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OPERABILITY TEST PROCEDURE FOR THE ANNULUS
THERMOCOUPLE TREE

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1	1	Cog. Eng. RJ STEELE	<i>[Signature]</i>	2/26/96	NI-46	G. Hanson	S5-05 <i>[Signature]</i>	2/27/96		3	1
1	1	SSI Team Lead, D.B. Spett	<i>[Signature]</i>	2/26/96	NI-46						
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1		M. Harding S5-10	<i>[Signature]</i>	2/27/96							
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18. <i>[Signature]</i> 2/26/96 Signature of EDT Originator Date	19. _____ Authorized Representative Date for Receiving Organization	20. <i>[Signature]</i> 2/26/96 Cognizant Manager Date	21. DOE APPROVAL (if required) Ctrl. No. NA <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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OPERABILITY TEST PROCEDURE (OTP) FOR THE ANNULUS THERMOCOUPLE TREE

R. J. Steele

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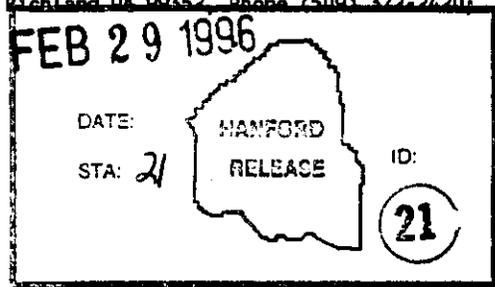
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Abstract:

This document outlines the steps required to properly document the operability testing of this prototypical system.

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Karen M. Holand
Release Approval Date 2/29/96

Release Stamp

Approved for Public Release

**OPERABILITY TEST PROCEDURE (OTP)
FOR THE
ANNULUS THERMOCOUPLE TREE**

Approval Designator: N/A

Robert J. Steele
Surveillance Systems Integration
February 5, 1996

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OPERABILITY TEST PROCEDURE OF THE ANNULUS THERMOCOUPLE TREE (ANTC)

1.0 PURPOSE/SCOPE

This Operability Test Procedure (OTP) provides step by step instructions for the functional testing of the Annulus Thermocouple Tree deployed into the annulus of underground nuclear waste storage tank 241-AN-107. The ANTC is designed to monitor the temperature gradient of the primary containment wall by using three arrays of contact thermocouples. The ANTC was deployed into the annulus under work plan WTWP-95-015, package number 2E-95-0039. The final acceptance of this system will be based upon satisfactory completion of this test.

The acceptance criteria for successful completion of this operability test procedure involves verification of engagement of 100% of the electromagnets and thermocouples as well as temperature indication and recording of each thermocouple.

Test deviations and corrective actions will be addressed when anomalies arise. It is envisioned that no corrective actions will be taken if thermocouples do not engage the primary containment wall, but will be documented and deactivated on the computer. Minor adjustments will be required to place the footing magnets and array magnets in optimum position.

2.0 REFERENCES

N/A

3.0 RESPONSIBILITIES

3.1 Surveillance Systems Integration (SSI)

Surveillance Systems Integration shall provide and operate all the required equipment including computers, cabling, hardware, and the field control unit which houses the temperature measurement test equipment, power supplies, and associated hardware.

3.2 Test Witnesses

East Tank Farms Operations shall provide a Person In Charge (PIC), East Tank Farms Surveillance Operators, and any ancillary personnel and equipment required for this activity.

Test witnesses are responsible for verifying that organizational requirements are met throughout the testing and documentation sequences of the procedure.

4.0 DOCUMENTATION

4.1 Test Records

All personnel involved in the performance of this test shall fill out applicable sections of this test procedure.

4.2 Exceptions

Exceptions by step number, and other notes shall be recorded in section 7. This section must be dispositioned and signed off prior to final OTP approval. If no exceptions are encountered, this section shall be noted and closed out with the required signatures. Errors noted during the performance of this test shall be corrected to facilitate test completion. Each correction shall be noted and listed in section 7.0 of this procedure.

4.3 Test Exception Record

Approval of the OTP results shall be accepted by the Caustic Addition Project Engineer as indicated by signature in Section 7.0 and 10.0.

5.0 PREREQUISITES

5.1 Work Plan WTWP-95-015 :Work Plan: "AN-107 Annulus Thermocouple Tree Installation and Removal" shall have the installation portion completed prior to the initiation of this operability test procedure.

6.0 OPERABILITY TEST

NOTE: The following steps should only be followed sequentially as they pertain to each ANTC.

6.1 Verify all Electromagnets engage the exterior of the primary containment wall as directed in WTWP-95-015.

ANTC 1:	_____	_____
	SSI Cognizant Engineer	Date
ANTC 2:	_____	_____
	SSI Cognizant Engineer	Date
ANTC 3:	_____	_____
	SSI Cognizant Engineer	Date

7.0 EXCEPTION TO OPERABILITY TEST

EXCEPTIONS				
Step No.	Date	PAGE	DISCREPANCY	DISPOSITION

TEST APPROVED WITH EXCEPTIONS

SSI TEST ENGINEER

CAUSTIC ADDITION PROJECT ENGINEER

8.0 TEST EXECUTION DATA SHEETS

DATE: _____ DOCUMENT NUMBER _____

SERIAL OR TEST NUMBER _____ TITLE OF TEST: _____

TEST PERFORMED BY: _____

TABLE 1

241-AN-107 ANNULUS THERMOCOUPLE TREE TEMPERATURES		
Thermocouple Number	ANTC Number	Temperature
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		

TEST WITNESSES: _____

Cognizant Engineer

_____ Date

_____ Caustic Addition Project Engineer

_____ Date

9.0 TEST EXECUTION RECORD

Reference Section	Accept/Reject	Remarks
6.1		
6.2		
6.3		
6.4		

TEST WITNESSES

SSI Test Engineer/Date

Caustic Addition Project Engineer/Date

10.0 FINAL ACCEPTANCE

Testing per this procedure has been completed satisfactorily and the Annulus Thermocouple Tree is ready for be placed into service.

Caustic Addition Project Engineer Date