diversion Box 6241-A
H-6-13994, Sh 1, Rev 2	Piping Plan Vent Station 6241-V
H-6-13994, Sh 2, Rev 1	Piping Plan Vent Station 6241-V
H-6-14018, Sh 1, Rev 0	Electrical Elementary Diagrams Vent Station 6241-V
H-6-14034, Sh 1, Rev 1	Instrumentation, Plans & Elevations PCU-3 & Misc Instruments
H-6-14034, Sh 2, Rev 1	Instrumentation, Plans & Elevations PCU-3 & Misc Instruments

### 2.2 SPECIFICATIONS

W-058-C3, Rev 1	Construction Specification
W-058-P2, Rev 3	Process Monitor and Control System
W-058-P5, Rev 0	Process Instruments

### 2.3 OTHER DOCUMENTS

HNF-SD-W058-SUP-002	Project W-058 Startup Test Plan
---------------------	---------------------------------

## 3 RESPONSIBILITIES

### 3.1 GENERAL

Each company or organization participating in this ATP will designate personnel to assume the responsibilities and duties as defined herein for their respective roles. The designees shall become familiar with this ATP and the systems involved to the extent that they can perform their assigned duties.

### 3.2 NHC PROJECT ENGINEER

- 3.2.1 Designates a Test Director.
- 3.2.2 Coordinates testing with the 200-W Area Manager.
- 3.2.3 Acts as liaison between the participants in acceptance testing.
- 3.2.4 Distributes the approved testing schedule before start of testing.
- 3.2.5 Schedules and conducts a pretest kickoff meeting with test participants when necessary.
- 3.2.6 Notifies the persons supporting the test 2 days before the start of testing.
- 3.2.7 Schedules a dry run when necessary.
- 3.2.8 Notifies concerned parties when a change is made in the testing schedule.
- 3.2.9 Signs Execution and Test Approval page when test is approved and accepted.
- 3.2.10 Takes necessary action to clear exceptions to the test.
- 3.2.11 Signs Exception Form when exception has been resolved.
- 3.2.12 Provides a distribution list for the approved and accepted ATP.

### 3.3 TEST DIRECTOR

- 3.3.1 Coordinates and directs acceptance testing.
- 3.3.2 Confirms that field testing and inspection of the system or portion of the system to be tested has been completed.
- 3.3.3 Stops any test which, in his or her judgment, may cause damage to the system until the problem has been resolved.
- 3.3.4 After verifying there is no adverse impact, may alter the sequence in which systems or subsystems are tested.
- 3.3.5 Ensures that required environmental conditions are maintained.
- 3.3.6 If a test is to be suspended for a period of time, ensures that the system is left in a safe mode.
- 3.3.7 Before restarting suspended test, re-verifies the test prerequisites.
- 3.3.8 Initiates ECNs to document required changes to the ATP.
- 3.3.9 Reviews recorded data, discrepancies, and exceptions.
- 3.3.10 Obtains information or changes necessary to clear or resolve objections during the performance of the test.

- 3.3.11 Signs Execution and Test Approval page when test has been performed.
- 3.3.12 Signs Exception Form when exception has been resolved.
- 3.3.13 Obtains required signatures on the ATP Master prior to reproduction and distribution.
- 3.4 WITNESSES (Provided by Participating Organizations. One witness shall be a Title III acceptance inspector.)
  - 3.4.1 Witness the tests.
  - 3.4.2 Review results of testing.
  - 3.4.3 Assist the Test Director when requested.
  - 3.4.4 Sign Execution and Test Approval page when test has been performed.
  - 3.4.5 Sign Exception Form when exception has been resolved.
- 3.5 RECORDER (Provided by FDNW)
  - 3.5.1 Prepares a Field copy from the ATP Master.
  - 3.5.2 Records names of all designated personnel on Field copy of ATP prior to start of testing.
  - 3.5.3 Records test instrument identification numbers and calibration expiration dates, as required.
  - 3.5.4 Initials and dates every test step on the Field copy as it is completed next to the step number or on a Data Sheet, when provided. Records test data. On Data Sheets where there is not room for both the initial and date, date may be entered at bottom of column.
  - 3.5.5 Records objections and exceptions on an Exception Form. Uses additional Exception Forms as needed. Notifies the Test Director at time the objection is made.
  - 3.5.6 Signs Execution and Test Approval page when test has been performed.
  - 3.5.7 After test is finished, assigns alpha numeric page numbers to added Data Sheets and Exception Forms. Records page numbers in the Table of Contents.
  - 3.5.8 Transfers Field copy entries for each step to the Master in ink or type, signs, and dates. Transmits the completed Master to the Test Director for approval signature routing. Transmits the Field copy to Construction Document Control for inclusion in the official project file.
  - 3.5.9 Signs Exception Form when exception has been resolved and transmits to Test Director.

### 3.6 TEST OPERATOR

- 3.6.1 Performs test under direction of the Test Director.
- 3.6.2 Provides labor, equipment, and test instruments required for performing tests which have not been designated as being provided by others.
- 3.6.3 Requests in writing from the Test Director those services, materials, or equipment that have been designated as being supplied by others.
- 3.6.4 Confirms that all equipment required for performing test will be available at the start of testing.
- 3.6.5 Signs the Execution and Test Approval page.

### 3.7 A-E ACCEPTANCE INSPECTION, DESIGN ENGINEER, AND PROJECT MANAGER

- 3.7.1 Evaluate results.
- 3.7.2 Sign for A-E Approval on Execution and Test Approval page.

## 4 CHANGE CONTROL

Test procedure editorial changes required during testing may be accommodated as exceptions in the released ATP and Test Report, if the changes cannot affect operating facility safety, function, or performance and will not compromise or influence test data. Requirement changes, changes to acceptance criteria, or changes to Danger, Caution, Special Precautions, or other safety or environmental instructions must be processed on ECNs in accordance with company procedures, and if a need for change is discovered in the course of running the test, the test shall be stopped until the ECN is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

## 5 EXECUTION

### 5.1 OCCUPATIONAL SAFETY AND HEALTH

Individuals shall carry out their assigned work in a safe manner to protect themselves and others from undue hazards and to prevent damage to property and environment. Facility line managers shall assure the safety of activities within their areas to prevent injury, property damage, or interruption of operation. Performance of test activities shall always include safety and health aspects.

### 5.2 PERFORMANCE

- 5.2.1 Conduct testing in accordance with CON 3.5. (Performance and Recording of Acceptance Test Procedures.)
- 5.2.2 Perform test following the steps and requirements of this procedure.

## 6 EXCEPTIONS

### 6.1 GENERAL

Exceptions to the required test results are sequentially numbered and recorded on individual Exception Forms. This enables case-by-case resolution and approval of each exception.

Errors/exceptions in the ATP itself shall NOT be processed as test exceptions (see Section 4 CHANGE CONTROL).

### 6.2 RECORDING

6.2.1 Number each exception sequentially as it occurs and record it on an Exception Form (KEH-428), sample appended.

6.2.2 Enter name and organization of objecting party for each exception.

6.2.3 Enter planned action to resolve each exception when such determination is made.

### 6.3 RETEST/RESOLUTION

Record the action taken to resolve each exception. Action taken may not be the same as planned action.

6.3.1 When action taken results in an acceptable retest, sign and date Retest Execution and Acceptance section of the Exception Form.

6.3.2 When action taken does not involve an acceptable retest, strike out the Retest Execution and Acceptance section of the Exception Form.

### 6.4 APPROVAL AND ACCEPTANCE

The customer provides final approval and acceptance of exceptions by checking one of the following on Exception Form.

6.4.1 Retest Approved and Accepted: Applicable when Retest Execution and Acceptance section is completed.

6.4.2 Exception Accepted-As-Is: Requires detailed explanation.

6.4.3 Other: Requires detailed explanation.

The customer signs and dates the Exception Form and obtains other customer internal approvals, if required.

### 6.5 DISTRIBUTION

A copy of the approved Exception Form is distributed to each participant. The signed original is attached to the ATP Master.

7 PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS

7.1 PREREQUISITES

The following conditions shall exist at start of testing for that portion of the system being tested.

- 7.1.1 Systems have been inspected for compliance with construction documents.
- 7.1.2 Reference documents (including this ATP) have been verified for correct revision number and outstanding ECNs.
- 7.1.3 A Prejob Safety Analysis has been prepared and a Prejob Safety Meeting has been conducted.
- 7.1.4 Test instruments have a valid calibration stamp attached. Test instrument identification numbers and calibration expiration dates have been recorded in Para 7.2.
- 7.1.5 Methods of water disposal have been approved by Facilities Management.
- 7.1.6 Power is available.
- 7.1.7 Voice communication is available between the 6241-A diversion box and the 242-S control room.
- 7.1.8 Voice communication is available between the 6241-V vent station and the 242-S control room.

7.2 EQUIPMENT/INSTRUMENTS

Supplied by Test Operator unless otherwise noted.

- 7.2.1 Process Instrument Calibrator (PIC): Output 4-20 mA, 0-5 V; input 4-20 mA, 0-5 V; accuracy  $\pm 0.01$  mA, 0.1 V.  
Manufacturer \_\_\_\_\_ Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_  
Calibration Date \_\_\_\_\_ Expiration Date \_\_\_\_\_
- 7.2.2 Surface Pyrometer  
Manufacturer \_\_\_\_\_ Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_  
Calibration Date \_\_\_\_\_ Expiration Date \_\_\_\_\_
- 7.2.3 Variable Test Pressure Source (VTPS): 3000 psi range, with flexible tubing and adapter.  
Manufacturer \_\_\_\_\_ Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_  
Calibration Date \_\_\_\_\_ Expiration Date \_\_\_\_\_
- 7.2.4 Container: To hold water for leak detector tests, 4 inches deep.

- 7.2.5 Heat Blower, Portable, 47 cfm, with heater switch control.
- 7.2.6 6-foot leak detector test cable with BNC connector.
- 7.2.7 Rag or paper towel to dry leak detector.

### 7.3 ABBREVIATIONS

- ECN Engineering Change Notice
- OIM Operator Interface Machine (located in the 242-S control room)
- RWP Radiation Work Permit
- SWP Special Work Procedure

8 PREPARATION

8.1 PERFORM FOLLOWING STEPS BEFORE BEGINNING TESTS.

\_\_\_\_\_ 8.1.1 Verify all prerequisites of Para 7.1 have been met.

NOTE: Keep appropriate personnel informed as to test status.

END OF SECTION 8

9 DIVERSION BOX INSTRUMENTATION TEST

This test will demonstrate the integrity of the instruments associated with the diversion box.

9.1 DIVERSION BOX TRANSFER VALVES

Record the following steps for the transfer valves shown on Data Sheet 9.1.

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1 and 2, and H-2-822421, Sh 1.)

- 9.1.1 From OIM initiate opening of transfer valve.
- 9.1.2 Physically verify that transfer valve is fully open  $\pm$  5% of travel.
- 9.1.3 Verify at OIM, that valve position indication is open.
- 9.1.4 From OIM initiate closing of transfer valve.
- 9.1.5 Physically verify that transfer valve is fully closed  $\pm$  5% of travel.
- 9.1.6 Verify at OIM, that valve position indication is closed.
- 9.1.7 Repeat Steps 9.1.1 through 9.1.6 for all transfer valves on Data Sheet 9.1.

07/01/97

DATA SHEET 9.1													
STEP	PERFORM/VERIFY	SOV-3182A	SOV-3182B	SOV-3184	SOV-3183A	SOV-3183B	SOV-3125C	SOV-3125D	SOV-3125E	SOV-3125G	SOV-3173A	SOV-3173B	SOV-3163
9.1.1	OIM open valve												
9.1.2	Valve open												
9.1.3	Read OIM												
9.1.4	OIM close valve												
9.1.5	Valve closed												
9.1.6	Read OIM												

## 9.2 LEAK DETECTOR LDE-3150

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1 and 2, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.2.1 At PCU-1, located in the 252-S Building, connect a VOM to terminals 11 and 12 of terminal block TB-3, and verify that it reads 120 V ac.
- \_\_\_\_\_ 9.2.2 Verify at OIM that LDA-3150 is not activated.
- \_\_\_\_\_ 9.2.3 Immerse sensor LDE-3150 in container of water.
- \_\_\_\_\_ 9.2.4 Verify at OIM that LDA-3150 is activated.
- \_\_\_\_\_ 9.2.5 Verify that the VOM reads 0 V ac.
- \_\_\_\_\_ 9.2.6 Remove sensor from water and dry.
- \_\_\_\_\_ 9.2.7 Verify at OIM that LDA-3150 returns to normal.
- \_\_\_\_\_ 9.2.8 Verify that the VOM reads 120 V ac.
- \_\_\_\_\_ 9.2.9 Disconnect VOM.
- \_\_\_\_\_ 9.2.10 Verify at OIM that LDXA-3150 is not activated.
- \_\_\_\_\_ 9.2.11 Disconnect wire from terminal 7 of LDK-3150.
- \_\_\_\_\_ 9.2.12 Verify at OIM that LDXA-3150 is activated.
- \_\_\_\_\_ 9.2.13 Reconnect wire to terminal 7 of LDK-3150.
- \_\_\_\_\_ 9.2.14 Verify at OIM that LDXA-3150 is not activated.

## 9.3 SLURRY LINE TEMPERATURE SENSOR TE-3125A

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.3.1 Verify at OIM that TI-3125A reads ambient temperature.
- \_\_\_\_\_ 9.3.2 Attach surface pyrometer next to temperature sensor TE-3125A, located at the non-insulated section of process line WT-SLL-3160(3"-M9).
- \_\_\_\_\_ 9.3.3 Direct heat gun at non-insulated section of pipe until TI-3125A reads  $150 \pm 5$  °F.
- \_\_\_\_\_ 9.3.4 Verify that pyrometer temperature reading is  $145 \pm 5$  °F.
- \_\_\_\_\_ 9.3.5 After approximately 10 minutes, verify that TI-3125A reads within 5 °F of pyrometer reading.
- \_\_\_\_\_ 9.3.6 Detach surface pyrometer.

#### 9.4 SUPERNATE LINE TEMPERATURE SENSOR TE-3125B

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.4.1 Verify at OIM that TI-3125B reads ambient temperature.
- \_\_\_\_\_ 9.4.2 Attach surface pyrometer next to temperature sensor TE-3125B, located at the non-insulated section of process line WT-SLL-3150(3"-M9).
- \_\_\_\_\_ 9.4.3 Direct heat gun at non-insulated section of pipe until TI-3125B reads  $150 \pm 5$  °F.
- \_\_\_\_\_ 9.4.4 Verify that pyrometer temperature reading is  $145 \pm 5$  °F.
- \_\_\_\_\_ 9.4.5 After approximately 10 minutes, verify that TI-3125B reads within 5 °F of pyrometer reading.
- \_\_\_\_\_ 9.4.6 Detach surface pyrometer.

#### 9.5 SUPERNATE LINE PRESSURE SENSOR PT-3125E

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.5.1 Close isolation valve to pressure transmitter PT-3125E.
- \_\_\_\_\_ 9.5.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 9.5.3 Verify at OIM that PI-3125E reads  $0 \pm 6$  psig.
- \_\_\_\_\_ 9.5.4 Increase pressure until VTPS reads 150 psig.
- \_\_\_\_\_ 9.5.5 Verify at OIM that PI-3125E reads  $150 \pm 6$  psig.
- \_\_\_\_\_ 9.5.6 Increase pressure until VTPS reads 300 psig.
- \_\_\_\_\_ 9.5.7 Verify at OIM that PI-3125E reads  $300 \pm 6$  psig.
- \_\_\_\_\_ 9.5.8 Decrease pressure until VTPS reads 150 psig.
- \_\_\_\_\_ 9.5.9 Verify at OIM that PI-3125E reads  $150 \pm 6$  psig.
- \_\_\_\_\_ 9.5.10 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 9.5.11 Verify at OIM that PI-3125E reads  $0 \pm 6$  psig.
- \_\_\_\_\_ 9.5.12 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 9.5.13 Open isolation valve.

9.6 SUPERNATE LINE DRAIN VALVE MOV-3156A (Reference Drawing H-2-822513, Sh 5.)

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822337, Sh 1, and H-2-822421, Sh 1.)

9.6.1 From OIM initiate opening of drain valve MOV-3156A.

9.6.2 Physically verify that drain valve MOV-3156A is fully open  $\pm$  5% of travel.

9.6.3 Verify at OIM, that drain valve MOV-3156A position indication is open.

9.6.4 From OIM initiate closing of drain valve MOV-3156A.

9.6.5 Physically verify that drain valve MOV-3156A is fully closed  $\pm$  5% of travel.

9.6.6 Verify at OIM, that drain valve MOV-3156A position indication is closed.

9.7 SUPERNATE LINE DRAIN VALVE MOV-3156B

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822337, Sh 1, and H-2-822421, Sh 1.)

9.7.1 From OIM initiate opening of drain valve MOV-3156B.

9.7.2 Physically verify that drain valve MOV-3156B is fully open  $\pm$  5% of travel.

9.7.3 Verify at OIM, that drain valve MOV-3156B position indication is open.

9.7.4 From OIM initiate closing of drain valve MOV-3156B.

9.7.5 Physically verify that drain valve MOV-3156B is fully closed  $\pm$  5% of travel.

9.7.6 Verify at OIM, that drain valve MOV-3156B position indication is closed.

9.8 BOOSTER PUMP P-3125A INLET/PRESSURE TRANSMITTER PT-3125A

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

9.8.1 Close isolation valve to pressure transmitter PT-3125A.

9.8.2 Install VTPS to calibration port of isolation valve.

9.8.3 Verify at OIM that PI-3125A reads  $0 \pm 2$  psig.

9.8.4 Increase pressure until VTPS reads 50 psig.

9.8.5 Verify at OIM that PI-3125A reads  $50 \pm 2$  psig.

- \_\_\_\_\_ 9.8.6 Verify at OIM that PAH-3125A is not activated.
- \_\_\_\_\_ 9.8.7 Increase pressure until VTPS reads 100 psig.
- \_\_\_\_\_ 9.8.8 Verify at OIM that PI-3125A reads  $100 \pm 2$  psig.
- \_\_\_\_\_ 9.8.9 Verify at OIM that PAH-3125A is activated.
- \_\_\_\_\_ 9.8.10 Decrease pressure until VTPS reads 50 psig.
- \_\_\_\_\_ 9.8.11 Verify at OIM that PI-3125A reads  $50 \pm 2$  psig.
- \_\_\_\_\_ 9.8.12 Verify at OIM that PAH-3125A is not activated.
- \_\_\_\_\_ 9.8.13 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 9.8.14 Verify at OIM that PI-3125A reads  $0 \pm 2$  psig.
- \_\_\_\_\_ 9.8.15 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 9.8.16 Open isolation valve.

9.9 BOOSTER PUMP P-3125B INLET PRESSURE TRANSMITTER PT-3125B

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.9.1 Close isolation valve to pressure transmitter PT-3125B.
- \_\_\_\_\_ 9.9.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 9.9.3 Verify at OIM that PI-3125B reads  $0 \pm 2$  psig.
- \_\_\_\_\_ 9.9.4 Increase pressure until VTPS reads 50 psig.
- \_\_\_\_\_ 9.9.5 Verify at OIM that PI-3125B reads  $50 \pm 2$  psig.
- \_\_\_\_\_ 9.9.6 Verify at OIM that PAH-3125B is not activated.
- \_\_\_\_\_ 9.9.7 Increase pressure until VTPS reads 100 psig.
- \_\_\_\_\_ 9.9.8 Verify at OIM that PI-3125B reads  $100 \pm 2$  psig.
- \_\_\_\_\_ 9.9.9 Verify at OIM that PAH-3125B is activated.
- \_\_\_\_\_ 9.9.10 Decrease pressure until VTPS reads 50 psig.
- \_\_\_\_\_ 9.9.11 Verify at OIM that PI-3125B reads  $50 \pm 2$  psig.
- \_\_\_\_\_ 9.9.12 Verify at OIM that PAH-3125B is not activated.
- \_\_\_\_\_ 9.9.13 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 9.9.14 Verify at OIM that PI-3125B reads  $0 \pm 2$  psig.
- \_\_\_\_\_ 9.9.15 Disconnect VTPS from isolation valve.

- \_\_\_\_\_ 9.9.16 Open isolation valve.
- 9.10 BOOSTER PUMP P-3125A OUTLET PRESSURE TRANSMITTER PT-3125C
- NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)
- \_\_\_\_\_ 9.10.1 Close isolation valve to pressure transmitter PT-3125C.
- \_\_\_\_\_ 9.10.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 9.10.3 Verify at OIM that PI-3125C reads  $0 \pm 60$  psig.
- \_\_\_\_\_ 9.10.4 Increase pressure until VTPS reads 1500 psig.
- \_\_\_\_\_ 9.10.5 Verify at OIM that PI-3125C reads  $1500 \pm 60$  psig.
- \_\_\_\_\_ 9.10.6 Verify at OIM that PAH-3125C is not activated.
- \_\_\_\_\_ 9.10.7 Increase pressure until VTPS reads 3000 psig.
- \_\_\_\_\_ 9.10.8 Verify at OIM that PI-3125C reads  $3000 \pm 60$  psig.
- \_\_\_\_\_ 9.10.9 Verify at OIM that PAH-3125C is activated.
- \_\_\_\_\_ 9.10.10 Decrease pressure until VTPS reads 1500 psig.
- \_\_\_\_\_ 9.10.11 Verify at OIM that PI-3125C reads  $1500 \pm 60$  psig.
- \_\_\_\_\_ 9.10.12 Verify at OIM that PAH-3125C is not activated.
- \_\_\_\_\_ 9.10.13 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 9.10.14 Verify at OIM that PI-3125C reads  $0 \pm 60$  psig.
- \_\_\_\_\_ 9.10.15 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 9.10.16 Open isolation valve.
- 9.11 BOOSTER PUMP P-3125B OUTLET PRESSURE TRANSMITTER PT-3125D
- NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)
- \_\_\_\_\_ 9.11.1 Close isolation valve to pressure transmitter PT-3125D.
- \_\_\_\_\_ 9.11.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 9.11.3 Verify at OIM that PI-3125D reads  $0 \pm 60$  psig.
- \_\_\_\_\_ 9.11.4 Increase pressure until VTPS reads 1500 psig.
- \_\_\_\_\_ 9.11.5 Verify at OIM that PI-3125D reads  $1500 \pm 60$  psig.
- \_\_\_\_\_ 9.11.6 Verify at OIM that PAH-3125D is not activated.

- \_\_\_\_\_ 9.11.7 Increase pressure until VTPS reads 3000 psig.
- \_\_\_\_\_ 9.11.8 Verify at OIM that PI-3125D reads  $3000 \pm 60$  psig.
- \_\_\_\_\_ 9.11.9 Verify at OIM that PAH-3125D is activated.
- \_\_\_\_\_ 9.11.10 Decrease pressure until VTPS reads 1500 psig.
- \_\_\_\_\_ 9.11.11 Verify at OIM that PI-3125D reads  $1500 \pm 60$  psig.
- \_\_\_\_\_ 9.11.12 Verify at OIM that PAH-3125D is not activated.
- \_\_\_\_\_ 9.11.13 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 9.11.14 Verify at OIM that PI-3125D reads  $0 \pm 60$  psig.
- \_\_\_\_\_ 9.11.15 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 9.11.16 Open isolation valve.

9.12 SUMP LINE MISROUTE PROTECTION PRESSURE TRANSMITTER PT-3173

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.12.1 Close isolation valve to pressure transmitter PT-3173.
- \_\_\_\_\_ 9.12.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 9.12.3 Verify at OIM that PI-3173 reads  $0 \pm 5$  psig.
- \_\_\_\_\_ 9.12.4 Increase pressure until VTPS reads 25 psig.
- \_\_\_\_\_ 9.12.5 Verify at OIM that PI-3173 reads  $25 \pm 5$  psig.
- \_\_\_\_\_ 9.12.6 Verify at OIM that PAH-3173 is not activated.
- \_\_\_\_\_ 9.12.7 Increase pressure until VTPS reads 50 psig.
- \_\_\_\_\_ 9.12.8 Verify at OIM that PI-3173 reads  $50 \pm 5$  psig.
- \_\_\_\_\_ 9.12.9 Verify at OIM that PAH-3173 is activated.
- \_\_\_\_\_ 9.12.10 Decrease pressure until VTPS reads 25 psig.
- \_\_\_\_\_ 9.12.11 Verify at OIM that PI-3173 reads  $25 \pm 5$  psig.
- \_\_\_\_\_ 9.12.12 Verify at OIM that PAH-3173 returns to normal.
- \_\_\_\_\_ 9.12.13 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 9.12.14 Verify at OIM that PI-3173 reads  $0 \pm 5$  psig.
- \_\_\_\_\_ 9.12.15 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 9.12.16 Open isolation valve.

9.13 SUPERNATE LINE PRESSURE TRANSMITTER PT-3182

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.13.1 Close isolation valve to pressure transmitter PT-3182.
- \_\_\_\_\_ 9.13.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 9.13.3 Verify at OIM that PI-3182 reads  $0 \pm 6$  psig.
- \_\_\_\_\_ 9.13.4 Increase pressure until VTPS reads 300 psig.
- \_\_\_\_\_ 9.13.5 Verify at OIM that PI-3182 reads  $300 \pm 6$  psig.
- \_\_\_\_\_ 9.13.6 Verify at OIM that PAH-3182 is activated.
- \_\_\_\_\_ 9.13.7 Decrease pressure until VTPS reads 25 psig.
- \_\_\_\_\_ 9.13.8 Verify at OIM that PI-3182 reads  $25 \pm 6$  psig.
- \_\_\_\_\_ 9.13.9 Verify at OIM that PAH-3182 is not activated.
- \_\_\_\_\_ 9.13.10 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 9.13.11 Verify at OIM that PI-3182 reads  $0 \pm 6$  psig.
- \_\_\_\_\_ 9.13.12 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 9.13.13 Open isolation valve.

9.14 SUMP LINE MISROUTE PROTECTION PRESSURE TRANSMITTER PT-3183

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.14.1 Close isolation valve to pressure transmitter PT-3183.
- \_\_\_\_\_ 9.14.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 9.14.3 Verify at OIM that PI-3183 reads  $0 \pm 2$  psig.
- \_\_\_\_\_ 9.14.4 Increase pressure until VTPS reads 100 psig.
- \_\_\_\_\_ 9.14.5 Verify at OIM that PI-3183 reads  $100 \pm 2$  psig.
- \_\_\_\_\_ 9.14.6 Verify at OIM that PAH-3183 is activated.
- \_\_\_\_\_ 9.14.7 Decrease pressure until VTPS reads 25 psig.
- \_\_\_\_\_ 9.14.8 Verify at OIM that PI-3183 reads  $25 \pm 2$  psig.
- \_\_\_\_\_ 9.14.9 Verify at OIM that PAH-3183 is not activated.
- \_\_\_\_\_ 9.14.10 Decrease pressure until VTPS reads 0 psig.

- \_\_\_\_\_ 9.14.11 Verify at OIM that PI-3183 reads  $0 \pm 4$  psig.
- \_\_\_\_\_ 9.14.12 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 9.14.13 Open isolation valve.

9.15 SLURRY LINE FLOW TRANSMITTER FIT-3125

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawings H-2-822336, Sh 1, and H-2-822421, Sh 1.)

- \_\_\_\_\_ 9.15.1 Disconnect Wire FT-3125(+) from Flow Transmitter FIT-3125 and connect to positive lead of PIC.
- \_\_\_\_\_ 9.15.2 Disconnect Wire FT-3125(-) from transmitter and connect to negative lead of PIC.
- \_\_\_\_\_ 9.15.3 Set PIC to 4 mA.
- \_\_\_\_\_ 9.15.4 Verify at OIM that FI-3125 reads  $0 \pm 4$  gpm.
- \_\_\_\_\_ 9.15.5 Set PIC to 12 mA.
- \_\_\_\_\_ 9.15.6 Verify at OIM that FI-3125 reads  $100 \pm 4$  gpm.
- \_\_\_\_\_ 9.15.7 Set PIC to 20 mA.
- \_\_\_\_\_ 9.15.8 Verify at OIM that FI-3125 reads  $200 \pm 4$  gpm.
- \_\_\_\_\_ 9.15.9 Disconnect PIC.
- \_\_\_\_\_ 9.15.10 Reconnect Wires FT-3125(+) and FT-3125(-) to Flow Transmitter FIT-3125.

9.16 AIR COMPRESSOR SA-CMP-3101A LOW PRESSURE

- \_\_\_\_\_ 9.16.1 At OIM, verify PAL-3100A is activated.
- \_\_\_\_\_ 9.16.2 Close valve IA-V-3105A.
- \_\_\_\_\_ 9.16.3 Turn on Compressor SA-CMP-3101A.
- \_\_\_\_\_ 9.16.4 After compressor has completed its recharge, verify at OIM that PAL-3100A returns to normal.
- \_\_\_\_\_ 9.16.5 Turn off Compressor SA-CMP-3101A, located in the compressor room of Diversion Box 6241-A.
- \_\_\_\_\_ 9.16.6 Open Valve IA-V-3103A, located on air header line IA(175#)-3100(1"-M7), for approximately 20 seconds then close valve.
- \_\_\_\_\_ 9.16.7 At OIM, verify PAL-3100A is activated.
- \_\_\_\_\_ 9.16.8 Turn on Compressor SA-CMP-3101A.

\_\_\_\_\_ 9.16.9 After compressor has completed its recharge, verify at OIM that PAL-3100A returns to normal.

\_\_\_\_\_ 9.16.10 Open valve IA-V-3105A.

### 9.17 DIVERSION BOX 6241-A TRANSFER LINE LEAK DETECTION

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawing H-2-822421, Sh 1 and 2.)

\_\_\_\_\_ 9.17.1 Verify at OIM that LDA-3160 is not activated.

\_\_\_\_\_ 9.17.2 At PCU-1, located in the 252-S Building, connect VOM to terminals 11 and 12 of terminal block TB-3, and verify that it reads 120 V ac.

\_\_\_\_\_ 9.17.3 At Leak Detector Relay LDK-3160, install 6-foot leak detection test cable to BNC Cable Receptacle 5.

\_\_\_\_\_ 9.17.4 Immerse cable in container of water.

\_\_\_\_\_ 9.17.5 Verify at OIM that LDA-3160 is activated.

\_\_\_\_\_ 9.17.6 Verify that VOM reads 0 V ac.

\_\_\_\_\_ 9.17.7 Remove cable and let dry.

\_\_\_\_\_ 9.17.8 Verify at OIM that LDA-3160 returns to normal.

\_\_\_\_\_ 9.17.9 Verify that VOM reads 120 V ac.

\_\_\_\_\_ 9.17.10 Disconnect VOM.

\_\_\_\_\_ 9.17.11 Disconnect test cable.

### 9.18 SUMP PUMP P-3115 (Reference Drawing H-2-822513, Sh 3)

NOTE: All steps are performed at the 6241-A diversion box unless otherwise noted. (Reference Drawing H-2-822421, Sh 1 and 2.)

\_\_\_\_\_ 9.18.1 Verify that HS-3115 is in the OFF position.

\_\_\_\_\_ 9.18.2 Lock and tag circuit breaker 2-6 located in switchboard SB-1 OPEN.

\_\_\_\_\_ 9.18.3 Lift T-leads to sump pump P-3115 motor.

\_\_\_\_\_ 9.18.4 Remove lock and tag and close circuit breaker 2-6 located in switchboard SB-1.

\_\_\_\_\_ 9.18.5 At PCU-2A, connect a jumper across terminals TB2-59 and TB2-60.

\_\_\_\_\_ 9.18.6 Verify that the red pump ON status light is OFF.

\_\_\_\_\_ 9.18.7 Verify that the green pump OFF status light is ON.

\_\_\_\_\_ 9.18.8 Put HS-3115 in the ON position.

- \_\_\_\_\_ 9.18.9 Verify that the red pump ON status light is ON.
- \_\_\_\_\_ 9.18.10 Verify that the green pump OFF status light is OFF.
- \_\_\_\_\_ 9.18.11 Using voltmeter verify 480 V, 3-phase on load side of pump P-3115 M1 contactor.
- \_\_\_\_\_ 9.18.12 Put HS-3115 in the OFF position.
- \_\_\_\_\_ 9.18.13 Verify that the red pump ON status light is OFF.
- \_\_\_\_\_ 9.18.14 Verify that the green pump OFF status light is ON.
- \_\_\_\_\_ 9.18.15 Put HS-3115 in the ON position.
- \_\_\_\_\_ 9.18.16 Verify that the red pump ON status light is ON.
- \_\_\_\_\_ 9.18.17 Verify that the green pump OFF status light is OFF.
- \_\_\_\_\_ 9.18.18 Disconnect jumper.
- \_\_\_\_\_ 9.18.19 Verify that the red pump ON status light is OFF.
- \_\_\_\_\_ 9.18.20 Verify that the green pump OFF status light is ON.
- \_\_\_\_\_ 9.18.21 Put HS-3115 in the OFF position.
- \_\_\_\_\_ 9.18.22 Lock and tag circuit breaker 2-6 OPEN.
- \_\_\_\_\_ 9.18.23 Reconnect T-leads to sump pump P-3115 motor.
- \_\_\_\_\_ 9.18.24 Remove lock and tag from circuit breaker 2-6.

END OF SECTION 9

10 VENT STATION INSTRUMENTATION TEST

This test will demonstrate the integrity of the instruments associated with the vent station.

10.1 VENT STATION TRANSFER VALVES

Record the following steps for the transfer valves shown on Data Sheet 10.1.

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 2, and H-6-14034, Sh 1 and 2.)

NOTE: OIM is located in the 242-S control room.

10.1.1 From OIM initiate opening of transfer valve.

10.1.2 Physically verify that transfer valve is fully open  $\pm$  5% of travel.

10.1.3 Verify at OIM, that valve position indication is open.

10.1.4 From OIM initiate closing of transfer valve.

10.1.5 Physically verify that transfer valve is fully closed  $\pm$  5% of travel.

10.1.6 Verify at OIM, that valve position indication is closed.

10.1.7 Repeat Steps 10.1.1 through 10.1.6 for all transfer valves on Data Sheet 10.1.

DATA SHEET 10.1

STEP	PERFORM/VERIFY	SOV-3165A	SOV-3165B	SOV-3166A	SOV-3166B	SOV-3167A	SOV-3167B	SOV-3168A	SOV-3168B	SOV-3185A	SOV-3185B
10.1.1	OIM open valve										
10.1.2	Valve open										
10.1.3	Read OIM										
10.1.4	OIM close valve										
10.1.5	Valve closed										
10.1.6	Read OIM										

## 10.2 LEAK DETECTOR LDE-3151

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 2, and H-6-14034, Sh 1 and 2.)

- \_\_\_\_\_ 10.2.1 At PCU-1, located in the 252-S Building, connect a VOM to terminals 11 and 12 of terminal block TB-3, and verify that it reads 120 V ac.
- \_\_\_\_\_ 10.2.2 Verify at OIM that LDA-3151 is not activated.
- \_\_\_\_\_ 10.2.3 Immerse sensor LDE-3151 in container of water.
- \_\_\_\_\_ 10.2.4 Verify at OIM that LDA-3151 is activated.
- \_\_\_\_\_ 10.2.5 Verify that the VOM reads 0 V ac.
- \_\_\_\_\_ 10.2.6 Remove sensor from water and dry.
- \_\_\_\_\_ 10.2.7 Verify at OIM that LDA-3151 returns to normal.
- \_\_\_\_\_ 10.2.8 Verify that the VOM reads 120 V ac.
- \_\_\_\_\_ 10.2.9 Disconnect VOM.
- \_\_\_\_\_ 10.2.10 Verify at OIM that LDXA-3151 is not activated.
- \_\_\_\_\_ 10.2.11 Disconnect wire from terminal 7 of LDK-3151.
- \_\_\_\_\_ 10.2.12 Verify at OIM that LDXA-3151 is activated.
- \_\_\_\_\_ 10.2.13 Disconnect wire to terminal 7 of LDK-3151.
- \_\_\_\_\_ 10.2.14 Verify at OIM that LDXA-3151 is not activated.

## 10.3 SUPERNATE LINE TEMPERATURE SENSOR TE-3126A

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 1, and H-6-14034, Sh 1 and 2.)

- \_\_\_\_\_ 10.3.1 Verify at OIM that TI-3126A reads ambient temperature.
- \_\_\_\_\_ 10.3.2 Attach surface pyrometer next to temperature sensor TE-3126A, located in uninsulated section of process line WT-SLL-3150(3"-M9).
- \_\_\_\_\_ 10.3.3 Direct heat gun at non-insulated section of pipe until TI-3126A reads  $150 \pm 5$  °F.
- \_\_\_\_\_ 10.3.4 Verify that pyrometer temperature reading is  $145 \pm 5$  °F.
- \_\_\_\_\_ 10.3.5 After approximately 10 minutes, verify that TI-3126A reads within 5 °F of pyrometer reading.
- \_\_\_\_\_ 10.3.6 Detach surface pyrometer.

10.4 SLURRY LINE TEMPERATURE SENSOR TE-3126B

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 1, and H-6-14034, Sh 1 and 2.)

- \_\_\_\_\_ 10.4.1 Verify at OIM that TI-3126B reads ambient temperature.
- \_\_\_\_\_ 10.4.2 Attach surface pyrometer next to temperature sensor TE-3126B, located in the uninsulated section of process line WT-SLL-3160(3"-M9).
- \_\_\_\_\_ 10.4.3 Direct heat gun at non-insulated section of pipe until TI-3126B reads 150 °F.
- \_\_\_\_\_ 10.4.4 Verify that temperature reading is  $145 \pm 5$  °F.
- \_\_\_\_\_ 10.4.5 After approximately 10 minutes, verify that TI-3126B reads within 5 °F of pyrometer reading.
- \_\_\_\_\_ 10.4.6 Detach surface pyrometer.

10.5 SUPERNATE LINE PRESSURE SENSOR PT-3126A

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 1, and H-6-14034, Sh 1 and 2.)

- \_\_\_\_\_ 10.5.1 Close isolation valve to pressure transmitter PT-3126A.
- \_\_\_\_\_ 10.5.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 10.5.3 Verify at OIM that PI-3126A reads  $0 \pm 6$  psig.
- \_\_\_\_\_ 10.5.4 Increase pressure until VTPS reads 150 psig.
- \_\_\_\_\_ 10.5.5 Verify at OIM that PI-3126A reads  $150 \pm 6$  psig.
- \_\_\_\_\_ 10.5.6 Increase pressure until VTPS reads 300 psig.
- \_\_\_\_\_ 10.5.7 Verify at OIM that PI-3126A reads  $300 \pm 6$  psig.
- \_\_\_\_\_ 10.5.8 Decrease pressure until VTPS reads 150 psig.
- \_\_\_\_\_ 10.5.9 Verify at OIM that PI-3126A reads  $150 \pm 6$  psig.
- \_\_\_\_\_ 10.5.10 Decrease pressure until VTPS reads -1 psig.
- \_\_\_\_\_ 10.5.11 Verify at OIM that PI-3126A reads  $-1 \pm 5$  psig.
- \_\_\_\_\_ 10.5.12 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 10.5.13 Open isolation valve.

10.6 SLURRY LINE PRESSURE SENSOR PT-3126B

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 1, and H-6-14034, Sh 1 and 2.)

- \_\_\_\_\_ 10.6.1 Close isolation valve to pressure transmitter PT-3126B.
- \_\_\_\_\_ 10.6.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 10.6.3 Verify at OIM that PI-3126B reads  $0 \pm 20$  psig.
- \_\_\_\_\_ 10.6.4 Increase pressure until VTPS reads 500 psig.
- \_\_\_\_\_ 10.6.5 Verify at OIM that PI-3126B reads  $500 \pm 20$  psig.
- \_\_\_\_\_ 10.6.6 Increase pressure until VTPS reads 1000 psig.
- \_\_\_\_\_ 10.6.7 Verify at OIM that PI-3126B reads  $1000 \pm 20$  psig.
- \_\_\_\_\_ 10.6.8 Decrease pressure until VTPS reads 500 psig.
- \_\_\_\_\_ 10.6.9 Verify at OIM that PI-3126B reads  $500 \pm 20$  psig.
- \_\_\_\_\_ 10.6.10 Bleed off VTPS and disconnect VTPS.
- \_\_\_\_\_ 10.6.11 Open isolation valve.

10.7 SUMP LINE MISROUTE PROTECTION PRESSURE TRANSMITTER PT-3167

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 1, and H-6-14034, Sh 1 and 2.)

- \_\_\_\_\_ 10.7.1 Close isolation valve to pressure transmitter PT-3167.
- \_\_\_\_\_ 10.7.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 10.7.3 Verify at OIM that PI-3167 reads  $0 \pm 2$  psig.
- \_\_\_\_\_ 10.7.4 Increase pressure until VTPS reads 100 psig.
- \_\_\_\_\_ 10.7.5 Verify at OIM that PI-3167 reads  $100 \pm 2$  psig.
- \_\_\_\_\_ 10.7.6 Verify at OIM that PAH-3167 is activated.
- \_\_\_\_\_ 10.7.7 Decrease pressure until VTPS reads 25 psig.
- \_\_\_\_\_ 10.7.8 Verify at OIM that PI-3167 reads  $25 \pm 2$  psig.
- \_\_\_\_\_ 10.7.9 Verify at OIM that PAH-3167 is not activated.
- \_\_\_\_\_ 10.7.10 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 10.7.11 Verify at OIM that PI-3167 reads  $0 \pm 2$  psig.

- \_\_\_\_\_ 10.7.12 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 10.7.13 Open isolation valve.
- 10.8 SUPERNATE VENT LINE MISROUTE PROTECTION PRESSURE TRANSMITTER PT-3185
- NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 1, and H-6-14034, Sh 1 and 2.)
- \_\_\_\_\_ 10.8.1 Close isolation valve to pressure transmitter PT-3185.
- \_\_\_\_\_ 10.8.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 10.8.3 Verify at OIM that PI-3185 reads  $0 \pm 2$  psig.
- \_\_\_\_\_ 10.8.4 Increase pressure until VTPS reads 100 psig.
- \_\_\_\_\_ 10.8.5 Verify at OIM that PI-3185 reads  $100 \pm 2$  psig.
- \_\_\_\_\_ 10.8.6 Verify at OIM that PAH-3185 is activated.
- \_\_\_\_\_ 10.8.7 Decrease pressure until VTPS reads 4 psig.
- \_\_\_\_\_ 10.8.8 Verify at OIM that PI-3185 reads  $4 \pm 2$  psig.
- \_\_\_\_\_ 10.8.9 Verify at OIM that PAH-3185 is not activated.
- \_\_\_\_\_ 10.8.10 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 10.8.11 Verify at OIM that PI-3185 reads  $0 \pm 2$  psig.
- \_\_\_\_\_ 10.8.12 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 10.8.13 Open isolation valve.
- 10.9 SLURRY VENT LINE MISROUTE PROTECTION PRESSURE TRANSMITTER PT-3168
- NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawings H-6-13994, Sh 1, and H-6-14034, Sh 1 and 2.)
- \_\_\_\_\_ 10.9.1 Close isolation valve to pressure transmitter PT-3168.
- \_\_\_\_\_ 10.9.2 Install VTPS to calibration port of isolation valve.
- \_\_\_\_\_ 10.9.3 Verify at OIM that PI-3168 reads  $0 \pm 20$  psig.
- \_\_\_\_\_ 10.9.4 Increase pressure until VTPS reads 1000 psig.
- \_\_\_\_\_ 10.9.5 Verify at OIM that PI-3168 reads  $1000 \pm 20$  psig.
- \_\_\_\_\_ 10.9.6 Verify at OIM that PAH-3168 is activated.
- \_\_\_\_\_ 10.9.7 Decrease pressure until VTPS reads 50 psig.

- \_\_\_\_\_ 10.9.8 Verify at OIM that PI-3168 reads  $50 \pm 20$  psig.
- \_\_\_\_\_ 10.9.9 Verify at OIM that PAH-3168 is not activated.
- \_\_\_\_\_ 10.9.10 Decrease pressure until VTPS reads 0 psig.
- \_\_\_\_\_ 10.9.11 Verify at OIM that PI-3168 reads  $0 \pm 20$  psig.
- \_\_\_\_\_ 10.9.12 Disconnect VTPS from isolation valve.
- \_\_\_\_\_ 10.9.13 Open isolation valve.
- 10.10 AIR COMPRESSOR SA-CMP-3101B LOW PRESSURE
  - \_\_\_\_\_ 10.10.1 At OIM, verify PAL-3100B is activated.
  - \_\_\_\_\_ 10.10.2 Close valve IA-V-3105B.
  - \_\_\_\_\_ 10.10.3 Turn on Compressor SA-CMP-3101B.
  - \_\_\_\_\_ 10.10.4 After compressor has completed its recharge, verify at OIM that PAL-3100B returns to normal.
  - \_\_\_\_\_ 10.10.5 Turn off Compressor SA-CMP-3101B, located in the compressor room of Diversion Box 6241-V.
  - \_\_\_\_\_ 10.10.6 Open Valve IA-V-3103B, located on air header line IA(175#)-3101(1"-M7), for approximately 20 seconds then close valve.
  - \_\_\_\_\_ 10.10.7 At OIM, verify PAL-3100B is activated.
  - \_\_\_\_\_ 10.10.8 Turn on Compressor SA-CMP-3101B.
  - \_\_\_\_\_ 10.10.9 After compressor has completed its recharge, verify at OIM that PAL-3100B returns to normal.
  - \_\_\_\_\_ 10.10.10 Open valve IA-V-3105B.
- 10.11 VENT STATION BOX 6241-V TRANSFER LINE LEAK DETECTION
 

NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawing H-6-14034, Sh 1 and 2.)

  - \_\_\_\_\_ 10.11.1 Verify at OIM that LDA-3161 is not activated.
  - \_\_\_\_\_ 10.11.2 At PCU-1, located in the 252-S Building, connect a VOM to terminals 11 and 12 of terminal block TB-3, and verify that it reads 120 V ac.
  - \_\_\_\_\_ 10.11.3 At Leak Detector Relay LDK-3161, install 6-foot leak detection test cable to BNC Cable Receptacle 5.
  - \_\_\_\_\_ 10.11.4 Immerse cable in container of water.
  - \_\_\_\_\_ 10.11.5 Verify at OIM that LDA-3161 is activated.
  - \_\_\_\_\_ 10.11.6 Verify that the VOM reads 0 V ac.

- \_\_\_\_\_ 10.11.7 Remove cable and let dry.
- \_\_\_\_\_ 10.11.8 Verify at OIM that LDA-3161 returns to normal.
- \_\_\_\_\_ 10.11.9 Verify that the VOM reads 120 V ac.
- \_\_\_\_\_ 10.11.10 Disconnect the VOM.
- \_\_\_\_\_ 10.11.11 Disconnect test cable.
- 10.12 SUMP PUMP P-3116 (Reference Drawing H-6-14018, Sh 1)
- NOTE: All steps are performed at the 6241-V vent station unless otherwise noted. (Reference Drawing H-6-13994, Sh 1 and 2.)
- \_\_\_\_\_ 10.12.1 Verify that HS-3116 is in the OFF position.
- \_\_\_\_\_ 10.12.2 Lock and tag circuit breaker 4 located in distribution panel DP-1 OPEN.
- \_\_\_\_\_ 10.12.3 Lift T-leads to sump pump P-3116 motor.
- \_\_\_\_\_ 10.12.4 Remove lock and tag and close circuit breaker 4 located in distribution panel DP-1.
- \_\_\_\_\_ 10.12.5 At PCU-3, connect a jumper across terminals TB1-37 and TB1-38.
- \_\_\_\_\_ 10.12.6 Verify that the red pump ON status light is OFF.
- \_\_\_\_\_ 10.12.7 Verify the green pump OFF status light is ON.
- \_\_\_\_\_ 10.12.8 Put HS-3116 in the ON position.
- \_\_\_\_\_ 10.12.9 Verify that the red pump ON status light is ON.
- \_\_\_\_\_ 10.12.10 Verify that the green pump OFF status light is OFF.
- \_\_\_\_\_ 10.12.11 Using voltmeter verify 480 V, 3-phase on load side of sump pump P-3116 M1 contactor.
- \_\_\_\_\_ 10.12.12 Put HS-3116 in the OFF position.
- \_\_\_\_\_ 10.12.13 Verify that the red pump ON status light is OFF.
- \_\_\_\_\_ 10.12.14 Verify that the green pump OFF status light is ON.
- \_\_\_\_\_ 10.12.15 Put HS-3116 in the ON position.
- \_\_\_\_\_ 10.12.16 Verify that the red pump ON status light is OFF.
- \_\_\_\_\_ 10.12.17 Verify that the green pump OFF status light is ON.
- \_\_\_\_\_ 10.12.18 Disconnect jumper.
- \_\_\_\_\_ 10.12.19 Verify that the red pump ON status light is OFF.

- \_\_\_\_\_ 10.12.20 Verify that the green pump OFF status light is ON.
- \_\_\_\_\_ 10.12.21 Put HS-3116 in the OFF position.
- \_\_\_\_\_ 10.12.22 Lock and tag circuit breaker 4 OPEN.
- \_\_\_\_\_ 10.12.23 Reconnect T-leads to sump pump P-3116 motor.
- \_\_\_\_\_ 10.12.24 Remove lock and tag from circuit breaker 4.

END OF SECTION 10

<b>EXCEPTION NO.</b>		Project No.	ATP No.	Rev.
Recorded By		Organization	Date Recorded	ATP Package No.
Step No.	Requirement			
Description of Problem				
Objector 1 (Name/Organization)			Objector 2 (Name/Organization)	
Planned Action				
Action Taken				
<b>RETEST EXECUTION AND ACCEPTANCE</b>				
Retest Installation Contractor	Date	Recorder	Date	
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date	
Field Engineering	Date	Test Director (Name/Organization)	Date	
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date	
<b>APPROVAL AND ACCEPTANCE - CLIENT</b>				
<input type="checkbox"/> Retest Approved and Accepted <input type="checkbox"/> Exception Accepted-as-is* <input type="checkbox"/> Other*				
* Explanation				
Approver 1	Date	Approver 2	Date	
Approver 3	Date	Approver 4	Date	

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07/14/97

TEST EXCEPTION LOG

Date	Description	Disposition

## DISTRIBUTION SHEET

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Project Title/Work Order		EDT No. N/A
Acceptance Test Procedure for Diversion Box and Vent Station Instrumentation		ECN No. W-058-293

Name	MSIN	Text With All Attach.	Text Only	Attach./Appendix Only	EDT/ECN Only
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Construction Document Control	S2-53	8			
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