DISTRIBUTION SHEET

To Distribution	From Tank Farm Projects	Page 1 of 1 Date 04/28/95
Project Title/Work Order Acceptance Test Procedure for Cathodic Protection, Rectifier 11		EDT No. 611576 ECN No. --

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
<u>U.S. Department of Energy, Richland Operations Office</u>					
C. R. Pacheco	S7-52	X			
<u>ICF Kaiser Hanford Company</u>					
J. L. Henderson	E6-22	X			A
<u>Westinghouse Hanford Company</u>					
R. L. Brown	B4-08	X			
H. M. Chafin	G6-07	X			
F. T. Clifton	G6-06	X			
K. A. Colosi	R3-27	X			
R. A. Dodd	S5-05				X
J. H. Haberman	R1-30	X			
M. D. Harding	S5-07	X			
M. N. Islam	R3-08				X
S. R. Nelson	G6-14				X
S. R. Pierce	S5-05	X			
Project Database	G6-51	X			
Project Files	R1-28	X			
Central Files (orig. +2)	L8-04	X			
OSTI (2)	L8-07	X			

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APR 28 1995
35 Station 21

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT No 611576

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Waste Transfer Projects	4. Related EDT No.: 609760
5. Proj./Prog./Dept./Div.: W-030	6. Cog. Engr.: K. A. Colosi	7. Purchase Order No.: N/A
8. Originator Remarks: These Acceptance Test Procedures are being submitted for your approval.		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: ASAP

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	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-W030-ATP-001		0	Cathodic Protection - Rectifier 31	2SQ	1		
2	WHC-SD-W030-ATP-002		0	Cathodic Protection - Rectifier 41	2SQ	1		
3	WHC-SD-W030-ATP-003		0	Cathodic Protection - Rectifier 11	2SQ	1		

16. KEY					
Impact Level (F)		Reason for Transmittal (G)			Disposition (H) & (I)
1, 2, 3, or 4 (see MRP 5.43)		1. Approval	4. Review		1. Approved
		2. Release	5. Post-Review		2. Approved w/comment
		3. Information	6. Dist. (Receipt Acknow. Required)		3. Disapproved w/comment
					4. Reviewed no/comment
					5. Reviewed w/comment
					6. Receipt acknowledged

(G)	(H)	17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)								(G)	(H)
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
1	1,2	Cog.Eng. K. A. Colosi	R3-27	3/14/95		J. H. Haberman (CP cog.)	R1-30	3/14/95		1	2
1	1,2	Cog. Mgr. G. L. Parsons	S4-57	3/14/95							
1	1,2	QA H. M. Chafin	G6-07	3/14/95							
1	1,2	Safety M. N. Islam	R3-08	3/14/95							
1	1,2	Startup F. T. Clifton	G6-06	3/14/95							
1	1,2	Ops. M. D. Harding	S0-09	3/15/95							
1	1,2	Facility Engr. S. R. Pierce	R1-51	3/15/95							

18. K. A. Colosi Signature of EDT Originator Date 3/14/95	19. K. A. Colosi Authorized Representative for Receiving Organization Date 3/14/95	20. K. A. Colosi G. L. Parsons D.B. DeFoe Cognizant/Project Engineer's Manager Date 3/24/95	21. DOE APPROVAL (if required) Ltr. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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RELEASE AUTHORIZATION

Document Number: WHC-SD-W030-ATP-003, Rev. 0

Document Title: Acceptance Test Procedure for Cathodic Protection, Rectifier 11

Release Date: April 27, 1995

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

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

V.L. Birkland
V.L. Birkland

April 27, 1995

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SUPPORTING DOCUMENT		1. Total Pages <u>17</u>
2. Title Acceptance Test Procedure for Cathodic Protection, Rectifier 11	3. Number WHC-SD-W030-ATP-003	4. Rev No. 0
5. Key Words W-030, Cathodic, test, procedure	6. Author Name: F. T. Clifton Signature Organization/Charge Code 71620/NF101	
7. Abstract Acceptance test procedure for Project W-030 Cathodic Protection Installation, 241-AY and 241-AZ Tank Farm Ventilation Upgrade.		
		8. RELEASE STAMP <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> OFFICIAL RELEASE BY WHC DATE APR 28 1995 35 Station 21 </div>

ACCEPTANCE TEST PROCEDURE WHC-SD-W030-ATP-003

TEST TITLE Cathodic Protection - Rectifier 11

LOCATION 200-E Area (Approximately 50 feet south of Building 241-AN-271)

PROJECT NUMBER W-030 WORK ORDER CR1132

PROJECT TITLE Tank Farm Ventilation Upgrade

Prepared By
ICF Kaiser Hanford Company
Richland, Washington

For the U.S. Department of Energy
Contract DE-AC06-93RL12359

PROCEDURE APPROVAL

ICF KAISER HANFORD COMPANY (ICF KH)

<u>A. R. Snowwhite</u> AKS	<u>2-15-95</u> <u>10-26-94</u>	<u>J E Breed</u>	<u>10-25-94</u>
Originator	Date	Technical Documents	Date
<u>Christopher A. Fato</u> <u>C. Dublett</u>	<u>2/15/95</u> <u>10-28-94</u>	<u>L. Schuchardt</u> AKS <u>2-15-95</u>	<u>11-4-94</u>
Checker	Date	Safety	Date
<u>RF G. Whittings</u> RFM	<u>2/24/95</u> <u>11-4-94</u>	<u>CE Horton</u> AKS <u>2-15-95</u>	<u>11-3-94</u>
Environmental	Date	Quality Engineering	Date
<u>R. Hollingsfor</u> J.L. Henderson <u>AKS</u> <u>2/22/95</u>	<u>11-22-94</u>		
Project Management	Date		

Westinghouse Hanford Company (WHC)

<u>D. B. Cle</u>	<u>3-24-95</u>	<u>Harsh M. Chafin</u>	<u>3/14/95</u>
Projects Department	Date	Quality Assurance	Date
<u>AKS</u>	<u>3/6/95</u>	<u>M. D. Harding</u>	<u>3-15-95</u>
Safety	Date	Operations	Date

EXECUTION AND TEST APPROVAL

EXECUTED BY

_____ Test Director/Organization	_____ Date	_____ Test Operator/Organization	_____ Date
-------------------------------------	---------------	-------------------------------------	---------------

_____ Recorder/Organization	_____ Date
--------------------------------	---------------

WITNESSES

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

_____ Witness/Organization	_____ Date	_____ Witness/Organization	_____ Date
-------------------------------	---------------	-------------------------------	---------------

A-E APPROVAL

ICF Kaiser Hanford Company (ICF KH)

Without exceptions _____	With exceptions resolved _____	With exceptions outstanding _____
--------------------------	--------------------------------	-----------------------------------

_____ Acceptance Inspection	_____ Date	_____ Design Engineer	_____ Date
--------------------------------	---------------	--------------------------	---------------

_____ Project Manager	_____ Date
--------------------------	---------------

TEST APPROVAL AND ACCEPTANCE

Westinghouse Hanford Company (WHC)

Without exceptions _____	With exceptions resolved _____	With exceptions outstanding _____
--------------------------	--------------------------------	-----------------------------------

_____ <Title or Department>	_____ Date	_____ <Title or Department>	_____ Date
--------------------------------	---------------	--------------------------------	---------------

_____ <Title or Department>	_____ Date	_____ Cathodic Protection Engineer	_____ Date
--------------------------------	---------------	---------------------------------------	---------------

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

1 PURPOSE

This Acceptance Test Procedure (ATP) has been prepared to demonstrate that the cathodic protection system functions as required by project criteria.

2 REFERENCES

2.1 DRAWINGS

- *H-2-91040, Sh 1, Rev 3 Cathodic Protection - Plot Plan, Test Stations and Jumpers
- *H-2-91040, Sh 2, Rev 3 Cathodic Protection - Plot Plan Anode Installation
- *H-2-91041, Sh 2, Rev 3 Cathodic Protection - Plot Plan, Test Stations and Jumpers
- H-2-131378, Sh 1, Rev 0 Cathodic Protection Plan - AZ Tank Farm
- H-2-131379, Sh 1, Rev 0 Cathodic Protection - Details
- *Drawings that show existing cathodic protection systems

2.2 SPECIFICATIONS

- W-030-C3, Rev 0 Construction Specification (Section 16640)

2.3 ENGINEERING CHANGE NOTICES (ECN)

Prior to final test approval, enter ECNs written against this ATP.

3 RESPONSIBILITIES

3.1 GENERAL

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

3.2 WHC PROJECT ENGINEER

- 3.2.1 Designates a Test Director.
- 3.2.2 Coordinates testing with the Facility Manager.
- 3.2.3 Acts as liaison between the participants in acceptance testing.
- 3.2.4 Distributes the approved testing schedule before start of testing.
- 3.2.5 Schedules and conducts a pretest kickoff meeting with test participants when necessary.

- 3.2.6 Notifies the persons performing and witnessing the test 2 days before the start of testing.
 - 3.2.7 Schedules a dry run when necessary.
 - 3.2.8 Notifies concerned parties when a change is made in the testing schedule.
 - 3.2.9 Signs Execution and Test Approval page when test is approved and accepted.
 - 3.2.10 Takes necessary action to clear exceptions to the test.
 - 3.2.11 Signs Exception Form when exception has been resolved.
 - 3.2.12 Provides a distribution list for the approved and accepted ATP(ATR).
- 3.3 TEST DIRECTOR
- 3.3.1 Coordinates and directs acceptance testing.
 - 3.3.2 Confirms that field testing and inspection of the system or portion of the system to be tested has been completed.
 - 3.3.3 Stops any test which, in his or her judgment, may cause damage to the system until the problem has been resolved.
 - 3.3.4 After verifying there is no adverse impact, may alter the sequence in which systems or subsystems are tested.
 - 3.3.5 Ensures that required environmental conditions are maintained.
 - 3.3.6 If a test is to be suspended for a period of time, ensures that the system is left in a safe mode.
 - 3.3.7 Before restarting suspended test, re-verifies the test prerequisites.
 - 3.3.8 Initiates ECNs to document required changes to the ATP.
 - 3.3.9 Reviews recorded data, discrepancies, and exceptions.
 - 3.3.10 Obtains information or changes necessary to clear or resolve objections during the performance of the test.
 - 3.3.11 Signs Execution and Test Approval page when test has been performed.
 - 3.3.12 Signs Exception Form when exception has been resolved.
 - 3.3.13 Obtains required signatures on the ATP Master prior to reproduction and distribution.

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

- 3.6.3 Requests in writing from the Test Director those services, materials, or equipment that have been designated as being supplied by others.
- 3.6.4 Confirms that all equipment required for performing test will be available at the start of testing.
- 3.6.5 Signs the Execution and Test Approval page.

3.7 DESIGN ENGINEER ACCEPTANCE INSPECTION

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

4 CHANGE CONTROL

Required changes to this ATP must be processed on ECNs in accordance with company procedures. If a need for change is discovered in the course of running the test, the test shall be stopped until the ECN is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

5 EXECUTION

5.1 OCCUPATIONAL SAFETY AND HEALTH

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

5.2 PERFORMANCE

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

6 EXCEPTIONS

6.1 GENERAL

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

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

6.2 RECORDING

- 6.2.1 Number each exception sequentially as it occurs and record it on an Exception Form (KEH-428), sample appended.
- 6.2.2 Enter name and organization of objecting party for each exception.
- 6.2.3 Enter planned action to resolve each exception when such determination is made.

6.3 RETEST/RESOLUTION

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

- 6.3.1 When action taken results in an acceptable retest, sign and date Retest Execution and Acceptance section of the Exception Form.
- 6.3.2 When action taken does not involve an acceptable retest, strike out the Retest Execution and Acceptance section of the Exception Form.

6.4 APPROVAL AND ACCEPTANCE

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

- 6.4.1 Retest Approved and Accepted: Applicable when Retest Execution and Acceptance section is completed.
- 6.4.2 Exception Accepted-As-Is: Requires detailed explanation.
- 6.4.3 Other: Requires detailed explanation.

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

6.5 DISTRIBUTION

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

7 PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS

7.1 PREREQUISITES

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

- 7.1.1 Systems have been inspected for compliance with construction documents.
- 7.1.2 Reference documents (including this ATP) have been verified for correct revision number and outstanding ECNs.

- 7.1.3 A Prejob Safety Analysis has been prepared and a Prejob Safety Meeting has been conducted.
- 7.1.4 Test instruments (except Waveform Analyzer) have a valid calibration stamp attached. Test instrument identification numbers and calibration expiration dates have been recorded in Para 7.2.

7.2 EQUIPMENT/INSTRUMENTS

Supplied by Test Operator unless otherwise noted. {Delete items not required. Add any additional necessary items.}

- 7.2.1 Voltohmmeter (VOM): Digital, portable, 0-150 V ac/dc.
Instrument No. _____ Expiration Date _____
- 7.2.2 Waveform Analyzer: Hand held instrument with display of ON-OFF pipe-to-soil potential, DC potential or AC potential, MCMiller Co, Model WFA-1.
- 7.2.3 Test leads with insulated covers for wire clips.
- 7.2.4 Portable test reel, containing a minimum of 200 feet of test wire, 600 V, No. 18 AWG minimum.
- 7.2.5 Portable copper-copper sulphate reference electrode. (Not required by ATP but may be required if required values are not attainable by use of permanent reference electrodes.)
- 7.2.6 Pipe locator.

7.3 ABBREVIATIONS

- ADC/UCNI Authorized Derivative Classifier/Unclassified Controlled Nuclear Information
- ECN Engineering Change Notice

8 RECTIFIER, CABLES, AND SYSTEM OPERATION

8.1 The following steps will verify (1) rectifier nameplate data, (2) rectifier input wiring is correctly terminated and color coded, and (3) anode header cable, anode loop cable, and negative return cables are properly labeled and connected.

8.1.1 Record nameplate data for Rectifier 11.

Make _____

Model _____

Serial Number _____

AC Line Input Voltage _____

AC Line Frequency _____

Number of Phases _____

DC Output Voltage _____

DC Output Current _____

8.1.2 Verify that rectifier input circuit breaker is OPEN.

8.1.3 Open disconnect switch on south exterior wall of Instrument Building 241-AN-271 that supplies ac input power to Rectifiers 11, 12, and 13.

8.1.4 Verify no dc voltage at rectifier output terminals.

8.1.5 Verify the rectifier case is filled with oil to the indicated level and that oil is CLEAR.

8.1.6 Verify the ac wiring, from disconnect switch on Instrument Building 241-AN-271, is terminated on the ac input terminals of rectifier.

8.1.6.1 Phase A (Red).

8.1.6.2 Phase B (Yellow)

8.1.6.3 Phase C (Blue or Black)

8.1.6.4 Ground (Green)

8.1.7 Verify the rectifier output cables are properly labeled.

8.1.7.1 (+) Anode Feeder Cable.

8.1.7.2 (+) Anode Loop Cable.

8.1.7.3 (-) Negative Return Cable.

- _____ 8.1.7.4 (-) Negative Return Cable.
- 8.1.8 Verify the anode feeder and anode loop cables are terminated at the rectifier positive terminals.
- _____ 8.1.8.1 (+) Anode Feeder Cable.
- _____ 8.1.8.2 (+) Anode Loop Cable.
- _____ 8.1.9 Verify the negative return cables are connected to rectifier negative terminals.
- _____ 8.1.9.1 (-) Negative Return Cable
- _____ 8.1.9.2 (-) Negative Return Cable
- _____ 8.1.10 Verify the rectifier case is connected to the ground rod.

NOTE: The steps in Paragraphs 8.2 and 8.3 may be done concurrently.

8.2 The following steps will verify pipe test conductors are (1) terminated on designated terminals in accordance with the Drawings and (2) labeled correctly with the pipe number or reference electrode. Record terminal number to which each conductor is connected.

- _____ 8.2.1 Test Station T(11-201)
- 10-inch V-AZ1200-M9 Terminals _____ and _____
w/14" ENC-M26
- Reference Electrode Terminal _____
- _____ 8.2.2 Test Station T(11-202)
- 8-inch V-AZ1202-M9 Terminals _____ and _____
w/12" ENC-M26
- Reference Electrode Terminal _____
- _____ 8.2.3 Test Station T(11-203)
- 8-inch V-AZ1101-M9 Terminals _____ and _____
w/12" ENC-M26
- Reference Electrode Terminal _____
- _____ 8.2.4 Test Station T(11-204)
- 10-inch V-AZ2200-M9 Terminals _____ and _____
w/14" ENC-M26
- Reference Electrode Terminal _____

- _____ 8.2.5 Test Station T(11-205)
- 8-inch V-AZ2202-M9 Terminals _____ and _____
w/12" ENC-M26
- Reference Electrode Terminal _____
- 8.3 Using a VOM, measure and record resistance between each set of pipe test conductors that are identified as being connected to the same pipe. Resistance measured shall be less than 1 ohm.
- _____ 8.3.1 Record the following VOM data:
- Manufacturer _____
- Model _____
- Serial Number _____
- Calibration Sticker Data _____
- _____ 8.3.2 Test Station T(11-201)
- 10-inch V-AZ1200-M9 w/14" ENC-M26 _____ ohms
- _____ 8.3.3 Test Station T(11-202)
- 8-inch V-AZ1202-M9 w/12" ENC-M26 _____ ohms
- _____ 8.3.4 Test Station T(11-203)
- 8-inch V-AZ1101-M9 w/12" ENC-M26 _____ ohms
- _____ 8.3.5 Test Station T(11-204)
- 10-inch V-AZ2200-M9 w/14" ENC-M26 _____ ohms
- _____ 8.3.6 Test Station T(11-205)
- 8-inch V-AZ2202-M9 w/12" ENC-M26 _____ ohms
- 8.4 The following steps will verify proper operation of Rectifier 11.
- _____ 8.4.1 Open the input circuit breaker on Rectifiers 7, 8, 12, and 13 (Reference Drawings H-2-91040, Sh 2 and H-2-91041, Sh 2).
- _____ 8.4.2 Verify Rectifier 11 input circuit breaker is OPEN.
- _____ 8.4.3 Verify COARSE and FINE transformer taps on rectifier are set at the lowest levels (Coarse - A and Fine - 1).
- _____ 8.4.4 Close disconnect switch on Instrument Building 241-AN-271 that supplies ac input power to Rectifiers 11, 12, and 13.

Close rectifier input circuit breaker. Using meter on rectifier, record volts and amperes, and then open input circuit breaker. Set fine tap to next higher setting and leave coarse tap as previously set. Close input circuit breaker again and record volts and amperes, then open the input circuit breaker. Continue adjusting the output of the rectifier in steps until either the dc volts or dc amperes (whichever is first) approaches, but does not exceed, the nameplate rating of rectifier.

<u>Transformer Taps</u>		<u>dc Output</u>	
<u>Coarse</u>	<u>Fine</u>	<u>Volts</u>	<u>Amp</u>
A	1	_____	_____
A	2	_____	_____
A	3	_____	_____
A	4	_____	_____
A	5	_____	_____
B	1	_____	_____
B	2	_____	_____
B	3	_____	_____
B	4	_____	_____
B	5	_____	_____
C	1	_____	_____
C	2	_____	_____
C	3	_____	_____
C	4	_____	_____
C	5	_____	_____
D	1	_____	_____
D	2	_____	_____
D	3	_____	_____
D	4	_____	_____
D	5	_____	_____

8.4.6 Open rectifier input circuit breaker and the disconnect switch on Building 241-AN-271.

NOTE: Anode ground bed tests (voltage output tests of each anode) will not be required by this ATP since the majority of anodes are existing, and their voltage output would affect the output of the new anodes which would result in erroneous voltage values for the new anodes.

8.5 The following steps will verify proper operation of the cathodic protection system:

8.5.1 Position the 10-position DIP switch on the Pulse Generator (located in the rectifier control panel) as follows: SW1, 2, and 3 in the OFF position and SW4, 5, 6, 7, 8, 9, and 10 in the ON position.

8.5.2 Close Rectifier 11 input circuit breaker and the disconnect switch on Instrument Building 241-AN-271 and verify the rectifier has been energized for 24 hours prior to this test.

8.5.3 Measure and record the ON and OFF pipe to soil potential of each protected pipe by use of the Waveform Analyzer. OFF values should be equal to or more negative than (-)0.85 V dc (ie, (-)0.86 V dc) or ON values should be 100 mV more negative than the OFF values. If these values are not attainable by use of the existing permanent reference electrode a portable reference electrode may be used.

NOTE: Connect positive terminal of the Waveform Analyzer to the reference electrode terminal and the common terminal on the Waveform Analyzer to the pipe test conductor terminal. Turn the Mode switch from the OFF position to the WFA position, record values, then turn to the OFF position.

Volts

8.5.3.1	Test Station T(40-9)	On _____	Off _____
	Reference Electrode and 2-inch SL-160 w/4-inch ENC	On _____	Off _____
8.5.3.2	Test Station T(40-30)		
	Reference Electrode and 2-inch SL-500 w/4-inch ENC	On _____	Off _____
8.5.3.3	Test Station T(40-27)		
	Reference Electrode and 2-inch SL-500 w/4-inch ENC	On _____	Off _____

_____	8.5.3.4	Test Station T(40-31)		
		Reference Electrode and	On _____	Off _____
		2-inch SN-600 w/4-inch ENC		
		Reference Electrode and	On _____	Off _____
		2-inch SL-500 w/4-inch ENC		
_____	8.5.3.5	Test Station T(11-201)		
		Reference Electrode and	On _____	Off _____
		10-inch V-AZ1200-M9		
		w/14-inch ENC-M26		
_____	8.5.3.6	Test Station T(11-202)		
		Reference Electrode and	On _____	Off _____
		8-inch V-AZ1202-M9		
		w/12-inch ENC-M26		
_____	8.5.3.7	Test Station T(11-203)		
		Reference Electrode and	On _____	Off _____
		8-inch V-AZ1101-M9		
		w/12-inch ENC-M26		
_____	8.5.3.8	Test Station T(11-204)		
		Reference Electrode and	On _____	Off _____
		10-inch V-AZ2200-M9		
		w/14-inch ENC-M26		
_____	8.5.3.9	Test Station T(11-205)		
		Reference Electrode and	On _____	Off _____
		8-inch V-AZ2202-M9		
		w/12-inch ENC-M26		
_____	8.5.3.10	Turn the mode switch on the Waveform Analyzer to the OFF position and disconnect leads.		
_____	8.5.4	Open input circuit breaker on Rectifier 11 and close input circuit breaker on Rectifiers 7, 8, 12, and 13.		
_____	8.5.5	Testing complete, secure from test.		

END OF TEST

EXCEPTION NO.		Project No.		ATP No.		Rev.	
Recorded by			Organization		Date Recorded		ATP Page No.
Step No.		Requirement					
Description of Problem							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action							
Action Taken							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
Field Engineering		Date		Test Director (Name/Organization)		Date	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
APPROVAL AND ACCEPTANCE – OPERATING CONTRACTOR							
☐ Retest Approved and Accepted ☐ Exception Accepted-as-is* ☐ Other*							
* Explanation							
Approver 1		Date		Approver 2		Date	
Approver 3		Date		Approver 4		Date	

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