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AUG 12 1999

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
 1. EDT **627001**

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) Tank Farm Restoration and Safe Operation		4. Related EDT No.: N/A	
5. Proj./Prog./Dept./Div.: W314/TWRS		6. Design Authority/ Design Agent/Cog. Engr.: J. S. Hammers		7. Purchase Order No.: N/A	
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1	1	Project Manager J.W. Lentsch R3-25	<i>[Signature]</i>	<i>8/5/99</i>		1	1	Operations T.W. Bowers R3-47	<i>[Signature]</i>	<i>8/10/99</i>	
1	1	W314-Project Mgr. M.A. Lane G3-4	<i>[Signature]</i>	<i>7/22/99</i>				T.J. Rettkowski G3-12	<i>[Signature]</i>		
1	1	Eng. Mgr. J.L. Silbert R3-25	<i>[Signature]</i>	<i>8/11/99</i>		1	1	ENR. T.A. Dillohoff	<i>[Signature]</i>	<i>8/11/99</i>	
1	1	Startup Mgr. J.S. Hammers R3-25	<i>[Signature]</i>	<i>7/22/99</i>		1	1	Safety J.A. Ranshaw	<i>[Signature]</i>	<i>8-9-99</i>	
1	1	QA H.M. Chafin R3-25	<i>[Signature]</i>	<i>7-22-99</i>		1	1	Equip Mgr. C.C. Scaic & III	<i>[Signature]</i>	<i>8/5/99</i>	
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18. <i>[Signature]</i> 8/3/99 EDT Originator Date		19. <i>[Signature]</i> 8/2/99 Authorized Representative Date for Receiving Organization		20. <i>[Signature]</i> 8/4/99 Manager Date		21. DOE APPROVAL (if required) Ctrl. No. N/A <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments	
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**Project W-314 Acceptance Test Report HNF-4647
for HNF-4646 241-B Pit Leak Detection ANB-WT-
LDSTA-231 for Project W-314**

Jack S. Hammers

Numatec Hanford Company, Richland, WA 99352

U.S. Department of Energy Contract DE-AC06-96RL13200

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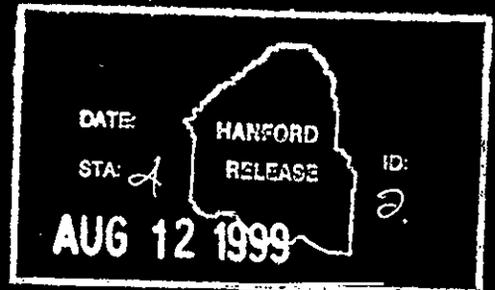
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 8/11/99

Release Approval
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Date



Approved for Public Release

Acceptance Test Report
HNF - 4647- Rev 0
For
HNF - 4646
241- AN-B Pit Leak Detection
ANA - WT - LDSTA - 231

Project W-314

Prepared by:	<u></u>	<u>7-21-99</u>
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	Henry M. Chafin, QA Lead, FDNW	Date
Concurrence:	<u></u>	<u>8/4/99</u>
	Tim W. Bohan, Operations, LMHC	Date
Concurrence:	<u></u>	<u>8/2/99</u>
	David E. Bowers, Design Authority, LMHC	Date
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	Ed F. Enloe Jr., Authorized Inspector, FDH	Date
Concurrence:	<u></u>	<u>8-11-99</u>
	Ron Legg, Chief Test Director, LMHC	Date

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Appendix A (attached field copy of Acceptance Test Procedure)

1.0 Introduction

The purpose of the test was to verify that the AN Tank Farm B Pit Leak Detector components are functionally integrated and operate in accordance with engineering design specifications.

The Acceptance Test Procedure HNF-4646, 241-AN-B-Pit Leak Detection ANB-WT-LDSTA-231 was conducted between 26 June and 02 July 1999 at the 200E AN Tank Farm. The test has been completed with no open test exceptions.

The test was conducted prior to final engineering "as built" activities being completed this had no impact on the procedure or test results. All components, identified in the procedure were found to be labeled and identified as written in the procedure.

1.1 References

HNF-1902, Rev. 4 "Specific Test and Evaluation Plan" (STEP)

HMF-SD-W314-PDS-003, Rev. 1 "Project Development Specification for Pit Leak Detection" (PDS)

2.0 Description of test

The scope of the system tested by this procedure is limited to the leak detector elements, the local control and indication panel, its power source and the interface terminal connections for some of the remote control and indication functions that are to be installed in the future.

The test required or performed the following:

Circuit breaker identification and 120Vac-line voltage verification for the power feed to the leak detection relay panel.

MTL Trip Amplifier to be adjusted to trip at 1.5Vdc probe voltage.

Local hand switches to be repositioned and circuit operation verified to be in accordance with design requirements.

Leak detector probe height to be set above the pit floor.

Test Switches were installed to demonstrate supervisory circuitry functions as well as the interface for future control and indication circuits.

Leak detection function was demonstrated by addition of salt water to the valve pit until alarm actuation was achieved. The drain valve was operated and alarm reset was verified.

2.1 Requirements

Requirements are extracted from HNF-SD-W314-PDS-003 as defined in STEP HNF- 1902.

- 2.1.1 PDS Requirement 3.2.1.1.3 - "Pit leak detection system sensors shall be positioned no higher than one inch above the floor's in the lowest part of the pit or in a sump in the pit."
- 2.1.2 PDS Requirement 3.2.1.1.6 -"The required response time of the pit leak detection system sensor and control panel shall be electrically supervised"
- 2.1.3 PDS Requirement 3.2.1.2.1 - "Loss of power to the leak detection probes, shall provide an output signal to the local alarm and MPS." (Master Pump Shutdown)
- 2.1.3 PDS Requirement 3.2.1.2.2- "A detected failure in the leak detection system shall provide an output signal to the local alarm and MPS."
- 2.1.4 PDS Requirement 3.2.1.2.3 - "The leak detection system shall perform an operational test of itself when commanded by the MPS. The test shall include alarm, circuitry, and sensor functions of the leak detection system."
- 2.1.5 PDS Requirement 3.2.1.3.1 – "The local alarm shall be a warning light. The light shall identify the pit where the leak or malfunction occurred. Each warning light location shall be determined from Human Factors Analysis."
- 2.1.6 PDS Requirement 3.2.1.3.2 - "The reset/acknowledgement of the local alarm shall be either from an MPS system Human-Machine Interface (HMI) location or the local leak detection relay panel."
- 2.1.7 PDS Requirement 3.2.1.3.3 - " The local alarm shall operate as follows:
 - › Immediately upon detecting a leak or malfunction, the local alarm shall flash and produce an audible alarm.

- After the local alarm is acknowledged by an operator located at either the MPS System HMI or the local alarm cabinet, the local alarm shall remain flashing until recovery occurs.
- After the alarm is acknowledged at the MPS System HMI, the audible signal shall be silenced.
- When recovery occurs (the leak or malfunction has been corrected) and after the local alarm is acknowledged, the local alarm shall cease illuminating."

- 2.18 PDS Requirement 3.2.4.4 – "The leak detection system sensors that are located in the pits shall be testable in place by the addition of water to the pit."

3.0 Test results

The AN-B Pit Leak Detector Test was satisfactorily performed and met all the referenced STEP requirements. Four Test Exceptions were written during the conduct of the test. Two are remarkable because they identify actual failure of components to perform their design function. The other two were generated to compensate for procedural inadequacies.

3.1 Test Exception description and disposition

3.1.1 Test Exception 1

During the conduct of the test relay K-231D failed. NCR W-314 (FDNW12) was written, the relay was replaced with like kind and testing was completed with no repeated failures. The relay replacement resulted in retesting of steps 5.4, 5.7, and 5.9.

3.1.2 Test Exception 2

During the conduct of Steps 5.10 and 5.11 the requirement was to read a voltage value of a nominal 24 Volts to verify that a contact configuration. The actual voltage readings were 22 Volts because of voltage drops across coils. "Nominal 24 Volts" was not defined as a qualitative value. The TE was written for clarification only. No impact on test or test results.

3.1.3 Test Exception 3

During the conduct of Steps 5.6 the requirement was to retain the test volume of water for a 24-hour period. This was not achieved. Investigation determined that the pit drain plug had leaked. The plug was removed reworked. Step 5.6 was retested successfully.

3.1.4 Test Exception 4

During the conduct of Steps 5.6 the requirement was to observe a 24 Volt reading. The procedure incorrectly identified the voltage value as 0. ECN 649146 was issued to correct the error in the procedure.

3.2 Step 5.3 was reperformed because of ECN 654959, a misinterpretation of the probe elevation setting discovered during the testing of the AN-A Pit Leak Detector. This was incorporated into Test Exception 3 to ensure that the detectors have the same configuration.

3.3 PDS Requirement 3.2.1.3.3 is not fully satisfied because the "as built" system does not contain an audible alarm.

4.0 Conclusions and Recommendations

The test procedure is acceptable as written and performed. It provides adequate documentation that the system, as constructed, meets the basic design requirements and is ready to support advanced system testing and integration.

ATTACHMENT A

JUN 09 1999

ENGINEERING DATA TRANSMITTAL

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1. EDT 626838

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) TFRSO	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: W-314/TWRS	6. Design Authority/ Design Agent/Cog. Engr.: D.E. Bowers	7. Purchase Order No.: N/A
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		10. System/Bldg./Facility: N/A
11. Receiver Remarks: USA not required per HNF-IP-0842, VOL II, section 5.4, vol 11a. The ATPs in and of themselves are not work authorizing. The ATPs will be performed as a part of a JCS work package that will be USA reviewed prior to performance of the work. These ATPs are not a design or facility modification and are not expected to result in exposure of 1 person AEM (whole body) or 710 person-REM (extremities) for the installation, maintenance and operation for the life of the ATPs. Per the requirements of HNF-IP-0842, PRO-1622 and HNF-MD-10, the ALARA review will be accomplished as part of the normal radiological work planning process. DEB 5-27-99		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
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1	ATP-W314-001 HNF-4642		0	241-AN-A Valve Pit Manifold Valves & Position Indication ATP	ES Q DEB 5/27/99	1	1	1
1	ATP-W314-002 HNF-4644		0	241-AN-B Valve Pit Manifold Valves & Position Indication ATP	ES Q DEB 5/27/99	1	1	1
1	ATP-W314-003 HNF-4646		0	241-AN-B Pit Leak Detection ANB-WT-LDSTA-231 ATP	ES Q DEB 5/27/99	1	1	1
1	ATP-W314-004 HNF-4648		0	241-AN-A Pit Leak Detection ANA-WT-LDSTA-331 ATP	ES Q DEB 5/27/99	1	1	1
1	ATP-W314-005 HNF-4650		0	SN-268 Encasement Leak Detection ANB-WT-LDSTA-335 ATP A DU 6-2-99	ES Q DEB 5/27/99	1	1	1

16. KEY		
Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Rec'd) Acknow. Required	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	1	Design Agent	P.J. Bedel	[Signature]	63-12	1	1	Env TADilhoff	[Signature]	6/8/99	
1	1	Project Mgr.	M.A. Lane	[Signature]	63-12	1	1	Safety O M Jzka	[Signature]	6/11/99	
1	1	Eng. Mgr.	J.L. Gilbert	[Signature]	63-25/49	1	1	Rad Eng RE Elder	[Signature]	6/14/99	
1	1	Startup Mgr.	J.S. Hammers	[Signature]	63-25/49	1	1	Maint OR Douville	[Signature]		
1	1	QA	H.M. Chafin	[Signature]	6-2-99						
1	1	Design Authority	D.E. Bowers	[Signature]	6-2-99			JS HAMMERS			
1	1	Operations	T.W. Bohan	[Signature]	6-2-99						

18. Signature of EDT Originator [Signature] Date: 5-24-99	19. Authorized Representative for Receiving Organization N/A Date: _____	20. Design Authority/Cognizant Manager D.E. Bowers Date: 5/27/99	21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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TWRS ADMINISTRATION
JOINT TEST REVIEW PROCESS

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Page
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II, Operations
4.1.3, REV 1a
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March 23, 1999

ATTACHMENT A

JOINT TEST REVIEW GROUP APPROVAL

Procedure # HNF-4646 (241-AN-B PIT LEAK DETECTION ANB-WT-LDSTA-231)

TITLE

Position	Name	Phone
Test Director/Supervisor	J. GRUBA	373-1249
Engineering Manager or Representative	D. G. BAIDE	376-3274
Project Manager or Representative	T. W. BOHAN	373-1479
Design Authority	D. E. BOWERS	373-1841

Restrictions or Limitations:

Chief Test Director Approval:

RONALD L. LEGG
Printed Name


Signature

6-22-99
Date

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R100

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241-AN-B Pit Leak Detection ANA-WT-LDSTA-231 Acceptance Test Procedure

David W. VanDyke
Maintenance Concepts
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 626838 UC: 2030
Org Code: LJR20000 Charge Code: 106065
B&R Code: EW3130010 Total Pages: 48

Key Words: Acceptance Test Procedure

Abstract: This document describes the method used to test design criteria for Safety Class, Intrinsically Safe leak detector system installed in 241-AN-B Valve Pit located at 200E Tank Farms.

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Release Approval Date



Approved For Public Release

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HNF-4647
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A-6400-073.1 (10/97)

241-AN-B PIT LEAK DETECTION ANB-WT-LDSTA-231
ACCEPTANCE TEST PROCEDURE

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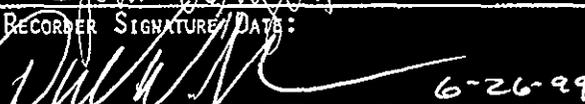
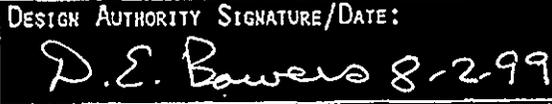
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TEST EXECUTION SHEET

DATE: 6-26-99		DOCUMENT NUMBER: HNF-4646	
DOCUMENT TITLE: 241-AN-B PIT LEAK DETECTION ANB-WT-LDSTA-231 ACCEPTANCE TEST PROCEDURE			
TEST PERSONNEL (PRINT NAMES)			
TEST DIRECTOR: J.M. PRICE		AUTHORIZED INSPECTOR: ED ENLOR	
OPERATIONS ENGINEER: CB WALLGREN		RECORDER: David W. Jandke	
TEST EXECUTION			
TEST DIRECTOR SIGNATURE/DATE:  6/26/99		FLUOR DANIEL NORTHWEST CONSTRUCTION ENGINEER SIGNATURE/DATE:  6/26/99	
OPERATIONS ENGINEER SIGNATURE/DATE: 		RECORDER SIGNATURE/DATE:  6-26-99	
APPROVAL AND ACCEPTANCE OF TEST RESULTS			
WITHOUT EXCEPTION <input type="checkbox"/> ()		WITH EXCEPTIONS RESOLVED <input checked="" type="checkbox"/> ()	
WITH EXCEPTIONS REMAINING <input type="checkbox"/> ()			
TEST DIRECTOR SIGNATURE/DATE:  7-21-99		W-314 PROJECT MANAGER SIGNATURE/DATE:  7/22/99	
FLUOR DANIEL NORTHWEST PROJECT MANAGER SIGNATURE/DATE:  8/1/99		FDNW QUALITY ASSURANCE SIGNATURE/DATE:  7-22-99	
LMHC QUALITY ASSURANCE SIGNATURE/DATE:  8/4/99		OPERATIONS ENGINEER SIGNATURE/DATE:  8/3/99	
AUTHORIZED INSPECTOR SIGNATURE/DATE:  8/4/99		DESIGN AUTHORITY SIGNATURE/DATE:  8-2-99	

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**HNF-4647
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1.0 PURPOSE AND SCOPE

1.1 PURPOSE

The purpose of this Procedure is to demonstrate that the pit leak detection relay cabinet and intrinsically safe probe circuit is fully operable.

1.2 SCOPE

This Acceptance Test Procedure will test all functions of the ANB-WT-LDSTA-231 pit leak detection relay cabinet and associated components.

2.0 INFORMATION

2.1 TERMS AND DEFINITIONS

- 2.1.1 ATR - Acceptance Test Report
- 2.1.2 ATP - Acceptance Test Procedure

2.2 RESPONSIBILITIES

- 2.2.1 Each company or organization participating in the conduct of this procedure will designate personnel to assume the responsibilities and duties as defined herein for their respective roles. The names of these designees shall be provided to the Recorder for listing on the Working Copy of the Test Execution Sheet prior to the performance of any part of this procedure.
- 2.2.2 The Fluor Daniel Northwest Project Manager is responsible for the following:
 - o Designation of a test director
 - o Signing the Test Execution Sheet when the Acceptance Test Procedure is approved and accepted as complete.
- 2.2.3 The Operations Engineer is responsible for the following:
 - o Setting the safe boundaries for performing this procedure
 - o Ensuring plant configuration is in proper status for performing this procedure

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2.2 RESPONSIBILITIES (cont.)

- Signing for operations where applicable in this procedure
- Performing a Post-Test Review of Acceptance Test documentation
- Obtaining concurrence from Tank Farm Shift Manager prior to commencing the test, or upon restart of testing after a temporary suspension of testing.

2.2.4 The Operations Representative is responsible for the following:

- Ensuring that safe work boundaries for testing are complied with
- Coordinating all support craft and personnel in field with the Test Director and the Construction Engineer
- Obtaining release of this ATP for field testing from shift office.

2.2.5 The Test Director is responsible for the following:

- Coordination of all acceptance testing
- Signing the ATP Exception Record when a test exception has been resolved
- Preparing and issuing an Acceptance Test Report for the approved and accepted Acceptance Test Procedure when testing is completed
- Scheduling and conducting a pre-test meeting with acceptance test participants prior to start of testing
- Notification of the persons performing and witnessing the test prior to the start of testing

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2.2 RESPONSIBILITIES (cont.)

- Notification of all concerned parties when a change is made in the testing schedule
- Acting as liaison between the participants in acceptance testing
- Stopping any test which may cause damage to the system until the Acceptance Test Procedure has been revised
- Approving field changes to the Acceptance Test Procedure in accordance with Section 2.5.
- Obtaining revisions to the Acceptance Test Procedure, as necessary, to comply with authorized field changes or to accommodate existing field conditions in accordance with Section 2.5.
- Taking necessary actions to clear exceptions to the Acceptance Test Procedure
- Evaluating recorded data, discrepancies, and exceptions
- Signing Test Execution Sheet when this Acceptance Test Procedure has been performed
- Signing ATP Exception Record when a retest to clear an exception has been executed and accepted
- Obtaining required signatures on the Acceptance Test Procedure Working Copy prior to reproduction and distribution.

2.2.6 The Recorder is responsible for the following:

- Performing all recording duties using black ink
- Recording the names of all designated personnel on the Working Copy of this procedure prior to start of testing
- Observing tests, recording test data, and maintaining the ATP Performance Log

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RWD*

2.2 RESPONSIBILITIES (cont.)

- Signing the Test Execution Sheet as the Recorder
- Initialing every test verification step requiring initials on the Working Copy of this Acceptance Test Procedure as that step is successfully performed, to indicate that Acceptance Criterion has been met
- Recording authorized field changes to this Acceptance Test Procedure
- Recording Test Exceptions and individual Test Procedure steps that are not performed satisfactorily on the ATP Exception Record and ensuring that the information is transferred (in ink or typed) to the master Working Copy of ATP Exception Record(s). Additional ATP Exception Records are to be added as needed
- Notifying the Test Director at the time any objection is made during performance of the Acceptance Test Procedure
- Submitting the completed master Working Copy of this Acceptance Test Procedure to the Test Director for approval signatures and distribution.

2.2.7 The Construction Engineer is responsible for the following:

- Ensuring all equipment required for performing this Acceptance Test Procedure listed in Section 4.1 will be available at the start of testing
- Obtaining from the NHC and LMHC Project Engineer any information or changes necessary to clear or resolve objections
- Coordinating field personnel and activities with the Test Director and Operations Representative
- Ensuring that field testing and inspection of the system or portion of the system to be tested has been completed prior to start of this ATP
- Providing technical input to test personnel as needed relating to the configuration of equipment and systems to be tested and utilized in this procedure
- Post Review of Acceptance Test Documentation.

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2.2 RESPONSIBILITIES (cont.)

- 2.2.8 Fluor Daniel Northwest Quality Assurance is responsible for the following:
- Review and approval of test exception resolutions
 - Performing a Post-Test Review of Acceptance Test documentation
 - Assisting Construction Engineer in Pre-Test verification of construction documentation (i.e. CWPs, submittals, receiving reports etc.
- 2.2.9 Lockheed Martin Quality Assurance is responsible for the following:
- Review and approval of test results
 - Performing a Post-Test Review of Acceptance Test documentation
- 2.2.10 Fluor Daniel Hanford Authorized Inspector is responsible for the following:
- Witnessing test execution
 - Approval and signature of acceptance upon completion of this procedure.
- 2.2.11 Industrial Health And Safety Tech. is responsible for the following:
- Monitor for toxic and combustible gases or vapors and report out of compliance levels to TWRS Industrial Hygiene technician
 - Evaluate exposure potential using field data and according to HNF-SD-WM-HSP-002 or other industrial hygiene exposure prevention criteria and recording monitored levels in applicable steps in work package.
- 2.2.12 Quality Control is responsible for the following:
- Witness and signing, lift and records and the installation and removal of all temporary wiring and devices as applicable in this procedure.

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2.3 RECORDS

- 2.3.1 The completed master "Working Copy" of this Acceptance Test Procedure, Acceptance test report, the completed "Test Execution Sheet", the completed "ATP Performance Log" and "ATP Exception Log", and all "Test Exception Sheets" generated during performance of this Acceptance Test Procedure will be kept as permanent records.

2.4 REFERENCES

- 2.4.1 The following documents were used to write or are referenced in this procedure:
- H-14-100930, "AN STRUCTURAL COVER BLOCKS 241-AN-B PLAN AND DETAILS"
 - H-14-100936, SH. 1, "ELECTRICAL INSTALLATION DETAILS VALVE PIT 241-AN-A"
 - H-14-100942, "P & ID VALVE PIT 241-AN-B"
 - H-14-100978, "PIPING FLOOR DRAIN SEAL ASSEMBLY VALVE PITS 241-AN-A&B"
 - H-14-100983, "INSTM LEAK DETECTION RELAY PNL, ASSY & DETAILS"
 - H-14-100989, SH. 2, "INSTM VALVE PIT LEAK DETECTION LDE-231 LOOP DIAGRAM"
 - H-2-71931, SH. 1, "ELECTRICAL LEAK DETECTION ELEMENTARY DIAGRAMS"
 - H-14-100937 "ELECTRICAL PANELBOARD SCHEDULE EDS-DP-105"
 - H-14-100988, "INSTM FIELD TERMINAL BOX INTERCONNECTION DIAGRAM"

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2.5 GENERAL INFORMATION

2.5.1 All steps in this Acceptance Test Procedure are performed at the 241-AN-B Valve Pit.

2.5.2 ACCEPTANCE CRITERIA: All Test Procedure steps using the word VERIFY are considered Acceptance Criteria steps, and each must have successful execution indicated by having initials and the date entered in the provided space to be considered complete.

2.5.3 All entries recorded in this procedure shall be made in black ink, except for those noted using the redline method.

2.5.4 Required editorial changes to this procedure may be made by the Test Director and Cognizant Engineer per HNF-IP-0842, "Technical Procedure Requirements", as long as the changes do not impact operational facility safety function or performance, and will not compromise or influence the test data. Any technical change must be made by ECN.

2.5.5 Acceptance Test steps detailed in individual Tests in Section 5.0 shall be performed sequentially, unless otherwise noted or as directed by the Test Director.

Individual Test Procedure Sections may be performed out of sequence at the direction of the Test Director, if the intent of the test is not compromised

As required by subsection 2.2.6, as each step is completed, the Recorder will check off (or enter "N/A" for), or initial each Test step as required in the spaces provided on the Working Copy of this Acceptance Test Procedure

Any step that requires verification of data must also include recording data on the Working Copy.

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2.5 GENERAL INFORMATION (Cont.)

2.5.6 It is the intent to perform this Acceptance Test Procedure uninterrupted from beginning to end. If testing is terminated due to time constraints at the end of an individual Test Section, the system will be placed in a safe configuration by the Test Director, with concurrence of the Operations Engineer, and the terminated test configuration noted in the ATP Performance Log. The test will restart at the next scheduled shift by establishing the noted test configuration, and documenting this in ATP Performance Log.

2.5.7 Any non-conformance of the instrumentation, unexpected results or exceptions during testing shall be sequentially numbered and recorded in the ATP Exception Log and on individual ATP Exception Records. Thus, case-by-case resolution, recording, approval, and distribution of each exception will be achieved.

2.5.8 When an exception is identified during testing, initiate an ATP Exception Record in the following manner (an example of a test exception would be when the system, fabricated per the design media, does not perform as expected):

- Number each exception sequentially as it occurs and record it on the ATP Exception Log
- Enter the sequential exception number, Date, and a description of the exception on an ATP Exception Record; identify additional detail as required
- Enter the name and/or the organization of the objecting party for each exception in the "Description of Exception" section of the ATP Exception Record
- Enter a description of actions planned to resolve each exception on the ATP Exception Record when such a determination is made.

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2.5 GENERAL INFORMATION (Cont.)

2.5.9 Resolve test exceptions in the following manner:

- Record the action taken to resolve each exception in the "Resolution of Exception" section of the ATP Exception Record (the action taken does not have to be the same as the recorded planned action)
- When the action taken results in an acceptable retest, initial and date the Correction Approval section of the Exception Sheet
- When the action taken does not result in an acceptable retest, provide a detailed explanation of why the retest action was not acceptable, and what additional plans are required. The explanation may include why the system should be Accepted-As-Is. The NHC Project Engineer then signs and dates the Resolution of Exception section of the ATP Exception Record, and obtains any other approvals required
- Distribute requisite copies of the completed ATP Exception Records to the client at the completion of the Acceptance Test Procedure.

2.5.10 Upon completion of the Acceptance Test Procedure, obtain approval of the test performance. Each Test Execution Sheet will stand alone as approval for the system under test. The Acceptance Test will be complete when all the outstanding tests have been performed and the Acceptance Test Report is prepared. The test will be approved by checking the proper response, with or without exceptions, on the Test Execution Sheet under the "Approval and Acceptance of Test Results" section of the Test Execution Sheet.

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2.5 GENERAL INFORMATION (Cont.)

NOTE - The following three steps detail the possible conditions that may exist at the completion of the Acceptance Test Procedure, and the steps necessary to complete Procedure acceptance in those conditions.

2.5.11 The completed test may be approved without test exceptions:

- Check applicable space on Test Execution Sheet to show that the Acceptance Test Procedure has been performed and no exceptions have been recorded
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided
- Distribute requisite copies as directed by the client
- Send the Master Copy of the completed Acceptance Test Procedure to the client.

2.5.12 The completed test may be approved with exceptions resolved:

- Check applicable space on Test Execution Sheet to show that this procedure has been performed with exceptions recorded and resolved
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided
- Distribute requisite copies as directed by the client
- Send the Master Copy of the completed Acceptance Test Procedure to the client.

2.5.13 The completed test may be approved with test exceptions outstanding:

- Check applicable space on Test Execution Sheet to show that this procedure has been performed with exceptions recorded, part or all of which are presently outstanding, unresolved
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided
- Distribute requisite copies as directed by the client
- Send the Master Copy of the completed Acceptance Test Procedure to the client
- All outstanding exceptions shall be added to project punchlist.

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3.0 PRECAUTIONS AND LIMITATIONS

3.1 PERSONNEL SAFETY

- 3.1.1 Individuals shall carry out their assigned work in a safe manner to protect themselves, others, and the equipment from undue hazards and to prevent damage to property and environment.
- 3.1.2 Operations Representative shall assure the safety of all activities within their areas to prevent injury, property damage, or interruption of operation.
- 3.1.3 Any hazard identified during the performance of the procedure shall be reported to the appropriate waste tank farm facility line manager.
- 3.1.4 A daily pre-job safety briefing will be held with all test participants and documented in the Pre-Job Safety form. (JSA or Pre Job Safety form)
- 3.1.5 Performance of test activities shall always include safety and health aspects as delineated in the Operations Manuals and as directed by the Test Director.
- 3.1.6 An Energized Work Permit is needed to perform this procedure.

3.2 RADIATION AND CONTAMINATION CONTROL

- 3.2.1 Work in Radiological Areas will be performed using an approved Radiation Work Permit, following review by Radiological Control per the ALARA Program (HNF-IP-0842, Volume VII, Section 1.1).

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4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

- 4.1.1 The following supplies shall be available at the test site:
- Electrician protective gloves
 - Electrician protective eyewear (goggles or face shield)
 - Calibrated Volt Ohm Meter (Fluke)
 - Long-shank lockout padlock
 - Ruler, with minimum scale markings of 1/16 inch
 - Fuse Puller
 - Torquing Screwdriver (0-20 inch lbs)
 - 24 volt dc Power Supply.
 - Adjustable Voltage source 0-10 Volt dc
 - Single pole, single throw switch rated (minimum) 5 amp 120 Vac
 - Salt Approx. 10 tsp.
 - 10 Gallon container (minimum) for "Potable water" with ability to regulate flow out of container to (1 Gal/Hr).

NOTE - Calibrated electrical test equipment data shall be recorded at the beginning of each individual test section.

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- As-Built Drawings

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4.3 CONDITIONS AND ACTIONS

The following conditions must be met before this Acceptance Test Procedure (ATP) may commence.

NOTE- A jumper has been installed preventing Master Pump Shut down. This jumper shall be part of the inspection of system to be tested.

NOTE- All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All field testing and inspection of the system or portions of the system to be tested has been completed.

John Wright 6/26/99
Construction Engineer Signature Date

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

AMP 6/26/99
Test Director Signature Date

4.3.3 VERIFY all personnel responsible for directing, witnessing, and performing and signing the ATP have read and understand the ATP.

AMP 6/26/99
Test Director Signature Date

4.3.4 Test Director VERIFY that 241-AN-B Valve Pit is isolated from all other tanks.

AMP 6/26/99
Test Director Signature Date

4.3.5 VERIFY with Shift Manager that NO transfers are occurring or planned during the time period of the test, by SIGNING below.

AMP 6/26/99
Test Director Signature Date

4.3.6 VERIFY IH&S Tech. has performed monitoring of pit and signed in applicable sections of work package.

AMP 6/26/99
Test Director Signature Date

4.3.7 Test Director VERIFY Section 4.0 has been COMPLETED by SIGNING below.

AMP 6/26/99
Test Director Signature Date

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5.0 PROCEDURE

NOTE - These tests may require certain individuals to carry and operate hand held communication devices. This is necessary for communications from the AN Tank Farm Testing area to the 241-AN-271 building while generating alarms.

5.1 POWER REQUIREMENTS TEST

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
Fluke 20 III	69431061	31-July-99	DV / 6-26-99

CIRCUIT BREAKER RATINGS

DV 5.1.1 LOCATE AND VERIFY that 120 Vac circuit breaker, circuit No. 30 in panelboard EDS-DP-105 (reference drawing H-14-100937, ELECTRICAL PANELBOARD SCHEDULE) has a trip rating of 20 Amps.

AMP
Test Director Initial

6/26/99
Date

VOLTAGE VERIFICATION

DV 5.1.2 REMOVE cover of electrical panelboard EDS-DP-105.

NOTE - Voltage in the following step should be between 114 to 126 volts.

DV 5.1.3 MEASURE AND RECORD, using a volt/ohm meter, the main bus voltage from phase A to ground.

VOLTAGE 120.3 VAC

DV 5.1.4 MEASURE AND RECORD, using a volt/ohm meter, the main bus voltage from phase B to ground.

VOLTAGE 120.3 VAC

DV 5.1.5 ENSURE circuit breaker 30 in Panelboard EDS-DP-105 is in the CLOSED or ON position.

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5.1 POWER REQUIREMENTS TEST (Cont.)

NOTE - Voltage in the following step should be between 114 to 126 volts.

DV 5.1.6 MEASURE AND RECORD the load side voltage of circuit No. 30 to ground.

VOLTAGE 120.4 VAC

N/A 5.1.7 IF voltage is NOT within the 114-126 volt range THEN IDENTIFY AND CORRECT voltage deficiency, AND REPEAT Step 5.1.6.

DV 5.1.8 REPLACE cover of electrical panelboard EDS-DP-105.

DV 5.1.9 ENSURE that panel ANB-WT-LDSTA-231 disconnect switch ANB-WT-DS-231 is in the OPEN or OFF position AND local strobe light alarm is DEACTIVATED.

NOTE - Voltage should be between 114 and 126 Volts. It may be necessary to remove the line shield Item No. 39, drawing H-14-100983, attached to the disconnect switch Item No. 35, drawing H-14-100983, to verify voltages. Disconnect power to the leak detection relay cabinet by opening circuit breaker No. 30 panelboard EDS-DP-105, before attempting to remove the disconnect line shield. If the line voltage does not fall between the above voltage range, identify and correct the wiring deficiency to ANB-WT-LDSTA-231.

DV 5.1.10 MEASURE AND RECORD the voltage supplied to panel ANB-WT-LDSTA-231.

VOLTAGE 120.5 VAC

N/A 5.1.11 REPLACE line shield removed on the previous Step, if necessary.

DV 5.1.12 ENSURE disconnect switch ANB-WT-DS-231 for ANB-WT-LDSTA-231 is left in the ON or CLOSED position.

5.1.13 VERIFY that Test 5.1 is COMPLETE by SIGNING below.

[Signature]
Test Director Signature

[Signature]
Date

[Signature]
Operations Signature

6/26/99
Date

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5.2 SETTING THE MTL TRIP AMPLIFIER

NOTE - The following set-up must be completed before further testing. The MTL Trip Amplifier (Item No. 22, Drawing No. H-14-100983) must be set prior to testing the leak detection relay cabinet assembly.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
FLUTE VOM	0840	7-28-99	<i>JDS</i> 6-27-99
TORQUE SCREW DRIVER	950-88-01-087	6-9-00	<i>JDS</i> 6-27-99

JDS 5.2.1 DEENERGIZE the leak detection relay panel ANB-WT-LDSTA-231 AND OPEN the front door.

JDS 5.2.2 DISCONNECT AND ISOLATE electrically, probe circuit wire ANB-WT-LDE-231B-2(-) at terminal block ANB-WT-TB-231-12. Ref. Dwg. H-14-100989 sh.2.



JDS 5.2.3 QC RECORD lifted wire data on Lift/Land table below.

JDS 5.2.4 DISCONNECT AND ISOLATE electrically circuit wires ANB-WT-LD-231-2 at relay ANB-WT-K-231C. (2 Wires).



JDS 5.2.5 QC RECORD lifted wire data on Lift/Land table below.

LIFT / LAND TABLE

WIRE NUMBER	Step No.	Date Lifted	QC INITIAL	Step No.	DATE LANDED	QC INITIAL
ANB-WT-LDE-231B-2(-)	5.2.2	6-27-99	<i>JDS</i>	5.2.12	6-27-99	<i>JDS</i>
ANB-WT-LD-231-2	5.2.4	6-27-99	<i>JDS</i>	5.2.14	6-27-99	<i>JDS</i>
ANB-WT-LD-231-2	5.2.4	6-27-99	<i>JDS</i>	5.2.14	6-27-99	<i>JDS</i>

JDS 5.2.6 ENERGIZE the leak detection relay panel ANB-WT-LDSTA-231 AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C.

JDS 5.2.7 VERIFY AND RECORD on TABLE 1 the initial state of each output set of contacts on Voltage Relay/Trip Amp. ANB-WT-EY-231 (Terminal No.'s 10 & 11 and 13 & 14, Drawing No. H-14-100989, SH. 2) as OPEN or CLOSED with the use of the volt/ohm meter.

JDS Test Director Initial 6-27-99
Date

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5.2 SETTING THE MTL TRIP AMPLIFIER (Cont.)

- JS* 5.2.8 **APPLY** 1.5 volts dc using 0-10 volt dc adjustable source to Item No.22, Drawing No. H-14-100983, on terminals 1 and 4. (This can be done using terminals 10 & 12 on Term Block).
- JS* 5.2.9 **ADJUST** the set point potentiometer on the MTL Trip Amplifier (Item No. 22, Drawing No. H-14-100983) until it actuates or the output contacts change state from the state recorded above at the applied 1.5 Volts dc.
- JS* 5.2.10 **VERIFY AND RECORD** on TABLE 1, the state of each set of contacts after adjusting the set point potentiometer. Each contact verified in Step 5.2.7 should have changed state.

TABLE 1

Contact Term #	Initial State (5.2.7)		Energized State (5.2.10)	
	OPEN ✓	CLOSED ✓	OPEN ✓	CLOSED ✓
#10 and #11	<i>JS</i>	N/A	N/A	<i>JS</i>
#13 and #14	<i>JS</i>	N/A	N/A	<i>JS</i>

JS
Test Director Initial

6-27-99
Date

- JS* 5.2.11 **DEENERGIZE** the leak detection relay cabinet AND disconnect adjustable voltage source.
- JS* 5.2.12 **REPLACE** the probe circuit wire ANB-WT-LDE-231B-2(-) at terminal block ANB-WT-TB-231-12 AND TORQUE termination screw to 7 inch/lbs.



- JS* 5.2.13 **QC RECORD** landed wire data on Lift/Land table.
- JS* 5.2.14 **REPLACE BOTH** circuit wires ANB-WT-LD-231-2 at relay ANB-WT-K-231C AND TORQUE termination screw to 7 inch/lbs.



- JS* 5.2.15 **QC RECORD** landed wire data on Lift/Land table.
- JS* 5.2.16 **CLOSE** the panel door.

5.2.17 **VERIFY** that Test 5.2 is COMPLETE by SIGNING below.

[Signature]
Test Director Signature

[Signature]
Operations Signature

6-27-99
Date

6-27-99
Date

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5.3 SETTING THE PROBE ELEVATIONS (Cont).

ps 5.3.9 MARK the probe wires at 3/8 (0.25 to 0.5) inches down from the mark identified in Step 5.3.7 Refer to drawing H-14-100986, sht 1, "INSTM 241-AN-B VALVE PIT ELEVATION & DETAILS", for tolerances in this measurement.

ps 5.3.10 LOWER the probes back toward the valve pit floor until the lower mark is at the top of the probe wire cord grips.

ps 5.3.11 TIGHTEN the probe wire cord grip, at the position indicated in Step 5.3.9 .

ps 5.3.12 VERIFY the cord grips are tightened at the mark made in Step 5.3.9.

ps

Test Director Initial 6-27-99
Date

ps 5.3.13 REPLACE the electrode holder cover plate.

5.3.14 VERIFY that Test 5.3 is COMPLETE by SIGNING below.

Test Director Signature 6-27-99
Date

Operations Signature 6-27-99
Date

SEE TEST EXCEPTION #3 RETEST

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5.4 B/W LEAK DETECTION RELAY SWITCH TEST (Cont).

JZ 5.4.6 VERIFY the voltage recorded in Step 5.4.5 is at a nominal value of "0" Volts dc.

JZ 6-27-99
Test Director Initial Date

JZ 5.4.7 RELEASE selector switch ANB-WT-SS-331 from the "PROBE TEST" position. (Switch should return to "OPERATE" position).

JZ 5.4.8 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C.

JZ 5.4.9 VERIFY the local strobe light alarm in Step 5.4.3 is NOT operating.

JZ 6-27-99
Test Director Initial Date

JZ 5.4.10 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-34 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 24.02

JZ 5.4.11 VERIFY the voltage recorded in Step 5.4.10 at a nominal value of "24" Volts dc.

JZ 6-27-99
Test Director Initial Date

5.4.12 VERIFY that Test 5.4 is COMPLETE by SIGNING below.

J J Deula 6-27-99
Test Director Signature Date
[Signature] 6-27-99
Operations Signature Date

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST

NOTE - The B/W leak detection relay leak simulation tests the probe circuit by adding liquid to the 241-AN-B valve pit. Adding Salt Water to the 241-AN-B valve pit will be detected by the probe circuit and local alarms and remote signals will be generated.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
FLUKE VOM	1055	7-31-99	<i>JDS</i> 7-1-99

JDS 5.6.1 ENSURE that ANB-WT-LDSTA-231 disconnect switch ANB-WT-DS-231, Drawing No. H-14-100989, SH. 2, is in the CLOSED position or ON, AND local strobe light alarm is DEACTIVATED.

JDS 5.6.2 VERIFY the low point drain assembly, drawing reference H-14-100978, "FLOOR DRAIN SEAL ASSEMBLY", is in the CLOSED, unretracted position.

JDS _____ 6-30-99
 Test Director Initial Date

JDS 5.6.3 LOCATE the South West view port, drawing reference H-14-100930, on top of the valve pit cover block.

JDS 5.6.4 REMOVE the shielding plug located in the cover block view port.

JDS 5.6.5 ADD 10 tsp. of salt to 10 gal. potable water and stir solution until salt is dissolved.

NOTE - Use care to avoid splashing salt solution on jumpers in pit during water addition.

NOTE - In the following step liquid will be introduced to the pit. At a rate not to exceed 16 oz./min.(Maximum of 10 gal.total).

NOTE - Stop adding liquid to pit when leak detection alarm actuates.

JDS 5.6.6 POUR Salt Water solution into the view port.

SEE
 TE # 3 RETEST

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST (Cont.)

122 5.6.7 RECORD, On TABLE 2 the start time for the liquid being poured into the valve pit.

TABLE 2

Start Time 5.6.7	Leak Detector Activation Time 5.6.8	Amount Of Liquid Used At Time Of Activation 5.6.9
2210	2240	3.75 Gal

AMP 5.6.8 RECORD, On TABLE 2 the time the leak detector activates.

AMP 5.6.9 RECORD, On TABLE 2 the amount of salt water solution required to activate the leak detector.

AMP 5.6.10 VERIFY the amount of salt water solution required to activate the leak detector is less than or equal to 10 gallons.

AMP
Test Director Initial 6/30/99
Date

AMP 5.6.11 VERIFY that the local strobe light alarm ANB-WT-LDA-231A located on ANB-WT-LDSTA-231 is activated.

AMP
Test Director Initial 6/30/99
Date

NOTE - The MPS is jumpered out and MPS system should NOT receive a shutdown signal.

AMP 5.6.12. ADD remaining liquid using caution not splash solution on jumpers and devices in pit.

AMP 5.6.13 RECORD on ALARM RESET DATA TABLE, the time liquid addition is complete.

AMP 5.6.14 INSTALL shield plug removed in step 5.6.4.

AMP 5.6.15 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C located on ANB-WT-LDSTA-231.

AMP 5.6.16 VERIFY the local strobe light alarm remains operational.

AMP
Test Director Initial 6/30/99
Date

AMP 5.6.17 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-34 in Field Terminal Box AN241-WT-TBX-101.

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VOLTAGE 0

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST (Cont.)

AMP 5.6.18 VERIFY the voltage recorded in Step 5.6.17 at a nominal value of "0" Volts dc.

AMP Test Director Initial *6/30/99* Date

NOTE - During the next 24 hour period the ALARM reset switch ANB-WT-PB-231C located on ANB-WT-LDSTA-231 will be actuated at least once every 60 minutes until alarm condition clears, Or the 24 hour period is exceeded. It is recommended to attempt reset of alarm every 30 mins. (The intent of this is to fulfill the 24 hr. requirement for drain seal).

AMP 5.6.19 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C At least once every 60 min until alarm clears or 24 period is exceeded.

AMP 5.6.20 RECORD each RESET attempt on ALARM RESET DATA TABLE.

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TE # 3 RETEST

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST (Cont.)

ALARM RESET DATA TABLE Time Of Liquid Addition Completion ^{6/20/99} 2240^h 2254

RESET ATTEMPT	TIME OF ATTEMPT	ALARM RESET		INITIAL
		NO	YES	
✓	2300	✓		Ja
✓	2330	✓		Ja
✓	2400	✓		Ja
✓	0030	✓		Ja
✓	0100	✓		Ja
✓	0130	✓		Ja
✓	0200	✓		Ja
✓	0230	✓		Ja
✓	0300	✓		Ja
✓	0330	✓		Ja
✓	0400	✓		Ja
✓	0430	✓		Ja
✓	0500		✓	Ja
NO FURTHER ENTRY				
7-1-99				
TEST EXCEPT LOG 43				

7-1-99

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST (Cont.)

JDS 5.6.21
TEST EX #3

IF ALARM RESETS prior to the 24 hour limit THEN document on TEST EXCEPTION LOG AND GO TO step 5.6.24.

JDS 5.6.22

PLACE the low point drain assembly in the OPEN or RETRACTED position.

N/A 5.6.23

LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C.

JDS 5.6.24

VERIFY the local strobe light alarm is NOT operating.

JDS Test Director Initial 7-1-99 Date

JDS 5.6.25

MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-34 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 24.0 FLUKE VOM
1055

JDS 5.6.26
TEST 4

VERIFY the voltage recorded in Step 5.6.25 at a nominal value of 24 Volts dc. ECN 649146

N/A Test Director Initial _____ Date

JDS 5.6.27

ENSURE low point drain assembly is in OPEN or RETRACTED position, AND FLUSH with 10 gal. RAW WATER.

JDS 5.6.28

REPEAT FLUSH with 11 gal. RAW WATER.

JDS 5.6.29

REPEAT FLUSH with 12 gal. RAW WATER.

JDS 5.6.30

RESTORE the low point drain assembly to the CLOSED or UNRETRACTED position AFTER draining is complete.

5.6.31 VERIFY that Test 5.6 is COMPLETE by SIGNING below.

N/A Test Director Signature *N/A* Date

N/A Operations Signature *N/A* Date

SEE TEST EXCEPTION # 3 RETEST
SEE TEST EXCEPTION # 4

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RWD

5.7 MTL FAIL SAFE RELAY SWITCH TEST (Cont.)

JDS

5.7.7 RELEASE selector switch ANB-WT-SS-231 from the "FAIL RELAY TEST" position. (Switch should return to "OPERATE" position).

JDS

5.7.8 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C, reference drawing H-14-100989, SH. 2.

JDS

5.7.9 VERIFY the local strobe light alarm is NOT operating.

JDS 6-27-99
Test Director Initial Date

JDS

5.7.10 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-36 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 24.02

JDS

5.7.11 VERIFY the voltage recorded in Step 5.7.10 is at a nominal value of "24" Volts dc.

JDS 6-27-99
Test Director Initial Date

5.7.12 VERIFY that Test 5.7 is COMPLETE by SIGNING below.

[Signature] 6-27-99
Test Director Signature Date

[Signature] 6-27-99
Operations Signature Date

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5.8 MTL FAIL SAFE RELAY SIMULATION TEST (Cont.)

JDS

5.8.7 VERIFY the voltage recorded in Step 5.8.6 is at a nominal value of "0" Volts dc.

JDS 6-27-99
Test Director Initial Date

JDS
JDS

5.8.8 PLUG in the cord end removed in Step 5.8.2.

5.8.9 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C, drawing reference No. H-14-100989, SH. 2.

JDS

5.8.10 VERIFY the local strobe light alarm is NOT operating.

JDS 6-27-99
Test Director Initial Date

JDS

5.8.11 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-36 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 24.01

JDS

5.8.12 VERIFY the voltage recorded in Step 5.8.11 is at a nominal value of "24" Volts dc.

JDS 6-27-99
Test Director Initial Date

5.8.13 VERIFY that Test 5.8 is COMPLETE by SIGNING below.

[Signature] 6-27-99
Test Director Signature Date
[Signature] 6/27/99
Operations Signature Date

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5.9 REMOTE RESET TEST (Cont.)

5.9.8 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-31 in Field Terminal Box AN241-WT-TBX-101.

TEST EXCEPTION #1

VOLTAGE 0

5.9.9 VERIFY the voltage recorded in Step 5.9.8 is at a nominal value of "24" Volts dc.

N/A Test Director Initial Date

5.9.10 Momentarily CLOSE THEN OPEN the temporary switch, BETWEEN Terminal TB-DC4-47 and TB-DC2-31 in Field Terminal Box AN241-WT-TBX-101, installed in Step 5.9.2 .

5.9.11 VERIFY that the local strobe light alarm ANB-WT-LDA-231A, reference drawing No. H-14-100989, SH. 2, is NOT operational.

N/A Test Director Initial Date

5.9.12 ENSURE Panel ANB-WT-LDSTA-231 DISCONNECT SWITCH ANB-WT-DS-231 is in the OPEN or OFF Position.

5.9.13 REMOVE the temporary switch installed BETWEEN TB-DC2-31 and TB-DC4-47.



5.9.14 QC VERIFY temporary switch removed.

N/A QC Initial Date

5.9.15 VERIFY that Test 5.9 is COMPLETE by SIGNING below.

N/A Test Director Signature Date

N/A Operations Signature Date

SEE TEST EXCEPTION #1 RETEST

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5.10 REMOTE TRIP AMPLIFIER/VOLTAGE RELAY TEST

NOTE - The remote leak detection relay test is a function that allows the operator to test the trip amplifier/voltage relay from the HMI display. For the purposes of this Acceptance Test Procedure Section, a signal will be generated from Field Terminal Box AN241-WT-TBX-101. An insulated temporary switch with jumper wires will be needed for this procedure.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
FLUKE VOM	0840	7-28-99	122 6-30-99

122

5.10.1 ENSURE that ANB-WT-LDSTA-231 disconnect switch ANB-WT-DS-231, reference drawing No. H-14-100989, SH. 2, is in the OPEN or OFF position.

122

5.10.2 WIRE a temporary switch, S-1, BETWEEN Terminal TB-DC4-47 and TB-DC2-33 in Field Terminal Box AN241-WT-TBX-101.

QC

122

5.10.3 QC VERIFY temporary switch installed.

QC Initial

Date

6-30-99

122

5.10.4 ENSURE the temporary switch is in the OPEN or OFF position.

122

5.10.5 ENSURE Panel ANB-WT-LDSTA-231 DISCONNECT SWITCH ANB-WT-DS-231 is in the CLOSED or ON Position AND local strobe light alarm is DEACTIVATED.

122

5.10.6 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC4-47 and TB-DC2-33 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 22.19

TEST EXCEPTION #2

5.10.7 VERIFY the voltage recorded in Step 5.10.6 is at a nominal value of "24" Volts

Test Director Initial

Date

7-21-99

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5.10 REMOTE TRIP AMPLIFIER / VOLTAGE RELAY TEST (Cont.)

12h

5.10.8 Momentarily CLOSE THEN OPEN the temporary switch BETWEEN Terminal TB-DC4-47 and TB-DC2-33 in Field Terminal Box AN241-WT-TBX-101.

12h

5.10.9 VERIFY that the local strobe light alarm ANB-WT-LDA-231A, reference drawing No. H-14-100989, SH. 2, is operational.

[Signature]
Test Director Initial 6-30-99
Date

12h

5.10.10 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C, reference drawing No. H-14-100989, SH. 2.

12h

5.10.11 VERIFY that the local strobe light alarm ANB-WT-LDA-231A is NOT operational.

[Signature]
Test Director Initial 6-30-99
Date

12h

5.10.12 ENSURE Panel ANB-WT-LDSTA-231 DISCONNECT SWITCH is in the OPEN or OFF Position.

12h

5.10.13 REMOVE the temporary switch, S-1, BETWEEN Terminal TB-DC4-47 and TB-DC2-33 in Field Terminal Box AN241-WT-TBX-101.



12h

5.10.14 QC VERIFY temporary switch removed.

[Signature]
QC Initial 6-30-99
Date

5.10.15 VERIFY that Test 5.10 is COMPLETE by SIGNING below.

[Signature]
Test Director Signature 6-30-99
Date

[Signature]
Operations Signature 6/30/99
Date

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RWD

5.11 REMOTE LEAK DETECTION RELAY TEST (Cont.)
(Pit leak detection probe test)

J20

5.11.8 Momentarily CLOSE THEN OPEN the temporary switch BETWEEN Terminal TB-DC4-47 and TB-DC2-32 in Field Terminal Box AN241-WT-TBX-101.

J20

5.11.9 VERIFY that the local strobe light alarm ANB-WT-LDA-231A, reference drawing No. H-14-100989, SH. 2, is operational.

J20

Test Director Initial 6-30-99
Date

J20

5.11.10 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C, reference drawing No. H-14-100989, SH. 2.

J20

5.11.11 VERIFY that the local strobe light alarm ANB-WT-LDA-231A is NOT operational.

J20

Test Director Initial 6-30-99
Date

J20

5.11.12 ENSURE Panel ANB-WT-LDSTA-231 DISCONNECT SWITCH ANB-WT-DS-231 is in the OPEN or OFF Position.

J20

5.11.13 REMOVE the temporary switch BETWEEN Terminal TB-DC4-47 and TB-DC2-32 in Field Terminal Box AN241-WT-TBX-101.



J20

5.11.14 QC VERIFY temporary switch removed.

P

QC Initial 6-30-99
Date

5.11.15 VERIFY that Test 5.11 is COMPLETE by SIGNING below.

[Signature]

Test Director Signature 6-30-99
Date

[Signature]

Operations Signature 6/30/99
Date

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ATP PERFORMANCE LOG

This page may be reproduced as necessary. Page 1 of 2

ATP PERFORMANCE EVENT	DATE	INITIALS
PRETEST BRIEFING HELD IN CRAFT LUNCH ROOM JCS, 2E-99-01329.	6-26-99	/JCS
COMPLETED SECTION 4.3 & 5.1	6-26-99	/JCS
PTB, JCS-2E-99-01329 COMPLETED 5.1, 5.2 5.3, 5.4, 5.5, 5.7, 5.8. RELAY K231D FAILED DURING 5.9, TE-1 WRITTEN DISCONNECT OPEN STOPPED TESTING	6-27-99	/JCS
NCR- W-314 (FDKW 12) HAS TESTING ON HOLD. NO TESTING	6-28-99	/JCS
PTB. HELD IN CRAFT LUNCH ROOM JCS & CONDITIONS DISCUSSED.	6-29-99	/JCS
RETESTED STEPS 5.4, 5.7 AND REPERFORMED STEP 5.9	6-30-99	/JCS
TEST EXCEPTION #2 FOR SECTION 5.10, 5.11 NOMINAL 24VOLTS NOT DEFINED 22VOLTS OBSERVED. CONTINUE TESTING COMPLETE SECTION	6-30-99	/JCS
PTB FOR STEP 5.6 HELD IN FIELD FOR WALK THROUGH. THEN STARTED 5.6.	6-30-99	/JCS
SHIFT T/O & PTB HELD IN FIELD TEST IN PROGRESS N-A	6-30-99	/JCS

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ATP PERFORMANCE LOG

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ATP PERFORMANCE EVENT	DATE	INITIALS
TEST IN PROGRESS. TEST EXCEPTION 3	7-1-99	/25
ALARM REST @ 0500.		
TEST EXCEPTION 4 WRONG VOLTAGE VALUE	7-1-99	/25
IN PROCEDURE. CONTINUE TESTING TO		
DRAIN & FLUSH PIT.		
ISSUED ECN 654959 - RESET PROBE	7-1-99	/25
SECTION 5.3 WHEN TE-3 IS RETESTED		
ISSUED ECN 649146 FOR TE-4	7-1-99	/25
CONDUCTED PTB STARTED 5.6 RETESTS	7-1-99	
5.3 RETEST.	7-1-99	/25
TEST IN PROGRESS	7-2-99	
COMPLETED TESTING	7-2-99	/25
NO ENTRY		

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ATP EXCEPTION RECORD

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ATP STEP NUMBER: <u>5.9.8</u>		ATP EXCEPTION LOG#: <u>1</u>
DESCRIPTION OF EXCEPTION: <u>RELAY K231D FAILED DURING TEST</u>		
NAME / ORGANIZATION OF INITIATOR: <u>JEFFREY / L. GRUBA / STARTUP</u>		
DATE OF EXCEPTION: <u>6-27-99</u>		
RESOLUTION OF EXCEPTION: <u>NCR W-314 (FDNW12) REQUIRED RELAY TO BE REPLACED. RETEST SECTION 5.9, ⁶⁻³⁰⁻⁹⁹ 5.4, 5.7</u>		
DATE OF RESOLUTION: <u>6-30-99</u>		
TEST DIRECTOR SIGNATURE: 	DATE: <u>7-20-99</u>	
PROJECT ENGINEER SIGNATURE: 	DATE: <u>7/21/99</u>	
QUALITY ASSURANCE SIGNATURE: <u>Hank M. Chapin</u>	DATE: <u>7-22-99</u>	

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Planned Resolution

Initiate a Non-Conformance Report for relay K-231D describing the failure of the relay to latch. Restore the relay design function in accordance with engineering disposition.

Justification

The relay K-231D is a Safety Related component that requires engineering review and resolution.

Conclusion

Suspend testing 6-28-99 on ATP until NCR for the K-231D relay is resolved.

Resolution of Exception

NCR W-314 (FDNW12) was issued on 6-28-99 to document the condition.

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ORIGINAL

NONCONFORMANCE REPORT

Page 1 of 1

Project No. W314	W.O. No. W314-4C	Location (Bldg./Area) 200B AN TANK FARM	Safety Class. 3 SC	NCR No. W-314 (EDM1/2)
---------------------	---------------------	--	-----------------------	---------------------------

Job Title
241-AN TANK FARM VALVE DET UP-6 PAGES

Requirement(s) (Including source document numbers, revision, paragraph, etc.)

A.T.P. DOCUMENT NO. HNF-4646 10 PAGE 37/41
 STEP NO. 5.9.6 STATES "ROTATE SELECTOR SWITCH ANB-WT-55-231 TO THE "PROBE TEST" POSITION, THEN RELEASE ALLOWING SPRINTS RETURN TO THE "OPERATE" POSITION. STEP NO. 5.9.7 STATES "VERIFY THAT THE LOCAL STROBE LIGHT ALARM ANB-WT-LDA-231A REFERENCE DRAWING NO. H-14-1009A S4.2, IS ACTIVATED."

- Distribution
- Erich, Consulting B2-69 1,2,3
 - NHC
 - L Gilbert R3-47 1,2,3
 - XW Liefeld S0-09 1,2,3
 - DL McGrew R3-25 1,2,3
 - MHC
 - W Bohan R3-47 1,2,3
 - DE Bowers S5-13 1,2,3
 - JL Homan R3-25 1,2,3
 - FDNW
 - AI Files 1,3
 - QC Files 1,3
 - CDC 1,2
 - E/QA & PC B4-68 1,2,3
 - HM Chafin R3-25 1,2,3
 - JP Bedell G3-12 1,2,3
 - RE Fish S5-50 1,2,3
 - JS Hammer G3-12 1,2,3
 - WR Swift S5-50 1,3
 - BL Syverson G3-12 1,2,3

Description of Nonconformance:

CONTRARY TO THE REQUIREMENTS LISTED ABOVE, THE LOCAL STROBE LIGHT ALARM DOES NOT REMAIN ACTIVATED WHEN THE SELECTOR SWITCH IS RELEASED.

NOTE: THE 24VDC RELAY # K-231A (POTTER BLOOMFIELD MODEL # KBP115G) WILL LATCH WHEN LIGHTLY TAPPED. When the relay is latched the strobe light alarm will work properly. 6/29/99

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Originator W. A. Schmitt	Date 6-28-99	Manager [Signature]	Date 6/28/99
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NONCONFORMANCE REPORT (continued)

Disposition Use-as-is* Reject Repair* Rework

ASME Code Related No Yes

Cause Code 1059 NCR No. W314 (FDNW-12)

*Justification Required Jan 6 29-99

Disposition Instructions (generally not required for use-as-is and reject dispositions):

Relay will be replaced with a like part and CGI tested in accordance with section 13440, paragraph 2.3.2.3

ECN (generally required for repair and use-as-is dispositions):

Yes No If yes, ECN No. _____

If no, provide explanation: _____

Disposition Justification (if applicable):

Approval/Concurrence:

Construction Approval		Customer Projects Approval	
CF/CM Engineer <u>[Signature]</u>	Date <u>6/29/99</u>	Engineer <u>N/A</u>	Date _____
Field Quality Engineer <u>[Signature]</u>	Date <u>6-29-99</u>	QA <u>N/A</u>	Date _____
Design Approval		Other Concurrence	
Design Engineer <u>N/A</u>	Date _____	FDH <u>N/A</u>	Date _____
Lead Engineer <u>N/A</u>	Date _____	AI/ANI (ASME) <u>N/A</u>	Date _____
Quality Engineer <u>N/A</u>	Date _____	FDNW Code Eng. <u>N/A</u>	Date _____
Safety Engineer <u>N/A</u>	Date _____	Environmental <u>N/A</u>	Date _____

Closure Disposition Completed as Directed Other (Explain) 57 A-53

Originator or Representative _____ Date _____

Supervisor _____ Date HNF-4647-RW0

TEST EXCEPTION 1

Belhaven Applied Technologies

This letter certifies that the replacement of the socketed Potter & Brumfield latching relays will not void the ETL rating of electrical leak detection cabinets.

The relays are a like for like replacement of the same part number and will not affect the overall ETL certification.

Jeff Cadick



QA Manager

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RWO

ACCEPTANCE PLAN

Item(s) To Be Accepted				
Characteristic To Be Verified (From Line 22)	Action Party	Acceptable Value, Condition or Tolerance	Method of Verification	Sample Size
MFG. NAME AND MODEL SECURELY FASTENED TO THE STROBE LIGHT RELAY.	<i>J. M. Smith</i> 6-30-99 QC QA Kin Ewn 6/30/99	AGREES WITH PROCUREMENT DOCUMENTATION AS A POTTER & BRUMFIELD KBP-11DG-24	VISUAL	100%
NO PHYSICAL DAMAGE, SCRATCHES, DENTS, BENDING AND SUFFICIENT PACKAGING.	<i>J. M. Smith</i> 6-30-99 QC QA Kin Ewn 6/30/99	NO VISUAL DAMAGE	VISUAL	100%
CONTACT RATING	<i>J. M. Smith</i> 6-30-99 QC QA Kin Ewn 6/30/99	2 FORM C CONACTS RATED FOR 5 AMPS AT 120 VOLTS AC	-UL or FM label -Manufacturers Published Data	100%
CONTACTS/COILS OPERATION REFER TO TEST PROCEDURE 1 ATTACHED	<i>J. M. Smith</i> 6-30-99 QC QA Kin Ewn 6/30/99	CONTACTS CHANGE STATE WHEN THE LATCH COIL IS MOMENTARILY ENERGIZED AND CHANGE BACK WHEN THE RESET COIL IS MOMENTARILY ENERGIZED (REFER TO TEST PROCEDURE 1 ATTACHED)	TEST	100%
OPERATION TEMPERATURE RANGE	<i>J. M. Smith</i> 6-30-99 QC QA Kin Ewn 6/30/99	0-140 DEG. F.	-UL or FM label -Manufacturers Published Data	100%

Comments TESTING WAS FOR item # 1 OF 3 FROM Lot # 9910

J. M. Smith 6-30-99

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RWD

ACCEPTANCE PLAN

Item(s) To Be Accepted

Characteristic To Be Verified (From Line 22)	Action Party	Acceptable Value, Condition or Tolerance	Method of Verification	Sample Size
MFG. NAME AND MODEL SECURELY FASTENED TO THE STROBE LIGHT RELAY.	<i>QC QA</i> <i>6-30-99</i> <i>Kim Ewn 6/30/99</i>	AGREES WITH PROCUREMENT DOCUMENTATION AS A POTTER & BRUMFIELD KBP-11DG-24	VISUAL	100%
NO PHYSICAL DAMAGE, SCRATCHES, DENTS, BENDING AND SUFFICIENT PACKAGING.	<i>QC QA</i> <i>6-30-99</i> <i>Kim Ewn 6/30/99</i>	NO VISUAL DAMAGE	VISUAL	100%
CONTACT RATING	<i>QC QA</i> <i>6-30-99</i> <i>Kim Ewn 6/30/99</i>	2 FORM C CONTACTS RATED FOR 5 AMPS AT 120 VOLTS AC	-UL or FM label -Manufacturers Published Data	100%
CONTACTS/COILS OPERATION REFER TO TEST PROCEDURE 1 ATTACHED	<i>QC QA</i> <i>6-30-99</i> <i>Kim Ewn 6/30/99</i>	CONTACTS CHANGE STATE WHEN THE LATCH COIL IS MOMENTARILY ENERGIZED AND CHANGE BACK WHEN THE RESET COIL IS MOMENTARILY ENERGIZED (REFER TO TEST PROCEDURE 1 ATTACHED)	TEST	100%
OPERATION TEMPERATURE RANGE	<i>QC QA</i> <i>6-30-99</i> <i>Kim Ewn 6/30/99</i>	0-140 DEG. F.	-UL or FM label -Manufacturers Published Data	100%

Comments TESTING WAS FOR item #2 OF 3 FROM Lot # 9910
QC QA 6-30-99

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RWD

ACCEPTANCE PLAN

Item(s) To Be Accepted				
Characteristic To Be Verified (From Line 22)	Action Party	Acceptable Value, Condition or Tolerance	Method of Verification	Sample Size
MFG. NAME AND MODEL SECURELY FASTENED TO THE STROBE LIGHT RELAY.	<i>QC QA</i> <i>J. Smith 6-30-99</i> <i>Kim Ewan 6/30/99</i>	AGREES WITH PROCUREMENT DOCUMENTATION AS A POTTER & BRUMFIELD KBP-11DG-24	VISUAL	100%
NO PHYSICAL DAMAGE, SCRATCHES, DENTS, BENDING AND SUFFICIENT PACKAGING.	<i>QC QA</i> <i>J. Smith 6-30-99</i> <i>Kim Ewan 6/30/99</i>	NO VISUAL DAMAGE	VISUAL	100%
CONTACT RATING	<i>QC QA</i> <i>J. Smith 6-30-99</i> <i>Kim Ewan 6/30/99</i>	2 FORM C CONTACTS RATED FOR 5 AMPS AT 120 VOLTS AC	-UL or FM Label -Manufacturers Published Data	100%
CONTACTS/COILS OPERATION REFER TO TEST PROCEDURE 1 ATTACHED	<i>QC QA</i> <i>J. Smith 6-30-99</i> <i>Kim Ewan 6/30/99</i>	CONTACTS CHANGE STATE WHEN THE LATCH COIL IS MOMENTARILY ENERGIZED AND CHANGE BACK WHEN THE RESET COIL IS MOMENTARILY ENERGIZED (REFER TO TEST PROCEDURE 1 ATTACHED)	TEST	100%
OPERATION TEMPERATURE RANGE	<i>QC QA</i> <i>J. Smith 6-30-99</i> <i>Kim Ewan 6/30/99</i>	0-140 DEG. F.	-UL or FM Label -Manufacturers Published Data	100%

Comments TESTING WAS FOR item #3 OF 3 FROM Lot # 9910

J. Smith 6-30-99

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TEST PROCEDURE 1

Verify contacts change state when the latching coil has been momentarily energized and that the contacts return to original state when the reset coil is energized (refer to vendor supplied data for contact and coil terminal points and minimum coil pick-up voltage ratings).

- Verify the state of all contacts without the latch coil energized.
- Momentarily energize the 24 V dc latch coil.
- Verify all contacts change state.
- Momentarily energize the 24 V dc reset coil.
- Verify all contacts change state back to their original state.

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5.9 REMOTE RESET TEST (Cont.)

JDS

5.9.8 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-31 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 24.01

JDS

5.9.9 VERIFY the voltage recorded in Step 5.9.8 is at a nominal value of "24" Volts dc.

JDS 6-30-99
Test Director Initial Date

JDS

5.9.10 Momentarily CLOSE THEN OPEN the temporary switch, BETWEEN Terminal TB-DC4-47 and TB-DC2-31 in Field Terminal Box AN241-WT-TBX-101, installed in Step 5.9.2 .

JDS

5.9.11 VERIFY that the local strobe light alarm ANB-WT-LDA-231A, reference drawing No. H-14-100989, SH. 2, is NOT operational.

JDS 6-30-99
Test Director Initial Date

JDS

5.9.12 ENSURE Panel ANB-WT-LDSTA-231 DISCONNECT SWITCH ANB-WT-DS-231 is in the OPEN or OFF Position.

JDS

5.9.13 REMOVE the temporary switch installed BETWEEN TB-DC2-31 and TB-DC4-47.



JDS

5.9.14 QC VERIFY temporary switch removed.

JDS 6-30-99
QC Initial Date

5.9.15 VERIFY that Test 5.9 is COMPLETE by SIGNING below.

J. Paul 6-30-99
Test Director Signature Date

J. Anderson 6/30/99
Operations Signature Date

TE # 1 RETEST

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5.4 B/W LEAK DETECTION RELAY SWITCH TEST

NOTE - This test verifies the functionality of the B/W intrinsically safe relay. By rotating the selector switch to the "PROBE TEST" position, an internal resistor simulates a load across the probes and activates the B/W intrinsically safe leak detection relay.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
FLUKE VOM	0840	7-28-99	JDS 6-30-99

JDS 5.4.1 LOCATE AND ENSURE that ANB-WT-LDSTA-231 disconnect switch ANB-WT-DS-231 (Drawing No. H-14-100989) is in the CLOSED position or ON, AND the local alarm strobe light is deactivated.

JDS 5.4.2 ROTATE selector switch ANB-WT-SS-231 to the "PROBE TEST" position, THEN RELEASE allowing spring return to the "Operate" position.

JDS 5.4.3 VERIFY that the local strobe light alarm ANB-WT-LDA-231A located on ANB-WT-LDSTA-231 is activated.

JDS Test Director Initial 6-30-99 Date

JDS 5.4.4 ROTATE AND HOLD selector switch ANB-WT-SS-231 to the "PROBE TEST" position.

JDS 5.4.5 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-34 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 0.03

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5.4 B/W LEAK DETECTION RELAY SWITCH TEST (Cont).

JDS 5.4.6 VERIFY the voltage recorded in Step 5.4.5 is at a nominal value of "0" Volts dc.

JDS 6-30-99
Test Director Initial Date

JDS 5.4.7 RELEASE selector switch ANB-WT-SS-331 from the "PROBE TEST" position. (Switch should return to "OPERATE" position).

JDS 5.4.8 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C.

JDS 5.4.9 VERIFY the local strobe light alarm in Step 5.4.3 is NOT operating.

JDS 6-30-99
Test Director Initial Date

JDS 5.4.10 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-34 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 24.0

JDS 5.4.11 VERIFY the voltage recorded in Step 5.4.10 at a nominal value of "24" Volts dc.

JDS 6-30-99
Test Director Initial Date

5.4.12 VERIFY that Test 5.4 is COMPLETE by SIGNING below.

J. J. ... 6-30-99
Test Director Signature Date
J. E. ... 6/30/99
Operations Signature Date

TE # 1 RETEST

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5.7 MTL FAIL SAFE RELAY SWITCH TEST

NOTE - The leak detection fail safe relay switch test identifies the functionality of the fail safe testing circuit. The test relay opens a probe circuit wire and activates the MTL Trip Amplifier.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
FLUKE 16M	0840	7-28-99	JDS 6-30-99

- JDS* 5.7.1 ENSURE that ANB-WT-LDSTA-231 disconnect switch ANB-WT-DS-231, reference drawing No. H-14-100989, SH. 2, is in the CLOSED position or ON, AND local strobe light alarm is DEACTIVATED.
- JDS* 5.7.2 ROTATE selector switch ANB-WT-SS-231 to the "FAIL RELAY TEST" position, THEN RELEASE allowing spring return to the "Operate" position.
- JDS* 5.7.3 VERIFY that the local strobe light alarm ANB-WT-LDA-231A, reference drawing No. H-14-100989, SH. 2, is activated.

JDS _____ 6-30-99
 Test Director Initial Date
- JDS* 5.7.4 ROTATE AND HOLD selector switch ANB-WT-SS-231 to the "FAIL RELAY TEST" position.
- JDS* 5.7.5 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-36 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 0.04
- JDS* 5.7.6 VERIFY the voltage recorded in Step 5.7.5 is at a nominal value of "0" Volts dc.

JDS _____ 6-30-99
 Test Director Initial Date

TE #1 RETEST

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REV0

ATP EXCEPTION RECORD

This page may be reproduced as necessary. Page 1 of 2

ATP STEP NUMBER: <u>5.10.7, 5.10.11</u>		ATP EXCEPTION LOG#: <u>2</u>
DESCRIPTION OF EXCEPTION: <u>VOLTAGE 124VDC</u>		
NAME / ORGANIZATION OF INITIATOR: <u>JEFF GRUBA STARTUP</u>		
DATE OF EXCEPTION: <u>6-30-99</u>		
RESOLUTION OF EXCEPTION: <u>ACCEPT RECORDED VOLTAGES AS A NOMINAL VALUE OF 24 VOLTS</u>		
DATE OF RESOLUTION: <u>7-21-99</u>		
TEST DIRECTOR SIGNATURE: 	DATE: <u>7-21-99</u>	
PROJECT ENGINEER SIGNATURE: 	DATE: <u>7/21/99</u>	
QUALITY ASSURANCE SIGNATURE: <u>Hank M. Chapin</u>	DATE: <u>7-22-99</u>	

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Planned Resolution

Read S-1 switch to earth to verify no path to earth. Read across switch contacts to verify switch is open.

If no path to earth or short across switch is present continue with test.

Justification

The intent of the voltage verification is to verify that the switch is OPEN. A small voltage drop across the switch is not detrimental to the test. A review of the drawing H-14-100989 Rev. 2, Sht. 2, does not show an alternate path for voltage drop.

Conclusion

The test switch will perform its intended function of simulating the HMI RESET and TESTFLR handswitches.

Resolution of Exception.

Readings across the S-1 switch with the test FLUKE VOM indicate the switch is OPEN.

Reading from the S-1 switch case to earth, indicates no short to earth is present.

Accept reading of 22.19 Vdc and 22.17 Vdc as in the "nominal range of 24 Volts dc."

The voltage drop across the S-1 test switch occurred at the following test steps.

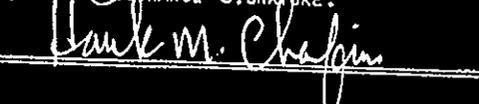
TEST STEP	RELAY	INSPECTED FOR SHORT CIRCUITS
5.10.7	K-331B	Switch inspected no faults found
5.11.7	K-331A	Switch inspected no faults found

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RWG

ATP EXCEPTION RECORD

This page may be reproduced as necessary. Page 1 of

ATP STEP NUMBER: <u>5.6.21</u>		ATP EXCEPTION LOG#: <u>3</u>
DESCRIPTION OF EXCEPTION: <u>ALARM RESET 2 24 HOURS</u>		
NAME / ORGANIZATION OF INITIATOR: <u>JEFF GRUBA STARTUP</u>		
DATE OF EXCEPTION: <u>7-1-99</u>		
RESOLUTION OF EXCEPTION: <u>REMOVED PLUG REPLACED RUBBER GASKET</u>		
<u>RESET PROBE. SECTION 5.3</u>		
<u>RETEST LEAK DETECTOR SECTION 5.6</u>		
DATE OF RESOLUTION: <u>7-2-99</u>		
TEST DIRECTOR SIGNATURE: 	DATE: <u>7-21-99</u>	
PROJECT ENGINEER SIGNATURE: 	DATE: <u>7/21/99</u>	
QUALITY ASSURANCE SIGNATURE: 	DATE: <u>7-22-99</u>	

Handwritten: 2A-67

Handwritten: HNF-4647
RWD

Planned Resolution

Return to construction for investigation and rework as required in accordance with their program.

Justification

The sealing gasket is still in final resolution with engineering and construction. The type of gasket material and characteristics may require several in-situ tests in order to obtain a leak tight fit.

Conclusion

Retest as required to verify leak tight condition.

Resolution of Exception.

The drain plug valve was removed, reworked, and reinstalled. In addition the leak detection probes were reset to a lower elevation in accordance with clarified interpretation of the probe configuration. The probe is actually mounted 3/16 of an inch above the bottom of the probe case. This was not compensated for when the probe was originally set in step 5.3. The original setting of 3/8 inch from the valve pit floor as determined by the detector case. Despite the higher elevation the probes still detected the leak. However this was not the case with the ANA Valve pit Leak Detector Probe. This resulted in ECN 654959 that provided clarification. The ANB Valve Pit Leak Detector Probe was reset to maintain a consistent configuration with the probe elevations.

The results of the sealing gasket rework and the lowering of the leak detection probe has resulted in a satisfactory test.

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RWO

ENGINEERING CHANGE NOTICE

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1. ECN 654959

Proj. ECN W314-4C-12

2. ECN Category (mark one) Supplemental <input checked="" type="radio"/> Direct Revision <input type="radio"/> Change ECN <input type="radio"/> Temporary <input type="radio"/> Standby <input type="radio"/> Supersedure <input type="radio"/> Cancel/Void <input type="radio"/>	3. Originator's Name, Organization, MSIN, and Telephone No. Carol Cloud, TWRS, G3-12, 376-7361		4. USQ Required? <input checked="" type="radio"/> Yes <input type="radio"/> No <u>TF-99-0525</u>	5. Date 7-1-99
	6. Project Title/No./Work Order No. W-314, Tank Farm Restoration and Safe Operations		7. Bldg./Sys./Fac. No. 241-AN	8. Approval Designator SC/SQ <u>E</u>
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) See block 13a		10. Related ECN No(s). NONE	11. Related PO No. N/A

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

Affected documents:
 H-14-100985, SH. 1, REV. 1
 H-14-100986, SH. 1, REV. 1

Description of change:
 H-14-100985, SH. 1, REV. 1
 Revise per what is shown in clouded area on page 4.
 H-14-100986, SH. 1, REV. 1
 Revise per what is shown in clouded area on page 5.

Background changes for this drawing, not identified by a revision bubble, are reflected in related ECN's.

13b. Design Baseline Document? Yes No

14a. Justification (mark one) Criteria Change <input type="radio"/> Design Improvement <input type="radio"/> Environmental <input type="radio"/> Facility Deactivation <input type="radio"/> As-Found <input checked="" type="radio"/> Facilitate Const. <input type="radio"/> Const. Error/Omission <input type="radio"/> Design Error/Omission <input type="radio"/>	14b. Justification Details This ECN lowers the probe height on the Pit Leak Detectors for Valve Pits 241-AN-A and 241-AN-B. This was necessary to aid the field during Construction Testing. The lower probe height meets all requirements in the PDS, HNF-SD-W314-003 and takes into account the original nominal pit Construction tolerances. This modification will not change collective dose since it has no impact on radiological sources, contamination control, or shielding. This ECN does not affect AN RVR or STEPS for AN-A or AN-B. The design verification method for SC components is by independent review as documented on the attached record of the review.
--	--

15. Distribution (include name, MSIN, and no. of copies)
 See attached Distribution Sheet 3

RELEASE STAMP

DATE: JUL 01 1999
 STA: A
 HANFORD RELEASE
 ID: 2

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HNF-4647A-7800-013-1
RWD

DISTRIBUTION SHEETTo
Distribution

From

Project Title/Work Order

W-314 Tank Waste and Restoration

NAME	MSIN	DRAWINGS	SPECS	ECN
J. P. Bedell	G3-12	5 HS	5	1
T. W. Bohan	R3-47	1 HS	1	1
D. E. Bowers	S5-13	1 HS	1	1
W. E. Bryan	S5-05	1 HS	1	1
R. F. Carlstrom	R1-43	1 HS	1	1
H. M. Chafin	R3-25	1 HS	1	1
G. S. Chinery	N1-29			1
M. S. Collins	A5-18	1 HS	1	1
T. A. Dillhoff	S5-03	1 HS		1
R. A. Dodd	R3-72			1
R. E. Elder	S6-14	1 HS	1	1
R. E. Fish	S5-50	1 HS	1	1
J. D. Galbraith	R3-73	1 HS	1	1
M. S. Garrett	S0-09	1 HS	1	1
J. L. Gilbert	R3-25			1
J. S. Hammers	R3-25	1 HS	1	1
B. H. Hays	B2-69	1 HS	1	1
J. W. Hobbs	S6-14	1 HS	1	1
O. M. Jaka	S5-12	2 HS	2	1
E. M. Koellermeirer	A3-04			1
M. A. Lane	G3-12	1 HS	1	1
J. R. LaPointe	R2-88	1 HS		1
K. W. Leliefeld	S0-09	1 HS	1	1
J. W. Lentsch	R3-25			1
D. L. McGrew	R3-25	1 HS	1	1
J. W. Middleton	B4-68	1 HS	1	1
C. H. Mulkey	R1-51	1 HS		1
J. E. Navarro	A2-22	1 HS	1	1
D. W. Reberger	S5-13			1
P. D. Rhodes	S0-09			1
C. A. Rieck	S2-48			1
W. R. Swift	S5-50	1 HS		1
B. L. Syverson	G3-12		3	3
	(IPF 23)			
D. W. VanDyke	R2-82	1 HS	1	1
J. A. Wright	S5-50			1
T. L. Warnick	G3-12	1 HS	1	1
M. W. Wheat	S0-09			1
Construction Document Control	S5-50	4 HS/10FS	6	

For changes in Distribution, please contact Tammy
Rettkowski at 372-2559 or Linda Syverson on 376-0486.

Ref Dwg	Sh	Rev	Prepared By	Checked By	ECN No	Page
H-14-100985	1	1	CL CLOUD	<i>AJ Consett</i>	W314-4C-124	4/6

GENERAL NOTES

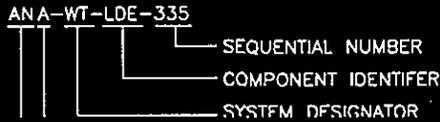
REVISED

1. FOR VALVE POSITION INDICATOR LOCATIONS AND ORIENTATION, SEE DRAWING H-14-100975, SHEET 1.

2. USING AN IN-PIT VIDEO CAMERA, ADJUST PROBES BY LOWERING UNTIL THE INSULATOR JUST TOUCHES THE PIT FLOOR. THEN RAISE APPROXIMATELY 1/16" AS MEASURED ON THE SENSOR WIRES AT THE ELECTRODE HOLDER ON THE COVER BLOCK. THIS WILL PLACE THE TIP OF THE ELECTRODE AT A NOMINAL HEIGHT OF 3/4" OFF THE LOWEST POINT OF THE PIT FLOOR.

3. SEE ASSOCIATED ASSEMBLY DRAWINGS H-14-100980 AND H-14-100981 FOR ADDITIONAL NAMEPLATE INFORMATION.

4. ALL COMPONENTS IN THIS SYSTEM, WITH EXCEPTION OF BOXES AND CONNECTORS, SHALL BE LABELED PER THE FOLLOWING IDENTIFICATION NUMBER (EIN) EXAMPLE:



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*HNF-4647
Rev D*

Ref Dwg	Sh	Rev	Prepared By	Checked By	ECN No	Page
H-14-100986	1	1	CL CLOUD	<i>HT Carrott</i>	W314-4C-124	5/6

GENERAL NOTES

REVISED

1. FOR VALVE POSITION INDICATOR LOCATIONS AND ORIENTATION, SEE DRAWING H-14-100975, SHEET 1.

2. USING AN IN-PIT VIDEO CAMERA, ADJUST PROBES BY LOWERING UNTIL THE INSULATOR JUST TOUCHES THE PIT FLOOR. THEN RAISE APPROXIMATELY 1/16" AS MEASURED ON THE SENSOR WIRES AT THE ELECTRODE HOLDER ON THE COVER BLOCK. THIS WILL PLACE THE TIP OF THE ELECTRODE AT A NOMINAL HEIGHT OF 3/4" OFF THE LOWEST POINT OF THE PIT FLOOR.

3. SEE ASSOCIATED ASSEMBLY DRAWINGS H-14-100980 AND H-14-100981 FOR ADDITIONAL NAMEPLATE INFORMATION.

4. ALL COMPONENTS IN THIS SYSTEM, WITH EXCEPTION OF BOXES AND CONNECTORS, SHALL BE LABELED PER THE FOLLOWING IDENTIFICATION NUMBER (EIN) EXAMPLE:

ANA-WT-LDE-335



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HNF-4647

PROJECT W-314, TANK FARM RESTORATION AND SAFE OPERATIONS
DOCUMENTATION OF INDEPENDENT REVIEW

ECN NUMBER W314-4C-124

Guidelines for review:

- Meets functional requirements
- Proper design inputs used
- Reasonable assumptions made
- Methods of calculation correct
- Structural integrity adequate
- Interfaces correct
- Tolerances reasonable
- Materials and sizes standard (readily available)

Independent reviewer's name C. C. Scalet III

Design verification method used _____

Design inputs _____

RCRs generated None - no comments

Independent reviewer's signature/date C. C. Scalet III 7-1-99

Cognizant manager's signature/date _____

Attach this form to the applicable ECN after completion of review.

5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST

NOTE - The B/W leak detection relay leak simulation tests the probe circuit by adding liquid to the 241-AN-B valve pit. Adding Salt Water to the 241-AN-B valve pit will be detected by the probe circuit and local alarms and remote signals will be generated.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
<i>Floke</i>	<i>1055</i>	<i>7/31/99</i>	<i>AMP</i>

JDS 5.6.1 ENSURE that ANB-WT-LDSTA-231 disconnect switch ANB-WT-DS-231, Drawing No. H-14-100989, SH. 2, is in the CLOSED position or ON, AND local strobe light alarm is DEACTIVATED.

JDS 5.6.2 VERIFY the low point drain assembly, drawing reference H-14-100978, "FLOOR DRAIN SEAL ASSEMBLY", is in the CLOSED, unretracted position.

JDS
 Test Director Initial Date
 _____ *7-1-99*

JDS 5.6.3 LOCATE the South West view port, drawing reference H-14-100930, on top of the valve pit cover block.

JDS 5.6.4 REMOVE the shielding plug located in the cover block view port.

JDS 5.6.5 ADD 10 tsp. of salt to 10 gal. potable water and stir solution until salt is dissolved.

NOTE - Use care to avoid splashing salt solution on jumpers in pit during water addition.

NOTE - In the following step liquid will be introduced to the pit. At a rate not to exceed 16 oz./min.(Maximum of 10 gal.total).

NOTE - Stop adding liquid to pit when leak detection alarm actuates.

JDS 5.6.6 POUR Salt Water solution into the view port.

TEST EXCEPTION #3 RETEST

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST
(Cont.)

10.9 5.6.7 RECORD, On TABLE 2 the start time for the liquid being poured into the valve pit.

TABLE 2

Start Time 5.6.7	Leak Detector Activation Time 5.6.8	Amount Of Liquid Used At Time Of Activation 5.6.9
1453	1512	2 gal

AMP 5.6.8 RECORD, On TABLE 2 the time the leak detector activates.

AMP 5.6.9 RECORD, On TABLE 2 the amount of salt water solution required to activate the leak detector.

AMP 5.6.10 VERIFY the amount of salt water solution required to activate the leak detector is less than or equal to 10 gallons.

AMP
Test Director Initial *6/30/99* *AMP* 7/1/99
Date

AMP 5.6.11 VERIFY that the local strobe light alarm ANB-WT-LDA-231A located on ANB-WT-LDSTA-231 is activated.

AMP
Test Director Initial *6/30/99* *AMP* 7/1/99
Date

NOTE - The MPS is jumpered out and MPS system should NOT receive a shutdown signal.

AMP 5.6.12. ADD remaining liquid using caution not splash solution on jumpers and devices in pit.

AMP 5.6.13 RECORD on ALARM RESET DATA TABLE, the time liquid addition is complete.

AMP 5.6.14 INSTALL shield plug removed in step 5.6.4.

AMP 5.6.15 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C located on ANB-WT-LDSTA-231.

AMP 5.6.16 VERIFY the local strobe light alarm remains operational.

AMP
Test Director Initial *7/1/99* *AMP* 7/1/99
Date

AMP 5.6.17 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-34 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE ϕ

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST (Cont.)

AMP 5.6.18 VERIFY the voltage recorded in Step 5.6.17 at a nominal value of "0" Volts dc.

AMP
Test Director Initial

7/1/99
Date

NOTE - During the next 24 hour period the ALARM reset switch ANB-WT-PB-231C located on ANB-WT-LDSTA-231 will be actuated at least once every 60 minutes until alarm condition clears, Or the 24 hour period is exceeded. It is recommended to attempt reset of alarm every 30 mins. (The intent of this is to fulfill the 24 hr. requirement for drain seal).

AMP 5.6.19 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C At least once every 60 min until alarm clears or 24 period is exceeded.

AMP 5.6.20 RECORD each RESET attempt on ALARM RESET DATA TABLE.

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST (Cont.)

ALARM RESET DATA TABLE Time Of Liquid Addition Completion 1529

RESET ATTEMPT	TIME OF ATTEMPT	ALARM RESET		INITIAL
		NO	YES	
1529	Start time			
1600 ✓	1600	✓		Ja
✓	1630	✓		Ja
✓	1700	✓		Ja
✓	1730	✓		Ja
✓	1800	✓		Ja
✓	1830	✓		Ja
✓	1900	✓		Ja
✓	1930	✓		Ja
✓	2000	✓		Ja
✓	2030	✓		Ja
✓	2100	✓		Ja
✓	2130	✓		Ja
✓	2200	✓		Ja
✓	2230	✓		Ja
✓	2300	✓		Ja
✓	2330	✓		Ja
✓	2400	✓		Ja
✓	0030	✓		Ja
✓	0100	✓		Ja
✓	0130	✓		Ja
✓	0200	✓		Ja
✓	0230	✓		Ja
✓	0300	✓		Ja
✓	0330	✓		Ja
✓	0400	✓		Ja
✓	0430	✓		Ja

7-2-99

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RESET ATTEMPT	TIME OF ATTEMPT	ALARM RESET		INITIAL
		NO	YES	
✓	0500	✓		JLH
✓	0530	✓		JLH
✓	0600	✓		JLH
✓	0630	✓		JLH
✓	0700	✓		JLH
✓	0730	✓		JLH
✓	0800	✓		JLH
✓	0830	✓		JLH
✓	0900	✓		JLH
✓	0930	✓		JLH
✓	10:00	✓		JLH
✓	10:30	✓		JLH
✓	11:00	✓		JLH
✓	11:30	✓		JLH
✓	12:00	✓		JLH
✓	12:30	✓		JLH
✓	13:00	✓		JLH
✓	13:30	✓		JLH
✓	14:00	✓		JLH
✓	14:30	✓		JLH
✓	15:00	✓		JLH
✓	15:30	✓		JLH
NO FURTHER ENTRIES 7-2-99				

TE #3 RETEST

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5.6 B/W LEAK DETECTION RELAY LEAK SIMULATION TEST (Cont.)

VA 5.6.21 IF ALARM RESETS prior to the 24 hour limit THEN document on TEST EXCEPTION LOG AND GO TO step 5.6.24.

DV 5.6.22 PLACE the low point drain assembly in the OPEN or RETRACTED position.

DV 5.6.23 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANB-WT-PB-231C.

DV 5.6.24 VERIFY the local strobe light alarm is NOT operating.

JDS 7-2-99
Test Director Initial Date

JDS 5.6.25 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-35 and TB-DC2-34 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE 24.01

JDS 5.6.26 VERIFY the voltage recorded in Step 5.6.25 at a nominal value of "0" Volts dc. ECN 649146

24 JDS 7-2-99
Test Director Initial Date

DV 5.6.27 ENSURE low point drain assembly is in OPEN or RETRACTED position, AND FLUSH with 10 gal. RAW WATER.

DV 5.6.28 REPEAT FLUSH with 11 gal. RAW WATER.

DV 5.6.29 REPEAT FLUSH with 12 gal. RAW WATER.

DV 5.6.30 RESTORE the low point drain assembly to the CLOSED or UNRETRACTED position AFTER draining is complete.

5.6.31 VERIFY that Test 5.6 is COMPLETE by SIGNING below.

[Signature] 7-2-99
Test Director Signature Date
[Signature] 7-2-99
Operations Signature Date

TE #3 RETEST

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5.3 SETTING THE PROBE ELEVATIONS

5.3.1 VERIFY IH&S Tech. has monitored pit prior to performing this section.

JSD 6-30-90
 Test Director Initial Date

JSD 5.3.2 INSTALL camera system for visually monitoring probe and cables to probes per TO-020-005.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE
N/A			

JSD 5.3.3 VERIFY the probes are installed correctly. Refer to drawing H-14-100981, sht 1 & 2, "INSTM PIT LEAK DETECTOR ASSY".

JSD 6-30-99
 Test Director Initial Date

JSD 5.3.4 REMOVE the electrode holder cover plate.

JSD 5.3.5 LOOSEN the probe wire cord grip until the probe wires are allowed to be lowered to the bottom of the pit floor.

NOTE - DO NOT allow slack to accumulate in the probe wires once the probes have touched the bottom of the pit floor. Observe with camera system.

JSD 5.3.6 LOWER the probe wires toward the valve pit floor until the probes are just touching the pit floor.

JSD 5.3.7 MARK the probe wires at the top of the probe wire cord grips with the use of a permanent marker or other marking device.

JSD 5.3.8 RAISE the probe wires AND MEASURE a distance, down toward the electrodes, of 3/8 (0.25 to 0.5) inches.

TE #3 RETEST

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ATP EXCEPTION RECORD

This page may be reproduced as necessary.

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ATP STEP NUMBER: 5.6.26	ATP EXCEPTION LOG#: 4
DESCRIPTION OF EXCEPTION: 24.0 VDC OBSERVED '0'VDC REQUIRED	
NAME / ORGANIZATION OF INITIATOR: JEFFREY L. GROBA	
DATE OF EXCEPTION: 7-1-99	
RESOLUTION OF EXCEPTION: ISSUED ECN 649146 TO CORRECT	
VOLTAGE REQUIREMENT 24VDC TO MATCH DESIGN	
CONDITION	
DATE OF RESOLUTION: 7-2-99	
TEST DIRECTOR SIGNATURE: 	DATE: 7-21-99
PROJECT ENGINEER SIGNATURE: 	DATE: 7/21/99
QUALITY ASSURANCE SIGNATURE: Hank M. Chapin	DATE: 7-22-99

TYPE: CONTINUOUS	DOCUMENT NO: HNF-4646	REV/MOD: 0	RELEASE DATE:	PAGE: 45 of 47
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Rev0**

ENGINEERING CHANGE NOTICE

1. ECN **649146**

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Proj.
ECN

2. ECN Category (mark one) Supplemental <input checked="" type="radio"/> Direct Revision <input type="radio"/> Change ECN <input type="radio"/> Temporary <input type="radio"/> Standby <input type="radio"/> Supersedure <input type="radio"/> Cancel/Void <input type="radio"/>	3. Originator's Name, Organization, MSIN, and Telephone No. David W. VanDyke R2-82 373-6057	4. USQ Required? <input checked="" type="radio"/> Yes <input type="radio"/> No <i>TF 99-1201, Rev 0</i>	5. Date 7-01-99
6. Project Title/No./Work Order No. Tank Farms Restoration And Safe Operations / W314		7. Bldg./Sys./Fac. No. 241-AN-B Valve Pit	8. Approval Designator Q
9. Document Numbers Changed by this ECN (includes sheet no. and rev.) HNF-4646 <i>REV 0</i>		10. Related ECN No(s). N/A	11. Related PO No. N/A

12a. Modification Work <input type="radio"/> Yes (fill out Blk. 12b) <input checked="" type="radio"/> No (NA Blks. 12b, 12c, 12d)	12b. Work Package No. 2E-99-1329	12c. Modification Work Completed N/A Design Authority/Cog. Engineer Signature & Date	12d. Restored to Original Condition (Temp. or Standby ECNs only) N/A Design Authority/Cog. Engineer Signature & Date
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13a. Description of Change
 In HNF-4646 ATP Section 5.6 Step 5.6.26 Change 0 volts to 24 volts

13b. Design Baseline Document? Yes No

14a. Justification (mark one) Criteria Change <input type="radio"/> Design Improvement <input type="radio"/> Environmental <input type="radio"/> Facility Deactivation <input type="radio"/> As-Found <input type="radio"/> Facilitate Const. <input type="radio"/> Const. Error/Omission <input type="radio"/> Design Error/Omission <input checked="" type="radio"/>	14b. Justification Details Typographical error not found in review. Design verification method is by informal review as documented by signature approval on this ECN. This change will not change collective dose since it does not impact radiological sources, contamination control, or shielding.
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15. Distribution (include name, MSIN, and no. of copies)

D. E Bowers	S5-13
H. M. Chapin	R3-25
J. S. Hammers	R3-25
M. A. Lane	G3-12
B. L. Syverson	G3-12

TE # 4

RELEASE STAMP

DATE: **JUL 02 1999**

STA: *4*

**HANFORD
RELEASE**

ID: *2*

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ENGINEERING CHANGE NOTICE

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1. ECN (use no. from pg. 1)

649146

16. Design Verification Required

Yes
 No *HMC 7-2-99*

17. Cost Impact

ENGINEERING

Additional \$ N/A
 Savings \$ _____

CONSTRUCTION

Additional \$ N/A
 Savings \$ _____

18. Schedule Impact (days)

Improvement N/A
 Delay _____

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.

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

21. Approvals

	Signature	Date		Signature	Date
Design Authority	<i>[Signature]</i>	<u>7/1/99</u>	Design Agent	_____	_____
<i>AROT</i> Eng.	<i>[Signature]</i>	<u>7/2/99</u>	PE	_____	_____
<i>AROT</i> Eng. Mgr.	<i>[Signature]</i>	<u>7/2/99</u>	QA	_____	_____
QA	<i>[Signature]</i>	<u>7-2-99</u>	Safety	_____	_____
Safety	_____	_____	Design	_____	_____
Environ.	_____	_____	Environ.	_____	_____
Other	<i>[Signature]</i>	<u>7/1/99</u>	Other	<i>[Signature]</i>	<u>7-1-99</u>
<i>FORN AM</i>	<i>[Signature]</i>	<u>07-01-99</u>		_____	_____

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

ADDITIONAL

TE[#]4

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A-7900-013-3 (10/97)
HUF-4647
P400

PROCEDURE HISTORY SIGNATURE SHEET

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