JUN 16 1996 22
Sta. 34

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 615544

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Electrical Engineering/57300	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: L-274	6. Cog. Engr.: JW (Jeff) Whattam	7. Purchase Order No.: N/A
8. Originator Remarks: This EDT transmits for release the acceptance test procedure for the Hanford Site Emergency Alerting System (HSEAS) for the 200 east area sirens (E1-E8) and the Columbia River sirens (S1 & S5).		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: 200 area general/Columbia River
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 6/13/96

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 Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-L274-ATP-001	ALL	0	ATP for HSEAS - 200E (E1-E8), S1, & S5	S, Q	1, 2	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 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved 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	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
						B. Sartorius			E6-65		
1,2	1	Cog.Eng.JW Whattam		6/12/96	E6-27	D.C. Lansing			R2-58	1,2	1
1,2	1	Project Mgr.RR Neel		6/13/96	G3-06	Station 34			G3-11		
1,2	1	QA RK Curry	RK Curry	6/13/96	H7-01	Central Files (orig + 1)			A3-88		
1,2	1	Safety WF Rowe	W.F. Rowe	6/13/96	B1-10	Station 33			S2-53		

18.	19.	20.	21. DOE APPROVAL (if required)
JW Whattam Signature of EDT Originator Date	DC Lansing 6-13-96 Authorized Representative for Receiving Organization Date	RH Palmer 6-13-96 Cognizant Manager Date	Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (04/94) GEF097

BD-7400-172-1

ATP-HANFORD SITE EMERGENCY ALERTING SYSTEM-200E(E1-E8),S1,&S5 SIREN STATIONS, CENTRAL CONTROLLER,&PORTABLE TEST SET

JW Whattam
ICF KH, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 615544 UC: 600
Org Code: 57300 Charge Code: FDEGN
B&R Code: 39EW70300 Total Pages: 21

Key Words: Hanford Site Emergency Alerting System, Siren, Sirens, Alarm, Alarms, Emergency Notification, Emergency Warning, Columbia River Emergency Alerting System, 200 Area

Abstract: This document provides the instruction list for the acceptance test procedure to be performed for these sirens.

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: WHC/BCS Document Control Services, P.O. Box 1970, Mailstop H6-08, Richland WA 99352, Phone (509) 372-2420; Fax (509) 376-4989.

JUN 16 1996
DATE:
STA: 34
HANFORD RELEASE
ID: 22

Chris Willingham 6-17-96
Release Approval Date

Release Stamp

Approved for Public Release

ACCEPTANCE TEST PROCEDURE WHC-SD-L274-ATP-001

TEST TITLE HANFORD SITE EMERGENCY ALERTING SYSTEM -200E (E1-E8), S1, AND S5 SIREN STATIONS, CENTRAL CONTROLLER AND PORTABLE TEST SET

LOCATION 100 AND 200 AREAS

PROJECT NUMBER L274 WORK ORDER

PROJECT TITLE HANFORD SITE EMERGENCY ALERTING SYSTEM

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)

Design Engineer, J. W. Whattam	6/13/96 Date	Project Manager, R R Nearing	6/13/96 Date

Westinghouse Hanford Company (WHC)

Emergency Preparedness DC Lansing	6-13-96 Date	Quality Assurance, RK Curry	6/13/96 Date
Manager, Emergency Preparedness R. H. Palmer	6-13-96 Date	Safety, W. F. Rowe	6-13-96 Date

SES USA, Inc

Vendor Representative, WK Flynn	6/13/96 Date

EXECUTION AND TEST APPROVAL

EXECUTED BY (PRINT, SIGN, & DATE)

Test Director/Organization	Date	Test Operator/Organization	Date
Recorder/Organization	Date		

WITNESSES (PRINT, SIGN, & DATE)

Witness/Organization	Date	Witness/Organization	Date
Witness/Organization	Date	Witness/Organization	Date

A-E APPROVAL (PRINT, SIGN, & DATE)

ICF Kaiser Hanford Company (ICF KH)

Without exceptions ____ With exceptions resolved ____ With exceptions outstanding ____

Design Engineer	Date	Project Manager	Date

TEST APPROVAL AND ACCEPTANCE (PRINT, SIGN, & DATE)

Westinghouse Hanford Company (WHC)

Without exceptions ____ With exceptions resolved ____ With exceptions outstanding ____

Emergency Preparedness	Date	Emergency Preparedness, Manager	Date

TABLE OF CONTENTS

	TITLE/PROCEDURE APPROVAL	1
	EXECUTION AND TEST APPROVAL	2
	TABLE OF CONTENTS	3
1	PURPOSE	4
2	REFERENCES	4
3	RESPONSIBILITIES	4
4	CHANGE CONTROL	7
5	EXECUTION	7
6	EXCEPTIONS	8
7	PREREQUISITES, EQUIPMENT/INSTRUMENTS, ABBREVIATIONS, AND ANNUNCIATORS	9
8	TEST CONDITIONS AND INSTRUCTIONS	10
9	PHYSICAL INSPECTION - SIREN STATIONS	11
10	OPERATIONAL TESTING - SIREN STATIONS	14
11	PHYSICAL INSPECTION - PORTABLE TEST SET PTS-864	17
12	OPERATIONAL TESTING - PORTABLE TEST SET PTS-864	17
13	PHYSICAL INSPECTION - CENTRAL STATION CONTROLLER WDL864PC	18
14	OPERATIONAL TESTING - CENTRAL STATION CONTROLLER WDL864PC	19

1 PURPOSE

This Acceptance Test Procedure has been prepared to demonstrate the Hanford Site Emergency Alerting System functions as required by Specification WHC-S-0454, REV 1 and project criteria.

2 REFERENCES

2.1 DRAWINGS

See specification WHC-S-0454, Rev 1 for reference drawings

2.2 SPECIFICATIONS

WHC-S-0454, Rev 1 Installation Specification For Hanford Site Emergency Alerting System

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 EMERGENCY PREPAREDNESS REPRESENTATIVE

3.2.1 Designates a Test Director.

3.2.2 Coordinates testing with the Area Manager and Affected Building Emergency Directors.

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 supporting 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 Signs Exception Form when exception has been resolved.

3.2.11 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, reverifies 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 Takes necessary action to clear exceptions to the test.

3.3.12 Signs Execution and Test Approval page when test has been performed.

3.3.13 Signs Exception Form when exception has been resolved.

3.3.14 Obtains required signatures on the ATP Master prior to reproduction and distribution.

3.4 WITNESSES (Provided by Participating Organizations)

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

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, as required.

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.

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 A-E DESIGN ENGINEER AND MANAGER

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 may be processed by field "redline" changes to final acceptance test report with approval from test director. If a need for change is discovered in the course of running the test, the test shall be stopped until the test director approves the required changes and gives notice to proceed. 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 Perform test following the steps and requirements of this procedure.

5.3 PRE-ATP TESTING

5.3.1 Prior to final ATP testing, a pre-ATP shall be performed to verify the system has been installed and is functioning properly to allow time to resolve any system problems prior to final ATP. This pre-ATP shall consist of performing all of section 9 and part of section 10 through step 10.1.32. These steps will not require the full complement of witnesses as the final ATP. Instead, these steps need only be performed in the presence of the vendor representative, ICF KH design engineer, and the WHC quality assurance engineer. These steps will be checked off of the data sheet for each siren station tested and will not need to be repeated during final ATP. However, the checked off steps will become part of the final data sheet for each siren station tested.

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).

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, ABBREVIATIONS, AND ANNUNCIATORS

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 Equipment/Instruments identified in Para 7.2 are available to perform the test and have a valid calibration stamp attached, if required by the QA engineer, or have been field calibrated. Test instrument identification numbers

and calibration expiration dates, where required have been recorded in Para 7.2.

7.1.5 Voice communications are available between 200 Area Patrol Operations Center (POC) and local test sites.

7.2 EQUIPMENT/INSTRUMENTS

Supplied by Test Operator unless otherwise noted.

7.2.1 Voltohmmeters (VOM):

Instrument No. _____ Expiration Date _____

Field Calibrated: _____ (QA engineer initials for acceptance)

7.2.2 Noise Dosimeter (Sound Level Meter):

Instrument No. _____ Expiration Date _____

Field Calibrated: _____ (QA engineer initials for acceptance)

7.3 ABBREVIATIONS

ECN Engineering Change Notice

8 TEST CONDITIONS AND INSTRUCTIONS

8.1 Instruction steps shall be performed for each siren station as applicable. Some stations have different number of amplifiers. Only those steps which pertain to the station being tested shall be conducted. The data for these steps shall be recorded on the data sheet to be provided by the test director. Each data sheet shall be numbered sequentially beginning with A1. Those steps not required to be performed for a given station shall be so noted on the data sheet. Each step completed shall be initialed and dated on the data sheet by the recorder. Thus, this ATP shall serve as the master instruction list with a separate data sheet prepared for each individual siren station to be tested.

8.2 An Emergency Preparedness (EP) representative shall initial and date the upper left hand corner of each data sheet indicating that the proper notifications have been completed and it is acceptable to test that station. The EP representative shall indicate on the test data sheet below his/her initials the acceptable dates for testing that station. This date does not have to be a single day but can be a block of days to allow the test director to coordinate scheduling of several sirens on different days.

8.3 For those steps requiring verification of values such as fuse sizes, voltage levels, or battery ratings, the recorder shall record in the appropriate columns on the data sheet, the step number, the item to be tested, the value anticipated, and the value found during testing. The recorder will then initial and date this step.

8.4 After testing has been completed for each siren station, and all of the exceptions have been resolved, the recorder shall initial and date the upper right hand corner of the data sheet for that station indicating testing for that station is concluded.

9 PHYSICAL INSPECTION - SIREN STATIONS

The purpose of the following tests is to confirm that each individual siren station consisting of a silo with housed electronics and elevator, a pole with siren cell head and solar mast are in good working order and installed per design and project criteria before operational testing is initiated.

9.1 SILO ENCLOSURE

9.1.1 Locate key activation switch, insert key, rotate to up position. Engage until cabinet is fully exposed with battery compartment at service level and stopped, then turn key to center position.

9.1.2 With cage raised, open cabinet door, secure latch, rotate red, battery switch to off position. Caution, capacitors may not fully discharge for 15 minutes so do not touch electrical connections. Confirm off position.

9.1.3 Locate AC connection terminal on outside of silo enclosure and verify cover opens and closes without obstruction.

9.1.4 Locate fuse in key activation switch and verify value is 15 ampere.

9.1.5 Confirm silo cap cover insulated.

9.1.6 Confirm enclosure sealed.

9.1.7 Confirm cable clearance by checking wire loop, no crimping or snag or damage to the cable or possible obstructions that may interfere with free movement of cable. Examine all wiring harnesses for chafing. Verify wiring termination for tightness.

9.1.8 Confirm rail on which cabinet rides is secure and all fasteners are tight securing instrument cabinet to assembly.

9.1.9 Locate and confirm leads from AC connection plug to inside cabinet are secure and ground wire stud is connected to earth ground.

9.1.10 Confirm all electrical earth grounding & lightning protection path for control cabinet is correct.

9.1.11 Confirm hydrogen vent is clear to atmosphere.

9.1.12 Check battery leads not damaged. Check terminals are tight (perform "tug test"), confirm all battery terminals are clean and confirm silicone coating is applied to all terminals.

9.1.13 Check batteries for uniform rating and type. All battery ratings must be of the same voltage and ampere rating.

9.1.14 Confirm all wiring connections are firm, no loose connections.

9.1.15 Close battery compartment doors and lower silo until siren control cabinet is at service level.

9.2 SIREN CABINET

9.2.1 Open cabinet case assembly, secure door lock in open position with latch, open internal module panel by removing screws located in front. Confirm & inspect AC outlet, fuse and surge suppression equipment.

9.2.2 Check all drain holes and vent screen and confirm clean.

9.2.3 Pull main fuse disconnect, confirm that fuse rating is per design and prongs have lubrication and are clean, then reinsert disconnect.

9.2.4 Confirm that mounting hardware of all components are secure to cabinet.

9.2.5 Confirm AC service plug/charger fuse is 5 amps.

9.2.6 Check electrical & lightning grounding installed per design.

9.2.7 Observe antenna radio connections and confirm all are secure.

9.2.8 Confirm siren case assembly controller is flush and secure to inside face panel.

9.2.9 Confirm all components and connections are secure.

9.2.10 Turn large red/orange battery switch to ON position.

9.2.11 Close and secure internal cabinet with screws. Lift latch on outer door. Close securely. Check for any tools or possible obstructions. The drive suitable for hand drill elevation is located on dash board. Connect a power drill to chuck and rotate to cause movement up or down to confirm access (or check manual operation using a wrench).

9.2.12 Leave silo up for operational testing or lower and raise later if operational testing is to be performed on a separate shift.

9.3 MONOPOLE

9.3.1 Inspect base nuts & bolts and verify proper torque.

9.3.2 Confirm solar array winch is secure to mounting plate and not damaged.

9.3.3 Inspect solar array cable assembly and verify no damage or obstructions exist.

9.3.4 Inspect solar array trackway and verify no damage or obstructions exist.

9.3.5 Inspect speaker cluster. Confirm that all bolting is tight without gaps between cells and bird screens are in place (this step may be performed prior to erecting pole).

9.4 SOLAR ARRAY

9.4.1 Unlatch any safety chains or lathes for solar mast.

9.4.2 Attach power drill or handcrank to solar winch and lower to ground level.

9.4.3 Confirm all solar cell panels are tight and wired securely.

9.4.4 Using power drill or handcrank, raise solar mast to full upright position. Verify mast seats correctly into supports and attach any safety chains or latches.

10 OPERATIONAL TESTING - SIREN STATIONS

The purpose of this test is to confirm each siren station operates as intended by design criteria.

10.1 SIREN CABINET

10.1.1 Ensure silo is at proper height for local siren controller panel access. Open siren cabinet and secure latch.

10.1.2 Open disconnect connecting solar panels to charging unit and test solar array output voltage by connecting DC volt meter to connection points. Output should read greater than 26 V DC (note weather conditions as sunny or not).

10.1.3 With solar panels still disconnected, verify battery voltage range 24-30 VDC by using a DC volt meter at connection points. Close disconnect to re-establish solar panel connection to charging unit.

10.1.4 Confirm power up LED indicator is lit.

10.1.5 Confirm 30-sec. power down indicator is not lit.

10.1.6 Locate Part.LED. and Full LED for amplifiers on control panel (not the individual LEDs for each amplifier which will be tested later). Verify both are lit.

10.1.7 Remove fuse from first amplifier. Verify 30 amp, fuse installed. Verify Full LED goes out and Part. LED remains lit.

10.1.8 Replace fuse and verify Full LED is lit again.

10.1.9 Repeat steps 10.2.6 through 10.2.8 for second amplifier.

10.1.10 Repeat steps 10.2.6 through 10.2.8 for third amplifier.

10.1.11 Repeat steps 10.2.6 through 10.2.8 for fourth amplifier.

10.1.12 Repeat steps 10.2.6 through 10.2.8 for fifth amplifier.

10.1.13 Repeat steps 10.2.6 through 10.2.8 for sixth amplifier.

10.1.14 Repeat steps 10.2.6 through 10.2.8 for seventh amplifier.

10.1.15 Repeat steps 10.2.6 through 10.2.8 for eighth amplifier.

10.1.16 Repeat steps 10.2.6 through 10.2.8 for ninth amplifier.

10.1.17 Repeat steps 10.2.6 through 10.2.8 for tenth amplifier.

10.1.18 Remove fuses from all the amplifiers and verify both the Part. LED and Full LED go out.

10.1.19 Replace fuses and verify both LEDs are lit.

10.1.20 Locate the individual LED indicators for each individual amplifier. Push the Si-Test button and verify all LEDs are lit. This confirms speaker operation.

10.1.21 Plug MDK set into socket on panel face.

10.1.22 Confirm Timer Set LED on MDK is lit

10.1.23 Press program key on MDK and confirm area code and siren code are displayed on MDK test set.

10.1.24 Unplug MDK set.

10.1.25 Locate indicator LED on solar regulator and verify lit

10.1.26 Turn switch to off position and verify LED is off.

10.1.27 Turn switch back on and verify LED is on.

10.1.28 Open internal cabinet to expose inside wiring. Turn red/orange battery switch to the OFF position.

10.1.29 Remove amplifier fuses.

10.1.30 Remove phoenix type connector from tone generator board (located upper right on top most enclosure).

10.1.31 Connect external speaker to pins TG-1 and TG-2 (use of telephone service technician style monitor set is acceptable).

10.1.32 From portable test set, select SO and G3. Type in siren address for siren being tested and select MSG1 (key number 1) and then shift and send to initiate message.

10.1.33 Listen and verify message output is correct. Repeat step 10.1.30 to verify each message to be tested.

10.1.34 Disconnect speaker, reattach phoenix type connector, reinstall amplifier fuses, turn red/orange battery switch to ON position, close and secure internal panel, and perform SI-TEST using front panel button to verify system has been returned to normal operating condition.

10.1.35 At the Manual Test Controller ESC864: connect microphone, turn sound level knob on ESC864 to full position. Key microphone and announce **"This is a test."** Maintain microphone setup for remainder of testing.

10.1.36 Locate Clipping LED's. Confirm lit during microphone use, and siren activation as flicking on and off.

10.1.37 Starting on left of front panel, there are openings for ten (10) power amplifiers indicators. These will be lit (for those amplifiers used) as sound is projected and is processed. Verify using microphone announcement. Repeat if necessary.

10.1.38 Clear button indicator should be located in case accidental activation should occur. Push at any time throughout this test to quiet siren if necessary.

10.1.39 Place acoustic monitor near silo station and prepare to record decibel level for alarm testing. Record maximum reading during testing using the 'C' weighted scale. If reading rises above 115 dBc, clear alarm at once, note exception and proceed to next alarm test. Place second acoustic monitor at radius of expected siren coverage to record background sound level and individual alarm levels. Confirm monitors are in place before proceeding.

10.1.40 Use microphone to announce **"This is a test of the Hanford Site Emergency Alerting System. Several alarms will sound following this message. No action is required. This is only a test."**

10.1.41 Find WAIL button (not WAIL 5 SEC). Indicator will be lit when activated and will cycle three (3) times before stopping automatically. Engage by pressing button and verify indicator is lit and alarm ceases after approximately three (3) cycles (if alarm fails to cease, engage clear button).

10.1.42 Engage WAIL alarm by pressing button again, then press clear button to stop. It will complete whatever cycle is in operation before stopping. Confirm clear button functions properly.

10.1.43 Repeat steps 10.1.39 for ATK alarm.

10.1.44 Repeat steps 10.1.39 for ALRT alarm.

10.1.45 Repeat steps 10.1.39 for AIRHORN alarm.

10.1.46 Repeat steps 10.1.39 for HI-LO alarm.

10.1.47 Repeat steps 10.1.39 for WHP alarm.

10.1.48 Repeat steps 10.1.39 for WAIL 5 SEC alarm.

10.1.49 Engage Silent-Test button. Indicator will light when activated. Check LED indicators in side of panel for Green LED lit. Confirm system OK.

10.1.50 Plug in generator into AC outlet next to silo activation key and turn on to begin charging.

10.1.51 Locate on front inside panel, ESC-864, AC LED, confirm red color is lit as AC power is on when generator is connected (operating) and charging.

10.1.52 Turn off generator and unplug. Close inlet cover.

10.1.53 Locate DC LED. Confirm yellow color lit when on DC only. It indicates minimum level for proper operation.

10.1.54 Lift latch on outer door and close securely. Look around for any tools or test meters and remove from enclosure. Activate silo key by turning to down position. Verify cap seats properly. Return system to standby operation, remove key and close key cover.

10.1.55 Confirm that silo is closed and solar panel mechanism is secure and in place.

11 PHYSICAL INSPECTION - PORTABLE TEST SET PTS-864

The purpose of the following tests are to insure that the portable test set, PTS-864, is in good working order prior to operational testing. NOTE: Operator must keep test set away from siren speaker cells as needed to avoid feedback.

11.1 PTS-864 PORTABLE TEST SET

11.1.1 Confirm suitcase is not damaged, open latch locks, and raise antenna.

12 OPERATIONAL TESTING - PORTABLE TEST SET PTS-864

The purpose of the following tests are to confirm the PTS-864 Portable Test Set operates as intended by the design criteria. (This test may be run as a general all call test if enough spotters are available for each station to be tested.)

12.1 PORTABLE TEST SET PTS-864

12.1.1 Verify siren spotters are in location with at least one spotter at siren station to be tested. Push on/off switch to on and confirm display for status. It should show date and time. Verify SYS and TIME LED are lit.

12.1.2 Depress SYS push button. Depress SO push button. Verify SO LED is on.

12.1.3 Depress GO push button and verify LED is on.

12.1.4 Enter siren station address (or all call address for those stations to be tested simultaneously) on hex keypad. Press PA button (#4) on hex keypad. Press SHIFT and SEND buttons. Key microphone and announce **"This is a test of the Hanford Site Emergency Alerting System. An alarm will sound following this message. No action is required. This is only a test."**

12.1.5 Press CLR button to reset buffer.

12.1.6 Enter siren station address (or all call address for those stations to be tested simultaneously) on hex keypad. Press WAIL button. Press SHIFT and SEND buttons. Alarm should sound at all three siren stations. Verify with siren spotters. After three cycles, alarm should complete. If it continues, press CLEAR then SHIFT then SEND.

12.1.7 Press CLR button to reset buffer.

12.1.8 Turn off test set by pressing activation button again, put down antenna, check for any obstructions and close lid of suitcase securely with lock latches.

13 PHYSICAL INSPECTION - CENTRAL STATION CONTROLLER WDL864PC

The purpose of the following tests are to confirm the Central Station WDL864PC Controller is in good working order prior to initiating operational testing.

13.1 CENTRAL STATION CONTROLLER WDL864PC

13.1.1 Confirm all components, radio, UPS, computer, printer are wired and cabled together on cart.

13.1.2 Turn on all components and verify indicator power lights are on.

13.1.3 Confirm that no disks are in floppy drive.

14 OPERATIONAL TESTING - CENTRAL STATION CONTROLLER WDL864PC

The purpose of the following test is to confirm the Central Station Controller WDL864PC operates as intended by design criteria. (This test may be run as a general all call test if enough spotters are available for each station to be tested.)

14.1 CENTRAL STATION CONTROLLER WDL864PC

14.1.1 Verify siren spotters are in location with at least one spotter at each siren station to be tested.

14.1.2 If screen is at call key menu, exit all screens until back at main menu screen.

14.1.3 Select WARNING from menu and then press ENTER. Select PUBLIC ADDR and then press ENTER. Type in siren station address (or all call address for those stations to be tested simultaneously) and press ENTER. Select SEND and then press ENTER. Type in password and press ENTER. Key microphone and announce **"This is a test of the Hanford Site Emergency Alerting System. An alarm will sound following this message. No action is required. This is only a test."** After announcement verify voice was heard by field spotters.

14.1.4 Follow 14.1.3 and select CLEAR instead of PUBLIC ADDR to make certain Public Address is off.

14.1.5 Select WARNING from menu and then press ENTER. Select WAIL and press ENTER. Type in siren station address (or all call address for those stations to be tested simultaneously) and ENTER. Select SEND then press ENTER. Enter password and press ENTER. Verify screen indicates command sent.

14.1.6 Check with field spotters to verify alarm is sounding.

14.1.7 Verify action is logged on screen.

14.1.8 After confirming alarm is sounding, repeat 14.1.5 and select CLEAR to discontinue sound if still sounding. Confirm with field spotters that sound has been cleared.

14.1.9 From main menu, select STATUS then press ENTER. Select call key menu. Select test icon (this will run a silent test on all sirens - making sure entire grid is functioning properly). Select SEND then press ENTER. Verify Silent test is run and logged on screen.

14.1.10 Confirm all actions have been cleared by activating clear command once again as in step 14.1.8. Repeat 14.1.3 and 14.1.4 and announce "**This concludes this test of the Hanford Site Emergency Alerting System. Regard all future alarms as real. This concludes this test.**" Return to main menu. Call in field spotters. This concludes testing.