Page 1 of 1
1. EDT 630999

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) DST Maintenance & Reliability Eng		4. Related EDT No.: N/A							
5. Proj./Prog./Dept./Div.: RPP Corrosion Probe		6. Design Authority/Design Agent/Cog. Engr.: EC Norman Resp.		7. Purchase Order No.: N/A							
8. Originator Remarks: This ATP will document the satisfactory operation of the corrosion probe destined for installation in tank 241-AN-104				9. Equip./Component No.: N/A							
				10. System/Bldg./Facility: N/A							
				12. Major Assem. Dwg. No.: N/A							
				13. Permit/Permit Application No.: N/A							
11. Receiver Remarks: 11A. Design Baseline Document? ☐ Yes ☒ No				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	RPP-7133		0	Acceptance Test Plan for	N/A	1	1				
				Fourth-Generation Hanford							
				Corrosion Probe Tree							
				Assembly							
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	(L) Date	(M) MSIN
		Design Authority				1	1	EA Fredenburg	EFredenburg	9/25/00	
		Design Agent									
1	1	Resp. Cog. Engr. EC Norman	EC Norman	9/25/00							
1	2	Cog. Mgr. DH Shuford	DH Shuford	9/26/00							
		QA									
		Safety									
		Env.									
18. EC Norman Signature of EDT Originator 9/25/00			19. GE Duncan Authorized Representative for Receiving Organization 9/26/00			20. DH Shuford Design Authority/ Cognizant Manager 9/26/00			21. DOE APPROVAL (if required) Ctrl No. _____ ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments		

[illegible]

Acceptance Test Plan for Fourth-Generation Hanford Corrosion Probe Tree Assembly

E. C. Norman

CH2M HILL Hanford Group, Inc.

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Abstract: This Acceptance Test Plan (ATP) will document the satisfactory operation of the corrosion probe destined for installation in tank 241-AN-104.

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Approved For Public Release

ACCEPTANCE TEST PLAN FOR FOURTH GENERATION
HANFORD CORROSION PROBE TREE ASSEMBLY

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1.0 PURPOSE

This Acceptance Test Procedure (ATP) will document the satisfactory operation of the corrosion probe tree assembly. This ATP will be performed by the manufacturer prior to delivery to the site.

2.0 TEST OBJECTIVES

The objective of this procedure is to demonstrate and document the acceptance of the corrosion probe tree assembly. The test will consist of a pressure test to verify leak tightness of the probe tree body, a continuity test of the probe tree wiring, a test of the high level detector wiring, and a test of the operation of the Type K thermocouples.

3.0 REFERENCES

RPP-6380 "Design of Hanford Site's Fourth-Generation Multi-Function Corrosion Monitoring System "

4.0 RESPONSIBILITIES

4.1 DST MAINTENANCE AND RELIABILITY ENGINEERING

A member of the DST Maintenance and Reliability Engineering Organization shall be responsible for the coordination, scheduling, performance and documentation of this test procedure.

4.2 TEST WITNESSES

A member of the DST Maintenance and Reliability Engineering Organization shall perform the function of test witness. All corrosion probe tree assembly testing shall be witnessed, verified and approved with the Test Engineers signature

5.0 DOCUMENTATION

5.1 TEST RECORD

Any personnel involved in the performance of this test including the Test Engineer shall fill out a line in Section 8.0 RECORDS.

Test results shall be recorded by the Test Engineer. Unacceptable conditions or readings are to be referred to Section 9.0 EXCEPTIONS. A complete working copy of this procedure and all exception records shall be maintained as lifetime records in accordance with RPP-PRO-222, Rev. 0, Quality Assurance Records Standards.

5.2 EXCEPTIONS

Exceptions by step number, and other notes are to be recorded under Section 9.0. This section must be dispositioned (including the generation of any required ECNs) and signed off by the Test Engineer prior to final ATP acceptance. If no exceptions are encountered, this section shall be so noted and closed out with the signature of the Test Engineer. During the performance of this test errors in text may be encountered which require correction/adjustment to complete the test. The correction is to be noted in the ATP and listed as an exception in Section 9.0.

5.3 TEST EXECUTION RECORD

Approval of the ATP results shall be accepted by the Test Engineer as indicated by signature in Section 10.0.

6.0 TEST EQUIPMENT

- Calibrated Multimeter
- Air compressor
- Calibrated Pressure Gauge

7.0 ACCEPTANCE TEST

NOTE: Small leakage in the test apparatus is acceptable. Leakage from any component of the probe tree assembly is not acceptable (i.e. seal pins, fittings, welded joints, etc.). Test the final wired assembly with all fittings and seal pins in final configuration.

7.1 LEAK TEST

- 7.1.1 Record model, serial number, and calibration expiration date of pressure gauge below.

Instrument: _____ SN: _____

Calibration Expiration Date: _____

- 7.1.2 Place an appropriate air fitting on one end of the probe body.
- 7.1.3 Connect air supply to fitting and fill probe body with air.
- 7.1.4 Pressurize probe body to between 20 psig minimum or 30 psig maximum.

- 7.1.5 Hold pressure for 10 minutes or longer.
- 7.1.6 Apply "Snoop" solution to each fitting and welded joint.
- 7.1.7 Check for the formation of bubbles at fittings and joints.
- 7.1.8 If bubbles are detected at any of the joints, tighten the joint, if still leaking, disassemble joints that leaked and replace fitting, or seal pin. Rework any welds that are found to leak. Perform pressure testing steps again.
- 7.1.9 Test Engineer sign off that steps 7.1.1 through 7.1.8 are complete.

 Test Engineer

 Date

7.2 CONTINUITY TEST

Using a standard multimeter, electrical continuity shall be verified between each of the 24 corrosion probe electrodes and it's respective pin in the connector at the top of the corrosion probe tree assembly. Continuity will also be checked between each of the two high level detector elements and its respective wire termination point in the enclosure at the top of the probe. To perform this continuity check make the necessary connections between the appropriate pin in the connector at top of the probe and the electrode being tested. The continuity check will be performed starting with channel 1, and ending with channel 8. Each channel contains three electrodes leading to three unique pins in the connector at the top of the corrosion probe tree.

- 7.2.1 Record model, serial number, and calibration expiration date of multimeter below.

Instrument: _____ SN: _____

Calibration Expiration Date: _____

- 7.2.2 Continuity check: Circle Yes or No in regard to whether continuity exists.

<u>Pin #</u>	<u>Continuity</u>
a	Yes/No
Z	Yes/No
Y	Yes/No
X	Yes/No
W	Yes/No
V	Yes/No

Upper High Level Detector Element	Yes/No
---	--------

Lower High Level Detector Element	Yes/No
---	--------

U	Yes/No
T	Yes/No
S	Yes/No
R	Yes/No
P	Yes/No
N	Yes/No
M	Yes/No
L	Yes/No
K	Yes/No
J	Yes/No
H	Yes/No
G	Yes/No
F	Yes/No
E	Yes/No
D	Yes/No
C	Yes/No
B	Yes/No
A	Yes/No

7.2.3 Test Engineer sign that steps 7.2.1 through 7.2.2 are complete.

Test Engineer

Date

7.3 THERMOCOUPLE TEST

Using a multimeter or other calibrator and a heat gun, check operation of thermocouples that run from each detector to termination block in weathertight enclosure at top of probe. The end of each thermocouple should be heated and proper thermocouple response shall be verified with the multimeter or calibrator.

NOTE: Acceptance/rejection decision shall be based on results of manufacturers final calibration prior to shipping in conjunction with successful recording of thermocouple response to heat gun or other source of applied heat.

- 7.3.1 Record model, serial number, and calibration expiration date of multimeter below.

Instrument: _____ SN: _____

Calibration Expiration Date: _____

- 7.3.2 Check thermocouple response to applied heat source.

<u>Thermocouple #</u>	<u>Response (Y/N)</u>
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	

- 7.3.3 Test Engineer sign that steps 7.3.1 through 7.3.2 are complete.

Test Engineer

Date

8.0 RECORDS

TEST WITNESSES

Test Personnel Attendance Sign In:

_____	_____
Test Engineer	Date

Other Personnel Present:

Print Name	Signature	Position	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

9.0 EXCEPTIONS

ITEM	STEP	DESCRIPTION	DISPOSITION

TEST APPROVED WITH/WITHOUT EXCEPTIONS:

_____	_____
Test Engineer	Date

10.0 TEST EXECUTION RECORD

Section	Accept/Reject	Remarks
7.1		
7.2		
7.3		

Test Engineer

Date