Sta 4. 2

JUN 09 1999

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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
8. Originator Remarks: This EDT release the approved ATP's for the 241-AN-A and B packages part of Project W-314.		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks: 11A. Design Baseline Document? ☐ Yes ☒ No USA not required per HNF-IP-0842, VOL IV, section 5.4, rev 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 an exposure > 1 person-REM (whole body) or > 10 person-REM (extremities) for the installation, maintenance and operation for the life of the ATPs. Per the requirements of HNF-PRD-1622, PRD-1623 and HNF-CD-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
		14. Required Response Date: N/A

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
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. (Receipt 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
1	1	Design Agent	P.J. Bedell	6/3-12		1	1	Env TADilhoff	6/8/99
1	1	Project Mgr.	M.A. Lane	6/3-12		1	1	Safety OMSZKA	6/11/99
1	1	Eng. Mgr.	J.L. Gilbert	6/3-25		1	1	Rad Eng RE Elder	6/11/99
1	1	Startup Mgr.	J.S. Hammers	6/3-25		1	1	Maint OR Douville	6/11/99
1	1	QA	H.M. Chafin	6/4-99					
1	1	Design Authority	D.E. Bowers	5-27-99					
1	1	Operations	T.W. Bohan	5/25/99					

18. Signature of EDT Originator Date 5/24-99	19. N/A Authorized Representative Date for Receiving Organization	20. D.E. Bowers 5/27/99 Design Authority/ Cognizant Manager Date	21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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241-AN-A Pit Leak Detection ANA-WT-LDSTA-331 Acceptance Test Procedure

David W. VanDyke

Maintenance Concepts

Richland, WA 99352

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

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TANK FARM ACCEPTANCE TEST PROCEDURE

AN FARM TESTING

**241-AN-A PIT LEAK DETECTION ANA-WT-LDSTA-331
ACCEPTANCE TEST PROCEDURE**

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TEST EXECUTION SHEET

DATE:		DOCUMENT NUMBER: HNF-4648	
DOCUMENT TITLE: 241-AN-A PIT LEAK DETECTION ANA-WT-LDSTA-331 ACCEPTANCE TEST PROCEDURE			
TEST PERSONNEL (PRINT NAMES)			
TEST DIRECTOR:		AUTHORIZED INSPECTOR:	
OPERATIONS ENGINEER:		RECORDER:	
TEST EXECUTION			
TEST DIRECTOR SIGNATURE/DATE:		FLUOR DANIEL NORTHWEST CONSTRUCTION ENGINEER: SIGNATURE/DATE:	
OPERATIONS ENGINEER SIGNATURE/DATE:		RECORDER SIGNATURE/DATE:	
APPROVAL AND ACCEPTANCE OF TEST RESULTS			
WITHOUT EXCEPTION ____ (✓)		WITH EXCEPTIONS RESOLVED WITH EXCEPTIONS REMAINING ____ (✓) ____ (✓)	
TEST DIRECTOR SIGNATURE/DATE:		W-314 PROJECT MANAGER SIGNATURE/DATE:	
FLUOR DANIEL NORTHWEST PROJECT MANAGER SIGNATURE/DATE:		FDNW QUALITY ASSURANCE SIGNATURE/DATE:	
LMHC QUALITY ASSURANCE SIGNATURE/DATE:		OPERATIONS ENGINEER SIGNATURE/DATE:	
AUTHORIZED INSPECTOR SIGNATURE/DATE:		DESIGN AUTHORITY SIGNATURE/DATE:	

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 ANA-WT-LDSTA-331 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:
 - Designation of a test director
 - 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:
 - Setting the safe boundaries for performing this procedure
 - Ensuring plant configuration is in proper status for performing this procedure

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

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

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.

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.

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-A PLAN AND DETAILS"
- H-14-100936, SH 1 "ELECTRICAL INSTALLATION DETAILS VALVE PIT 241-AN-A"
- H-14-100941, "P & ID VALVE PIT 241-AN-A"
- 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-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"
- H-14-100989, SH. 1 "INSTM VALVE PIT LEAK DETECTION LDE-331 LOOP DIAGRAM".

2.5 GENERAL INFORMATION

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

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.

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.

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.

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 Operations Representative.

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)

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

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

4.3.2 Construction Engineer Signature _____
Date _____
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.

4.3.3 Test Director Signature _____
Date _____
Test Director VERIFY that 241-AN-A Valve Pit is isolated from all other tanks.

4.3.4 Test Director Signature _____
Date _____
VERIFY with Shift Manager that NO transfers are occurring or planned during the time period of the test, by SIGNING below.

4.3.5 Test Director Signature _____
Date _____
VERIFY IH&S Tech. has performed monitoring of pit and signed in applicable sections of work package.

4.3.6 Test Director Signature _____
Date _____
Test Director VERIFY Section 4.0 has been COMPLETED by SIGNING below.

Test Director Signature _____

Date _____

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

CIRCUIT BREAKER RATINGS

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.

Test Director Initial

Date

VOLTAGE VERIFICATION

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

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

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

VOLTAGE

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

VOLTAGE

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

5.1 POWER REQUIREMENTS TEST (CONT.)

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

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

VOLTAGE _____

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.

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

5.1.9 **ENSURE** that panel ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331 is in the OPEN or OFF position.

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 ANA-WT-LDSTA-331.

5.1.10 **MEASURE AND RECORD** the voltage supplied to panel ANA-WT-LDSTA-331.

VOLTAGE _____

5.1.11 **REPLACE** line shield removed on the previous Step, if necessary.

5.1.12 **ENSURE** disconnect switch ANA-WT-DS-331 for ANA-WT-LDSTA-331 is left in the ON or CLOSED position.

5.1.13 **VERIFY** that Test 5.1 is COMPLETE by SIGNING below.

Test Director Signature

Date

Operations Signature

Date

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

5.2.1 **DEENERGIZE** the leak detection relay panel ANA-WT-LDSTA-331 **AND OPEN** the front door.

5.2.2 **DISCONNECT AND ISOLATE ELECTRICALLY** probe circuit wire ANA-WT-LDE-331B-2(-) at terminal block ANA-WT-TB-331-12. Ref. Dwg. H-14-100989 sh.1

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

5.2.4 **DISCONNECT AND ISOLATE ELECTRICALLY** circuit wires ANA-WT-LD-331-2 at relay ANA-WT-K-331C. (2 wires)

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
ANA-WT-LDE-331B-2(-)	5.2.2			5.2.12		
ANA-WT-LD-331-2	5.2.4			5.2.14		
ANA-WT-LD-331-2	5.2.4			5.2.14		

5.2.6 **ENERGIZE** the leak detection relay panel ANA-WT-LDSTA-331. **AND ACTIVATE** the "ALARM RESET" Switch ANA-WT-PB-331C.

5.2.7 **VERIFY AND RECORD** on TABLE 1, the initial state of each output set of contacts on Voltage relay Trip Amp ANA-WT-EV-331 (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.

Test Director Initial

Date

5.2 SETTING THE MTL TRIP AMPLIFIER (Cont).

- 5.2.8 **APPLY** 1.5 Volts dc to terminals 1 and 4. (Reference Item No. 22, Drawing No. H-14-100983). (This can be done using terminals 10 & 12 on Term Block).
- 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.
- 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				
#13 and #14				

Test Director Initial

Date

- 5.2.11 **DEENERGIZE** the leak detection relay cabinet.
- 5.2.12 **REPLACE** the probe circuit wire ANA-WT-LDE-331B-2(-) at terminal block ANA-WT-TB-331-12 **AND** TORQUE termination screw to 7 inch/lbs.
- 5.2.13 **QC RECORD** landed wire data on Lift/Land table.
- 5.2.14 **REPLACE** both circuit wires ANA-WT-LD-331-2 at relay ANA-WT-K-331C **AND** TORQUE termination screw to 7 inch/lbs.
- 5.2.15 **QC RECORD** landed wire data on Lift/Land table.
- 5.2.16 **CLOSE** the panel door.
- 5.2.17 **VERIFY** that Test 5.2 is COMPLETE by SIGNING below.

Test Director Signature

Date

Operations Signature

Date

5.3 SETTING THE PROBE ELEVATIONS

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

Test Director Initial Date

- 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

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

Test Director Initial Date

- _____
5.3.4 **REMOVE** the electrode holder cover plate.

- _____
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.

- _____
5.3.6 **LOWER** the probe wires toward the valve pit floor until the probes are just touching the pit floor.

- _____
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.

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

5.3 SETTING THE PROBE ELEVATIONS (Cont).

- _____ 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-14-100985, sht 1, "INSTM 241-AN-A VALVE PIT ELEVATION & DETAILS", for tolerances in this measurement.
- _____ 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.
- _____ 5.3.11 **TIGHTEN** the probe wire cord grip, at the position indicated in Step 5.3.9.
- _____ 5.3.12 **VERIFY** the cord grips are tightened at the mark made in Step 5.3.9.

_____ Test Director Initial _____ Date

- _____ 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 _____ Date

_____ Operations Signature _____ Date

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

5.4.1 **LOCATE AND ENSURE** that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331 (Drawing No. H-14-100989) is in the CLOSED position or ON, AND the local alarm strobe light is deactivated.

5.4.2 **ROTATE** selector switch ANA-WT-SS-331 to the "PROBE TEST" position, THEN **RELEASE** allowing spring return to the "Operate" position.

5.4.3 **VERIFY** that the local strobe light alarm ANA-WT-LDA-331A located on ANA-WT-LDSTA-331 is activated.

Test Director Initial

Date

5.4.4 **ROTATE AND HOLD** selector switch ANA-WT-SS-331 to the "PROBE TEST" position.

5.4.5 **MEASURE AND RECORD** the voltage BETWEEN Terminal TB-DC2-59 and TB-DC2-58 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE

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

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

_____ Test Director Initial _____ Date

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

_____ 5.4.8 **LOCATE AND ACTIVATE** the "ALARM RESET" Switch ANA-WT-PB-331C.

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

_____ Test Director Initial _____ Date

_____ 5.4.10 **MEASURE AND RECORD** the voltage BETWEEN Terminal TB-DC2-59 and TB-DC2-58 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE _____

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

_____ Test Director Initial _____ Date

5.4.12 **VERIFY** that Test 5.4 is COMPLETE by SIGNING below.

_____ Test Director Signature _____ Date

_____ Operations Signature _____ Date

5.5 LAMP TEST

NOTE - The "LAMP TEST" push-button ANA-WT-PB-331E is designed to test the strobe light from the field. The following procedure demonstrates how to perform this function.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE

- 5.5.1 **ENSURE** that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331, drawing reference No. H-14-100989, SH. 1, is in the CLOSED position or ON, AND the local alarm strobe light is deactivated.
- 5.5.2 **DEPRESS** the "LAMP TEST" switch ANA-WT-PB-331E, Drawing No. H-14-100989, SH. 1, **AND HOLD**.
- 5.5.3 **VERIFY** that the local strobe light alarm ANA-WT-LDA-331A, Drawing No. H-14-100989, SH. 1, is activated.

Test Director Initial

Date

- 5.5.4 **RELEASE** the "LAMP TEST" switch ANA-WT-PB-331E.
- 5.5.5 **VERIFY** that the local strobe light alarm ANA-WT-LDA-331A is NOT activated.

Test Director Initial

Date

- 5.5.6 **VERIFY** that Test 5.5 is COMPLETE by SIGNING below.

Test Director Signature

Date

Operations Signature

Date

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-A valve pit. Adding Salt Water to the 241-AN-A 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

___ 5.6.1 **ENSURE** that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331, Drawing No. H-14-100989, SH. 1, is in the CLOSED position or ON, AND local strobe light alarm is DEACTIVATED.

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

Test Director Initial _____ Date _____

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

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

___ 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.

___ 5.6.6 **POUR** Salt Water solution into the view port.

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

___ 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

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

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

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

Test Director Initial

Date

___ 5.6.11 **VERIFY** that the local strobe light alarm ANA-WT-LDA-331A located on ANA-WT-LDSTA-331 is activated.

Test Director Initial

Date

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

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

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

___ 5.6.14 **INSTALL** shield plug removed in step 5.6.4.

___ 5.6.15 **LOCATE AND ACTIVATE** the "ALARM RESET" Switch ANA-WT-PB-331C located on ANA-WT-LDSTA-331.

___ 5.6.16 **VERIFY** the local strobe light alarm remains operational.

Test Director Initial

Date

___ 5.6.17 **MEASURE AND RECORD** the voltage BETWEEN Terminal TB-DC2-58 and TB-DC2-59 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE _____

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

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

Test Director Initial

Date

NOTE - During the next 24 hour period the ALARM reset switch ANA-WT-PB-231C located on ANA-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).

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

- ____ 5.6.20 **RECORD** each RESET attempt on ALARM RESET DATA TABLE.

ALARM RESET DATA TABLE

Time Of Liquid Addition Completion

[illegible]

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	HNF-4648	0		30 of 47

Type	Document No.	Rev/Mod	Release Date	Page
CONTINUOUS	HNF-4648	0		31 of 47

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

- ___ 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.
- ___ 5.6.22 PLACE the low point drain assembly in the OPEN or RETRACTED position.
- ___ 5.6.23 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANA-WT-PB-231C.
- ___ 5.6.24 VERIFY the local strobe light alarm is NOT operating.

Test Director Initial_____
Date

- ___ 5.6.25 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-58 and TB-DC2-59 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE _____

- ___ 5.6.26 VERIFY the voltage recorded in Step 5.6.25 at a nominal value of "24" Volts dc.

Test Director Initial_____
Date

- ___ 5.6.27 ENSURE low point drain assembly is in OPEN or RETRACTED position, AND FLUSH with 10 gal. RAW WATER.
- ___ 5.6.28 REPEAT FLUSH with 11 gal. RAW WATER.
- ___ 5.6.29 REPEAT FLUSH with 12 gal. RAW WATER.
- ___ 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.

Test Director Signature_____
Date_____
Operations Signature_____
Date

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

- _____ 5.7.1 **ENSURE** that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331, reference drawing No. H-14-100989, SH. 1, is in the CLOSED position or ON, AND the local alarm strobe light is deactivated.
- _____ 5.7.2 **ROTATE** selector switch ANA-WT-SS-331 to the "FAIL RELAY TEST" position, then **RELEASE** allowing spring return to the "Operate" position.
- _____ 5.7.3 **VERIFY** that the local strobe light alarm ANA-WT-LDA-331A, reference drawing No. H-14-100989, SH. 1, is activated.

Test Director Initial_____
Date

- _____ 5.7.4 **ROTATE AND HOLD** selector switch ANA-WT-SS-331 to the "FAIL RELAY TEST" position.
- _____ 5.7.5 **MEASURE AND RECORD** the voltage BETWEEN Terminal TB-DC2-60 and TB-DC2-59 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE _____

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

Test Director Initial_____
Date

5.7 MTL FAIL SAFE RELAY SWITCH TEST (Cont.)

5.7.7 RELEASE selector switch ANA-WT-SS-331 from the "FAIL RELAY TEST" position. (Switch should return to "OPERATE" position).

5.7.8 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANA-WT-PB-331C, reference drawing H-14-100989, SH. 1.

5.7.9 VERIFY the local strobe light alarm is NOT operating.

Test Director Initial / Date

5.7.10 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-60 and TB-DC2-59 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE _____

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

Test Director Initial Date

5.7.12 VERIFY that Test 5.7 is COMPLETE by SIGNING below.

Test Director Signature

Date

Operations Signature

Date

5.8 MTL FAIL SAFE RELAY SIMULATION TEST

NOTE -

The MTL fail safe relay simulation test verifies the systems ability to alarm in the event of the continuously monitored probe circuit is disconnected or damaged. This test will be accomplished by removing one of the plugs in the probe circuit.

ELECTRICAL TEST EQUIPMENT DATA TABLE

TOOL NAME	ID. NUMBER	CAL DUE DATE	INITIAL/DATE

5.8.1 ENSURE that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331, reference drawing No. H-14-100989, SH. 1, is in the CLOSED or ON position AND local alarm strobe light is deactivated.

5.8.2 LOCATE AND REMOVE one end of cord set #CSI between terminal box ANA-WT-TBX-W314-05P and terminal box ANA-WT-TBX-W314-05, reference drawing No. H-14-100989, sh. 1, and H-14-100936, SH. 1.

5.8.3 VERIFY that the local strobe light alarm ANA-WT-LDA-331A, reference drawing No. H-14-100989, SH. 1, is activated.

5.8.4 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANA-WT-PB-331C, reference drawing No. H-14-100989, SH. 1. 5.8.5 VERIFY the strobe light alarm remains operational.

5.8.6 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-60 and TB-DC2-59 in Field Terminal Box AN241-WT-TBX-101. VOLTAGE

5.8 MTL FAIL SAFE RELAY SIMULATION TEST (Cont.)

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

_____ Test Director Initial _____ Date

_____ 5.8.8 **PLUG IN** the cord end removed in Step 5.8.2.

_____ 5.8.9 **LOCATE AND ACTIVATE** the "ALARM RESET" Switch ANA-WT-PB-331C, drawing reference No. H-14-100989, SH. 1.

_____ 5.8.10 **VERIFY** the strobe light alarm is NOT operating.

_____ Test Director Initial _____ Date

_____ 5.8.11 **MEASURE AND RECORD** the voltage BETWEEN Terminal TB-DC2-60 and TB-DC2-59 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE _____

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

_____ Test Director Initial _____ Date

5.8.13 **VERIFY** that Test 5.8 is COMPLETE by SIGNING below.

_____ Test Director Signature _____ Date

_____ Operations Signature _____ Date

5.9 REMOTE RESET TEST

NOTE - The remote leak detection relay test is a function that allows the operator to reset the leak detection relay panel from the HMI. For the purposes of this Acceptance Test Procedure, a signal will be generated from Field Terminal Box AN241-WT-TBX-101 the field device. 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

5.9.1 **ENSURE** that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331, reference drawing No. H-14-100989, SH. 1, is in the OPEN or OFF position.

5.9.2 **WIRE** a temporary switch, S-1, BETWEEN Terminal TB-DC4-50 and TB-DC2-55 in Field Terminal Box AN241-WT-TBX-101.

5.9.3 QC **VERIFY** temporary switch installed.

QC Initial

Date

5.9.4 **ENSURE** the temporary switch is in the OPEN or OFF position.

5.9.5 **ENSURE** Panel ANA-WT-PNL-331 DISCONNECT SWITCH ANA-WT-DS-331 is in the CLOSED or ON Position AND local alarm strobe light is deactivated.

5.9.6 **ROTATE** selector switch ANA-WT-SS-331 to the "PROBE TEST" position, then **RELEASE** allowing spring return to the "Operate" position.

5.9.7 **VERIFY** that the local strobe light alarm ANA-WT-LDA-331A, reference drawing No. H-14-100989, SH.2, is activated.

Test Director Initial

Date

5.9 REMOTE RESET TEST (Cont.)

_____ 5.9.8 **MEASURE AND RECORD** the voltage BETWEEN Terminal TB-DC4-50 and TB-DC2-55 in Field Terminal Box AN241-WT-TBX-101.

VOLTAGE _____

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

_____ Test Director Initial

_____ Date

_____ 5.9.10 Momentarily **CLOSE THEN OPEN** the temporary switch BETWEEN Terminal TB-DC4-50 and TB-DC2-55 in Field Terminal Box AN241-WT-TBX-101 S-1, installed in Step 5.9.2.

_____ 5.9.11 **VERIFY** that the local strobe light alarm ANA-WT-LDA-331A, reference drawing No. H-14-100989, SH. 1, is NOT operational.

_____ Test Director Initial

_____ Date

_____ 5.9.12 **ENSURE** that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331, reference drawing No. H-14-100989, SH. 1, is in the OPEN or OFF position.

_____ 5.9.13 **REMOVE** temporary switch, S-1, BETWEEN Terminal TB-DC4-50 and TB-DC2-55 in Field Terminal Box AN241-WT-TBX-101.

_____ 5.9.14 QC **VERIFY** temporary switch removed.

_____ QC Initial

_____ Date

5.9.15 **VERIFY** that Test 5.9 is COMPLETE by SIGNING below.

_____ Test Director Signature

_____ Date

_____ Operations Signature

_____ Date

5.10 REMOTE TRIP AMPLIFIER / VOLTAGE RELAY TEST

NOTE -

The remote leak detection relay test is a function that allows the operator to reset the leak detection relay panel from the HMI. For the purposes of this Acceptance Test Procedure, a signal will be generated from field terminal Box AN241-WT-TBX-101 the field device. 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

5.10.1 ENSURE that ANA-WT-LDSTA-331 disconnect switch ANA-WT-DS-331, reference drawing No. H-14-100989, SH. 1, is in the OPEN or OFF position.

5.10.2 WIRE a temporary switch, S-1, BETWEEN Terminal TB-DC4-50 and TB-DC2-57 in field terminal Box AN241-WT-TBX-101.

5.10.3 QC VERIFY temporary switch installed.

QC Initial _____ Date _____

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

5.10.5 ENSURE Panel ANA-WT-PNL-331 DISCONNECT SWITCH is in the CLOSED or ON Position AND local alarm strobe light is deactivated.

5.10.6 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC4-50 and TB-DC2-57 in field terminal Box AN241-WT-TBX-101.

VOLTAGE _____

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

Test Director Initial _____ Date _____

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

5.10.8 Momentarily CLOSE then OPEN the temporary switch BETWEEN Terminal TB-DC4-50 and TB-DC2-57 in Field Terminal Box AN241-WT-TBX-101.

5.10.9 VERIFY that the local strobe light alarm ANA-WT-LDA-331A, reference drawing No. H-14-100989, SH. 1, is operational.

Test Director Initial _____ Date _____

5.10.10 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANA-WT-PB-331C, reference drawing No. H-14-100989, SH. 1.

5.10.11 VERIFY that the local strobe light alarm ANA-WT-LDA-331A is NOT operational.

Test Director Initial _____ Date _____

5.10.12 ENSURE Panel ANA-WT-PNL-331 DISCONNECT SWITCH is in the OPEN or OFF Position.

5.10.13 REMOVE temporary switch, S-1, BETWEEN Terminal TB-DC4-50 and TB-DC2-57 in Field Terminal Box AN241-WT-TBX-101.

5.10.14 QC VERIFY temporary switch removed.

QC Initial _____ Date _____

5.10.15 VERIFY that Test 5.10 is COMPLETE by SIGNING below.

Test Director Signature _____ Date _____

Operations Signature _____ Date _____

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

NOTE - The remote leak detection relay test is a function that allows the operator to reset the leak detection relay panel from the HMI. For the purposes of this Acceptance Test Procedure, a signal will be generated from field terminal box AN241-WT-TBX-101 the field device. 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

5.11.1 ENSURE that ANA-WT-LDSTA-331 disconnect switch is in the OPEN or OFF position.
ANA-WT-DS-331, reference drawing No. H-14-100989, SH. 1, WIRE a temporary switch, S-1, BETWEEN terminal TB-DC4-50 and TB-DC2-56 in field terminal box AN241-WT-TBX-101.

5.11.3 QC VERIFY temporary switch installed.

5.11.4 ENSURE the temporary switch is in the OPEN or OFF position.
5.11.5 ENSURE Panel ANA-WT-PNL-331 DISCONNECT SWITCH is in the CLOSED or ON Position AND local alarm strobe light is deactivated.

5.11.6 MEASURE AND RECORD the voltage BETWEEN terminal TB-DC4-50 and TB-DC2-56 in field terminal box AN241-WT-TBX-101.

VOLTAGE

5.11.7 VERIFY the voltage recorded in Step 5.11.6 is at a nominal value of "24" Volts dc.

Test Director Initial _____
Date _____

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

5.11.8 Momentarily CLOSE then OPEN the temporary switch BETWEEN Terminal TB-DC4-50 and TB-DC2-56 in Field Terminal Box AN241-WT-TBX-101.

5.11.9 VERIFY that the local strobe light alarm ANA-WT-LDA-331A, reference drawing No. H-14-100989, SH. 1, is operational.

Test Director Initial

Date

5.11.10 LOCATE AND ACTIVATE the "ALARM RESET" Switch ANA-WT-PB-331C, reference drawing No. H-14-100989, SH. 1.

5.11.11 VERIFY that the local strobe light alarm ANA-WT-LDA-331A is NOT operational.

Test Director Initial

Date

5.11.12 ENSURE Panel ANA-WT-PNL-331 DISCONNECT SWITCH ANA-WT-DS-331 is in the OPEN or OFF Position.

5.11.13 REMOVE the temporary switch BETWEEN Terminal TB-DC4-50 and TB-DC2-56 in Field Terminal Box AN241-WT-TBX-101.

5.11.14 QC VERIFY temporary switch removed.

QC Initial

Date

5.11.15 VERIFY that Test 5.11 is COMPLETE by SIGNING below.

Test Director Signature

Date

Operations Signature

Date

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ATP EXCEPTION LOG

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Page _____ of _____

Number	Date	Description

ATP EXCEPTION RECORD

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Page _____ of _____

ATP STEP NUMBER:		ATP EXCEPTION LOG#:	
DESCRIPTION OF EXCEPTION:			
NAME / ORGANIZATION OF INITIATOR:			
DATE OF EXCEPTION:			
RESOLUTION OF EXCEPTION:			
DATE OF RESOLUTION:			
TEST DIRECTOR SIGNATURE:		DATE:	
PROJECT ENGINEER SIGNATURE:		DATE:	
QUALITY ASSURANCE SIGNATURE:		DATE:	

INITIALS

[illegible]

PROCEDURE HISTORY SIGNATURE SHEET

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