

SEP 20 1996 ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 608432

2. To: (Receiving Organization) IRM		3. From: (Originating Organization) MHC/HFD		4. Related EDT No.: N/A	
5. Proj./Prog./Dept./Div.: MHC/FFTF		6. Design Authority/ Design Agent/Dep. Engr.: SM KOEHLER		7. Purchase Order No.: A101133	
8. Originator Remarks: THIS EDT TRANSMITS THE ACCEPTANCE TEST FOR THE FIRE ALARM REPORTING SYSTEM FOR 303A, 303B, 303E, AND 303G.				9. Equip./Component No.: N/A	
				10. System/Blgd./Facility: 26/303A,B,E,G/FFTF	
11. Receiver Remarks: 11a. Design Baseline Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				12. Major Assn. Insp. No.: ECN 614290	
				13. Parent/Parent Application No.:	
				14. Required Response Date:	

15. DATA TRANSMITTED								
(A) Item No	(B) Document/Drawing No	(C) Sheet No	(D) Rev No	(E) Title or Description of Data Transmitted	(F) Approval Designation	(G) Reason for Transmittal	(H) Orig. Date of Disposition	(I) Recv. or Disposition
1	MHC-SD-FF-ATP-011	NA	0	ACCEPTANCE TEST PROCEDURE	S	1	1	1

16. Approval Designation (F)		Reason for Transmittal (G)				Disposition (H & I)			
1	Approved	1	Approval	4	Review	1	Approved	4	Reviewed w/commitment
2	Released	2	Release	5	Post Review	2	Approved w/commitment	5	Reviewed w/commitment
3	Information	3	Information	6	Design Acceptance Required	3	Disapproved w/commitment	6	Receipt not acknowledged

17. SIGNATURE DISTRIBUTION (See Approval Designation for Required Signatures)											
EDT Revision	EDI Dept	EDT Name	(F) Signature	(I) Date	(M) MHC	EDT Revision	EDI Dept	EDT Name	(F) Signature	(I) Date	(M) MHC
1	1	Design Authority	<i>[Signature]</i>	9/16/96	LC-2K	3		IN PITTMAN	<i>[Signature]</i>	32-10	
1	1	Design Agent	<i>[Signature]</i>	9-16-96	66-2K	3		RA ADAMS	<i>[Signature]</i>	53-96	
1	1	Coq. Engr.	<i>[Signature]</i>	9/19/96	52-96						
1	1	Coq. Mgr.	<i>[Signature]</i>	9/18/96							
		QA									
1	1	Safety	<i>[Signature]</i>	9/21/96	N2-10						
		Ent.									

18. <i>[Signature]</i> 9/19/96 Signature of EDT Originator		19. _____ Authorized Representative Date for Receiving Organization		20. <i>[Signature]</i> <i>[Signature]</i> Design Authority/ Company Manager		21. DATE APPROVAL (if required) EDT No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/commitment <input type="checkbox"/> Disapproved w/commitment	
---	--	--	--	--	--	---	--

303A, 303B, 303E, 303G FIRE ALARM SYSTEM

SM KORSLUND
 WMC, Richland, WA 99352
 U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: ~~608433~~ UC: YN0100000
 Org Code: 8R500 Charge Code: MFNPM
 BSR Code: 900 Total Pages: 16

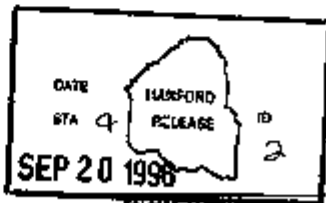
Key Words: RFA, FIRE ALARM

Abstract: Acceptance for test for RFA installation for fire alarm suppression system.

TRADEMARK DISCLAIMER. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

Printed in the United States of America. To obtain copies of this document, contact: WMC/803 Document Control Services, P.O. Box 1970, Mailstop 86-08, Richland WA 99352, Phone (509) 372 2420; Fax (509) 376-0969.

[Signature] 7/20/98
 Release/Approval Date



Approved for Public Release

ACCEPTANCE TEST PROCEDURE

FIRE DETECTION AND SUPPRESSION FOR THE 303A, 303B, 303E, & 303G BUILDINGS

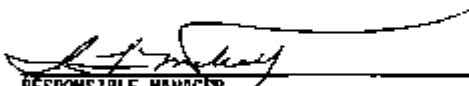
August, 1996

TEST PROCEDURE APPROVAL:



AUTHOR/ORIGINATOR

9/18/96
DATE



RESPONSIBLE MANAGER

9/16/96
DATE



FIRE PROTECTION ENGINEERING

8/21/96
DATE



HANFORD FIRE DEPARTMENT
FIRE MARSHAL

9/19/96
DATE

TEST EXECUTION SHEET

TEST EXECUTION

Installer Date

Recorder/Organization Date

Test Director/Organization Date

TEST WITNESS

Witness/Organization Date

Witness/Organization Date

Witness/Organization Date

Witness/Organization Date

TEST APPROVAL AND ACCEPTANCE

Without
Exception

With
Exception
Resolved

With
Exception
Outstanding

Design Engineer (Author) Date

Fire Systems Maintenance Date
(Owner's Representative)

TS&FPS&R (Fire Protection) Date

Hanford Fire Department Date

(Title or Department) Date

(Title or Department) Date

TABLE OF CONTENTS

Section	Page
TITLE/PROCEDURE APPROVAL	1
EXECUTION AND TEST APPROVAL	2
TABLE OF CONTENTS	3
PURPOSE	4
REFERENCES	4
CHANGE CONTROL	4
PREREQUISITES AND EQUIPMENT REQUIRED	5
FIRE ALARM SYSTEM TEST	7
LAST PAGE	15

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 Fire Protection system functions as required by project criteria.

2 REFERENCES

2.1 Drawings
H-3-70054; H-3-70057; H-3-55896, SHEETS 1-3; H-3-58313, AS MODIFIED BY ECM 614290.

2.2 Specifications
SOC 7.8

2.3 Engineering Change Notices (ECN)
See 2.4

2.4 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 ECM is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

3.0 RESPONSIBILITIES

Each company or organization participating in the conduct of this test will designate personnel to assume the responsibilities of duties as defined herein for their respective roles. The names of these designators shall be provided to the recorder for listing on the recorder's copy of the test execution sheet prior to the performance of any part of this test.

3.1 ENGINEER IN CHARGE

+Designate a test director.

3.2 TEST DIRECTOR

+Coordinate all acceptance testing.

3.3 WITNESSES (Provided by Participating Organizations)

+Witness the tests.

3.4 RECORDER

+Observe tests and record test data.

3.5 INSTALLER

Verify that the system has successfully undergone all necessary pretesting and that the ATP may proceed and be completed in an expeditious manner.

3.6 OCCUPATIONAL SAFETY AND HEALTH

Individuals shall carry out their assigned work in a safe manner to protect themselves and others from hazards and to prevent damage to property and environment.

4 PREREQUISITES AND EQUIPMENT REQUIRED

4.1 Prerequisites

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

- _____ 4.1.1 Systems have been inspected for compliance with construction documents.
- _____ 4.1.2 Reference documents have been verified for correct revision number and outstanding ECMs.
- _____ 4.1.3 Appendix A, Operability Test, for this ATP has been satisfactorily completed and signed by installer and witness.
- _____ 4.1.4 The RFAR panel has been verified operational and placed in service with alarms bypassed.
- _____ 4.1.5 Power is available.
- _____ 4.1.6 Test instruments have a valid calibration stamp attached.

4.2 Equipment and Instruments

Supplied by the Test Operator unless otherwise noted.

4.2.1 Portable Volt-ohmmeters (VOM): Range 0 - 50 volts DC and 0 - 1 megohm.

Instrument No. _____ Expiration Date _____

4.2.2 Portable Ammeter: Range 0 - 10 amperes.

Instrument No. _____ Expiration Date _____

4.3 Abbreviations

ECN - Engineering Change Notice
FACP - Fire Alarm Control Panel
MS - Manual Pull Station
RFAR - Radio Fire Alarm Reporting Box
DP - Smoke Detector
DT - Thermal Detector
PS - Pressure Switch
TS - Tamper Switch
EOL - End of Line Device
FS - Flow Alarm Switch
LT - Low Temperature Switch

5 FIRE ALARM SYSTEM TEST

This ATP will test the Dry Sprinkler System, and interfaces with the RFAR and alarm/supervisory initiating devices.

5.1 Preparation

- _____ 5.1.1 Verify prerequisites of Subsection 4.1 have been met.
- _____ 5.1.2 Request the Hanford Fire Department dispatcher bypass all signals from the RFAR under test and acknowledge all supervisory and alarms received.
- _____ 5.1.3 Announce to personnel in building that a fire alarm test is in progress; evacuation is not required.
- _____ 5.1.4 Install RFAR door tamper switch override device.

5.2 Power Transfer and EMI test: This test will verify automatic transfer to battery upon ac power interruption and restoration upon return to normal. It will also verify the absence of EMI induced failure to transmit RFAR signals on AC power and on DC power backup supplies.

- _____ 5.2.1 Disconnect RFAR power supply connector to interrupt ac power to RFAR.
- _____ 5.2.2 Verify "Comm Trbl RFAR" message received by dispatcher.
- _____ 5.2.3 Reset RFAR.
- _____ 5.2.4 Cause an alarm on Zone 1 of the RFAR, by flowing water.
- _____ 5.2.5 Verify Zone 1 RFAR alarm LEDs come ON.
- _____ 5.2.6 Verify "Zone 1M alarm" message received by dispatcher.
- _____ 5.2.7 Reconnect ac power to RFAR.
- _____ 5.2.8 Verify RFAR ac power LEDs come ON.

Table 5.2.14

RFAR signal rec'd	Signature
RFAR 3652	
RFAR 3658	
RFAR 3574	
RFAR 3578	

5.3 Circuit Supervision: This test will verify RFAR Zone switch position and both gong and input zone wiring are supervised.

5.3.1 RFAR Switch and circuit supervision:

- _____ 5.3.1.1 Request Radio Maintenance switch all RFAR zones to OFF.
- _____ 5.3.1.2 Verify all RFAR zone trouble LEDs come ON.
- _____ 5.3.1.3 Verify "Comm Trouble (RFAR)" message received by dispatcher.
- _____ 5.3.1.4 Request Radio Maintenance switch all RFAR zones ON and reset.
- _____ 5.3.1.5 Verify all RFAR alarm and trouble LEDs are OFF.

DATE SHEET 5-3-1					
STEP	PERFORM/VERIFY	INPUT/AUDIBLE ZONE			
		3652	3658	3574	3578
5.3.1.1	RFAR zones OFF				
5.3.1.2	Trouble LEDs are ON				
5.3.1.3	Trouble message received				
5.3.1.4	RFAR zones ON				
5.3.1.5	Trouble LEDs are OFF				

- 5.3.2 RFAR zone supervision: Record the following steps for the items shown on Data Sheet 5.3.2.
- 5.3.2.1 Disconnect the end of line (E.O.L.) device for zone 1. This may be performed at any point in the circuit if installation wiring methods were verified during the operability test.
- 5.3.2.2 Verify RFAR system and zone/audible circuit trouble LEDs are ON.
- 5.3.2.3 Verify "Common Trouble" message for RFAR received by dispatcher.
- 5.3.2.4 Reconnect the E.O.L. device. Reset RFAR.
- 5.3.2.5 Verify RFAR trouble LEDs are OFF.

DATA SHEET 5.3.2					
STEP	PERFORM/VERIFY	INPUT/AUDIBLE ZONE			
		3662	3658	3574	3578
5.3.2.1	Disconnect E.O.L. device				
5.3.2.2	Trouble LEDs are ON				
5.3.2.3	Trouble message received				
5.3.2.4	Reconnect E.O.L. device				
5.3.2.5	Trouble LEDs are OFF				

- 5.4 Alarm and Supervisory Test: This test will verify the initiation device capability of all alarm and supervisory input devices.
- 5.4.1 Record the following steps for each device shown on Data Sheet 5.4.1.

- 5.4.1.1 Activate the device.
- 5.4.1.2 Verify RFAR Zone alarm/local trouble LED comes on and appropriate message received by dispatcher.
- 5.4.1.3 Reset the initiating device
- 5.4.1.4 Reset RFAR and verify RFAR clear of alarm and trouble.

DATA SHEET 5.4.1 RFAR TEST					
STEP	PERFORM/VERIFY	INPUT DEVICE			
		FS-1	PIV	OSY	LT
5.4.1.1	Activate device				
5.4.1.2	Zone alarm/trouble LED is ON				
5.4.1.2	Message received				
5.4.1.3	Device reset				
5.4.1.4	RFAR reset				

DATA SHEET 5.4.1 RFAR TEST					
STEP	PERFORM/VERIFY	INPUT DEVICE			
		FS-1	PIV	OSY	LT
5.4.1.1	Activate device		N/A		
5.4.1.2	Zone alarm/trouble LED is ON		N/A		
5.4.1.2	Message received		N/A		
5.4.1.3	Device reset		N/A		
5.4.1.4	RFAR reset		N/A		

DATA SHEET 5.4.1 RFAR 1878					
STEP	PERFORM/VERIFY	INPUT DEVICE			
		FS-1	PIV	OSY	LT
5.4.1.1	Activate device		N/A		
5.4.1.2	Zone alarm/trouble LED is ON		N/A		
5.4.1.2	Message received		N/A		
5.4.1.3	Device reset		N/A		
5.4.1.4	RFAR reset		N/A		

DATA SHEET 5.4.1 RFAR 1878					
STEP	PERFORM/VERIFY	INPUT DEVICE			
		FS-1	PIV	OSY	LT
5.4.1.1	Activate device				
5.4.1.2	Zone alarm/trouble LED is ON				
5.4.1.2	Message received				
5.4.1.3	Device reset				
5.4.1.4	RFAR reset				

5.5 Secure From Test:

- _____ 5.5.1 Verify all detection devices have been reset and are in NORMAL condition.
- _____ 5.5.2 Verify RFAR is in NORMAL condition and secured.
- _____ 5.5.3 Request Hanford Fire Department to restore all zones on the RFAR.
- _____ 5.5.4 Verify RFAR is in NORMAL condition and secured.
- _____ 5.5.5 Depress button on front of RFAR Box.
- _____ 5.5.6 Verify three rounds for the RFAR front button received by the dispatcher.
- _____ 5.5.7 Advise the dispatcher that testing is complete.
- _____ 5.5.8 Announce to building personnel that testing is complete.

END OF TEST

APPENDIX A

A. **PURPOSE:** This appendix is provided as a checklist of activities and verifications to be performed by the fire alarm system installer to ensure proper installation and operation. Responsibility for completion of the following items are the responsibility of the installer.

B. **INSTALLER:** Prior to terminating conductors that have been laid or pulled outside of the fire alarm panel, perform and document the following:

- _____ 1. Verify that all conductors other than those intentionally and permanently grounded have been tested for isolation from ground using an insulation testing device.
- _____ 2. Verify that all conductors have been tested for conductor-to-conductor isolation using an insulation testing device.
- _____ 3. Verify that external circuit loop resistance measurements are within the following limits or as manufacturer specifies:
 - a. Maximum 36 ohms for initiating device input circuits.

C. **INSTALLER and INSPECTOR:** After completing the terminations of the system and conductors in accordance with the installation drawings, perform and verify the following:

- _____ 1. Verify that the system is installed and wired in accordance with the installation drawings.
- _____ 2. Inspect each initiating device and alarm output device and verify that the conductors are properly wired.
- _____ 3. Verify that each required end-of-line device is in place.
- _____ 4. With battery installed and normal power supplied, verify that the RFAR is in a **NORMAL** supervisory condition as defined by the manufacturer's manual.
- _____ 5. By lifting leads or end-of-line devices, verify that each supervised zone produces proper trouble indication.
- _____ 6. Verify that each alarm/supervisory initiating device produces proper alarm conditions when activated.

EXCEPTION SHEET

EXCEPTION NUMBER : _____

DATE: _____

Objecting Party Date

Organization Date

EXCEPTION:

PLANNED ACTION:

ACTION TAKEN: _____ DATE: _____

RETEST EXECUTION AND ACCEPTANCE:

_____ and accepted _____ Retest approved _____ accepted as is _____ Exception _____ Other _____
(Need details)(Need details)

Details:

**EXCEPTION SHEET
(Continuation Page)**

Page ____ of ____

EXCEPTION NUMBER : _____

DATE: _____

EXCEPTION (cont):

PLANNED ACTION (cont):

ACTION TAKEN (cont):

DETAILS (cont):