8/24 **SEP 09 1997** **ENGINEERING DATA TRANSMITTAL** Page 1 of 1
 1. EDT **Nº 612282**

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5. Proj./Prog./Dept./Div.: PLC/PSP/FDWN		6. Design Authority/ Design Agent/Cog. Engr.: L. B. Weidner	7. Purchase Order No.: N/A
8. Originator Remarks: SOUND TEST FOR L-274 PHASE III <i>9/8/97</i>			9. Equip./Component No.: N/A
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			12. Major Asm. Dwg. No.: N/A
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(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	HNF-SD-TRP-PRP-001 <i>gm</i>	-	0	Hanford Site Emergency Alerting System Siren Testing Report	<i>E</i> <i>gm</i>	2	1	<i>gm</i>

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				3	6	Central Files			A3-88 <i>gm</i>
		Design Agent				3	6	JW Whattam			G3-12
2	1	Cog.Eng. LB Weidner	<i>LB Weidner</i>	9/15/97	27	3	4	DC Lansing		9/8/97	R2-58
2	1	Cog. Mgr. RR Nearing	<i>RR Nearing</i>	9/8/97	58	3	6	PG Leroy		9/8/97	R3-15
		QA				3	—	Proj. Files			G3-11
		Safety									
		Env.									

18. L. B. Weidner <i>LB Weidner</i> 9/15/97 Signature of EDT Date Originator	19. _____ Authorized Representative Date for Receiving Organization	20. R. R. Nearing <i>RR Nearing</i> 9/8/97 Design Authority/ Cognizant Manager	21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved <i>N/A</i> ☐ Approved w/comments ☐ Disapproved w/comments
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Hanford Site Emergency Alerting System Siren Testing Report

Lori B. Weidner

Fluor Daniel Northwest, Inc., Richland, WA 99352

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Abstract: The purpose of the test was to determine the effective coverage of the proposed upgrades to the existing Hanford Site Emergency Alerting System (HSEAS). The upgrades are to enhance the existing HSEAS along the Columbia River from the Vernita Bridge to the White Bluffs Boat Launch as well as install a new alerting system in the 400 Area on the Hanford Site. Five siren sites along the Columbia River and two sites in the 400 Area were tested to determine the site locations that will provide the desired coverage.

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[Signature]
Release Approval

SEP 09 1997
Date

Release Stamp

Approved for Public Release

Hanford Site Emergency Alerting System

Siren Testing Report

July 1997

Prepared By:

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7/31/97

Lori B. Weidner, Design Engineer, Fluor Daniel Northwest, Inc.

Date

Approved By:

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7/31/97

Roy R. Nearing, Project Manager, Fluor Daniel Northwest, Inc.

Date

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8-13-97

D. Craig Lansing, Emergency Preparedness, DynCorp Tri-Cities Services

Date

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**Hanford Site Emergency Alerting System
July 1997****Siren Testing Report
Page 1****1.0 Introduction**

The purpose of the test was to determine the effective coverage of the proposed upgrades to the existing Hanford Site Emergency Alerting System (HSEAS). The upgrades are to enhance the existing HSEAS along the Columbia River from the Vernita Bridge to the White Bluffs Boat Launch as well as install a new alerting system in the 400 Area on the Hanford Site. Five siren sites along the Columbia river and two sites in the 400 Area were tested to determine the site locations that will provide the desired coverage.

2.0 Test Methods

The tests were conducted on July 17 and 18, 1997 using a mobile siren that was set up at sites S6, S7, S8, S9, S10, F1, and F2 as shown on the maps in Appendix A. The mobile siren was equipped with a variable cell siren system which was raised to 30 feet for the test. Evacuation tones and voice messages were broadcast at each siren site and monitored with sound level meters both on land and on the river. A copy of the test procedure is in Appendix B.

The mobile siren unit was set at six cells for the majority of the tests. The six cell unit was designed for an alerting radius of 0.5 mile, however, sound level monitoring was performed at both 0.5 mile and 1 mile at most test locations to evaluate the attenuation effects of the area topography.

A Siren Test Data Sheet was completed by the sound monitors for each test, and the completed Data Sheets are included in Appendix C. The location of each monitor is shown on the maps in Appendix A.

3.0 Test Results

At the test locations along the Columbia River, the siren evacuation tone and voice message were heard well on land at distances of 0.5 mile to 1 mile from the mobile siren. At most test points on land, the difference between the background noise level and the voice and tone test levels was in the range of 10 to 20 dBc.

However, for the test points on the Columbia River, the difference in sound level between background and tone/voice was not as large. This was due in part to the high background noise of the river and boat motor as well as the echo effects of the siren sound waves crossing the river and reflecting off

**Hanford Site Emergency Alerting System
July 1997****Siren Testing Report
Page 2**

the cliffs on the opposite bank. The background noise level with the boat motor running was over 100 dBc, which was higher than the evacuation tone level at any of the river monitoring locations. The background noise level with the boat motor idling was less, in the range of 80 to 97 dBc. However, the difference between background and tone/voice with the motor idling was still less than 10 dBc during most tests. Only when the boat motor was turned off did the difference between background and tone/voice average more than 10 dBc.

For the tests in the 400 Area, the 6-cell siren tone and voice tests could be heard from all monitoring locations. This was to be expected since the 400 Area is approximately one square mile in area, and the 6-cell siren is designed to cover a 0.56 mile alerting radius.

A summary of the information on the completed Siren Test Data Sheets is shown on the table in Appendix D.

4.0 Data Analysis and Recommendations

The sound level at the monitoring locations on land was within the acceptable range of 10 dBc above background for most of the test sites along the Columbia River. Within a 0.5 mile radius of a six cell siren, a person on land should be able to hear the alerting tone and voice notifications.

However, the results of the siren testing on the river were not as good as those on land. The siren tone and voice sound levels were below the background noise level with the boat motor running. With the boat motor idling, the tone and voice levels were above the background noise level, but only by an average of 3 dBc. Only at a river monitoring location 0.3 mile from the mobile siren did the tone sound level reach more than 10 dBc above the background noise with the boat motor idling.

When the boat motor was off, the average tone minus background sound level was 13 dBc which is within the acceptable range of 10 dBc above background noise level.

There were locations on the river where the alerting tone and voice messages were not heard well even with the boat motor off. One area of particular concern is at the northern point of the Columbia River north of siren location S9. This area has poor coverage from the existing sirens, so this

**Hanford Site Emergency Alerting System
July 1997****Siren Testing Report
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site is of particular importance. Test data at locations on the river 0.5 mile and 1.2 mile from the mobile siren shows that the six cell siren did not produce sound above the desired range of 10 dBc above background for voice and tone tests. Also, the voice message was not understandable at these monitoring locations. It is recommended that a ten cell omnidirectional siren be placed at this siren location rather than a six cell siren. Additionally, a directional speaker may be required to direct the sound toward the cove at test point A2, however, the need for the directional speaker cannot be determined until the omnidirectional siren is installed and further sound testing is performed.

Two locations were tested in the 400 Area, and these siren locations were monitored at four locations each. Siren tests were performed at site F1 in the 400 Area with both six and nine cell sirens. At monitoring points B1 and C1, there was a 1 dBc or less difference between the six and nine cell tone tests. At monitoring point A1, there was a difference of 7 dBc between the six and nine cell tests, however, this location will be covered by siren F2. Data for monitoring point D1 is discounted because it is inconsistent with the other data. Siren tests were performed at site F2 using only a six cell siren. Tone minus background sound levels were satisfactory at all siren F2 monitoring points.

It is recommended that two sirens be installed in the 400 Area for redundancy and to compensate for sound attenuation caused by multiple large structures. Test data shows that two six cell omnidirectional sirens will provide an adequate alerting system in the 400 Area.

5.0 Conclusion

The data from the siren tests performed shows that a six cell omnidirectional siren installed at test locations S6, S7, S8, and S10 and a ten cell omnidirectional siren at location S9 will provide most of the needed additional alerting capability to fill in the gaps in the existing HSEAS along the Columbia River. An omnidirectional six cell siren installed at locations F1 and F2 will provide an adequate alerting system for the 400 Area personnel. Additionally, one directional speaker may need to be installed at siren location S9 at the north point of the Columbia River pending further sound testing after installation of an omnidirectional siren in that location.

On an administrative note, it is recommended that the siren system along the Columbia River be programmed so that it alerts several times over a twenty to thirty minute time period. This would allow a boater time to reach a destination, turn off or idle the boat motor, and hear one of the alerting tones and/or voice messages thus increasing the chance of the alerting system warning all boaters on the river.

These recommendations are based on the existing background noise levels on the date of testing. Background noise levels are subject to change in the future.

6.0 List of Appendices

Appendix A	Siren Test and Monitor Locations
Appendix B	Test Procedure
Appendix C	Siren Test Data Sheets
Appendix D	Summary of Siren Test Data

APPENDIX A

SIREN TEST AND MONITOR LOCATIONS

R1=900m=0.56mile
R2=1800m=1.12mile

- EXISTING SIREN
- PROPOSED SIREN
- ▲ MONITOR LOCATION

A-1

HM-SD-PRP-TRP-001, Rev. 0

APPENDIX B

TEST PROCEDURE

**Test Procedure for the
Hanford Site Emergency Alerting System, 100 & 400 Areas
Thursday, July 17, 1997 & Friday, July 18, 1997**

1.0 100 Area

1.1 Introduction

The purpose of this test is to determine the effective coverage along the Columbia River of the proposed upgrades to the existing Hanford Site Emergency Alerting System (HSEAS). Five existing sirens are in place for emergency alerting along the Columbia River between the Vernita Bridge and the White Bluffs Boat Launch area. Approximately six additional siren locations will be tested to ensure the desired coverage.

This test will be conducted using a mobile siren that will be set up at sites S6, S7, S8, S9, S10, and S11 as shown on the attached maps. This mobile siren is equipped with a siren system that can be raised to 30 feet for the test. Evacuation tones and voice messages will be broadcast at each siren site and monitored with sound level meters.

1.2 Initial Instructions

All monitoring personnel and boat operators will meet at the White Bluffs Boat Launch on Thursday, July 17, 1997 at 8:00 a.m. A pre-test safety meeting will be conducted for all personnel to include boat safety procedures for the boat monitor. Any necessary verbal instructions in addition to this written procedure will be given at that time.

The test director shall have the authority to make any changes, verbal or otherwise, necessary to complete testing. Such verbal changes will be subsequently written as an attachment to this document.

Personnel involved shall take any safety precautions they deem necessary to their individual well being such as sunscreen, warm clothing, etc, as these items will not be provided. Also, as testing will be conducted throughout the day, all personnel shall bring adequate amounts of food and water for their own consumption.

**Test Procedure for the
Hanford Site Emergency Alerting System, 100 & 400 Areas
Thursday, July 17, 1997 & Friday, July 18, 1997**

Each monitor will provide their own transportation as each will be positioned at different locations throughout the day. At the conclusion of the day's testing, all personnel involved shall meet back at the boat launch for a post-job meeting.

1.3 Equipment

Test equipment will consist of the following:

1. Mobile siren unit (supplied by vendor).
2. Four sound level meters (two supplied by FDNW and two supplied by vendor) meeting IEC651 Type 2 standards at a minimum and capable of measuring sound pressure levels using the "C" weighted scale.
3. Five two-way radios or other means of communications (supplied by DynCorp).
4. Boat (supplied by PNNL).

1.4 Test Instructions

A series of two tests will be conducted at each designated siren site (S6, S7, S8, S9, S10, and S11). Each test will consist of a voice message broadcast followed by an evacuation tone.

For each test, monitors will be set up at various locations to be decided upon by the test director on the day of the tests. Not all monitors will be required for each test.

Two-way radios will be provided to each monitor, the siren operator, and the test director. Once each monitor is at the appropriate location and has checked in via radio with the test director, the test will proceed with an initial voice announcement followed by the evacuation tone.

1.5 Test Director Instruction

The test director shall have the sole authority to conduct all testing activities. The test director shall conduct the pre-job planning and safety meeting and make certain all participants are fully aware of their area(s) of responsibility.

**Test Procedure for the
Hanford Site Emergency Alerting System, 100 & 400 Areas
Thursday, July 17, 1997 & Friday, July 18, 1997**

The test director shall verify that each test monitor is in location prior to initiating testing for a particular site. When all monitors are in position and ready for testing, the test director shall provide direction to the siren operator to begin testing. The test director for this testing period is Jeff Whattam.

1.6 Siren Operator Instructions

The siren operator will be responsible for setting up the siren system at each test site.

Once all monitors have checked in, the test director shall announce via the radios that he is ready to proceed. Then, the siren operator shall initiate the following voice message on the siren testing system: "This is a test of the Hanford Site Emergency Alerting System. An evacuation alarm will be sounded immediately following this message. This alarm will sound for approximately one minute. No action is required. This is only a test."

Upon completion of this message, the operator will initiate the evacuation tone for one minute. This will complete this test. This procedure will be followed for each of the two tests at each of the six designated siren test sites.

1.7 Monitor Instructions

Prior to each test, the monitor shall proceed to the designated location for that test, then check in via radio with the test director.

Each monitor will be responsible for recording the information asked for on the Test Data Sheet. The siren operator will provide the monitors with temperature and wind velocity/direction data prior to each test. Sound level information to be included on the Test Data Sheet includes background noise dB levels, voice dB levels, and tone dB levels as measured using the "C" weighted scale (dBc). The voice minus background and tone minus background levels shall be calculated and recorded in the appropriate spaces. Other information such as location, sound level indicator data, test series number, and general comments shall be noted in the appropriate locations on

**Test Procedure for the
Hanford Site Emergency Alerting System, 100 & 400 Areas
Thursday, July 17, 1997 & Friday, July 18, 1997**

the form. The Test Data Sheets shall be given to the test director at the post-test meeting at the end of the day.

1.8 Boat Operator Instructions

The boat operator shall be responsible for conducting a pre-job safety meeting on boat procedures. The boat operator shall be responsible for navigating to the appropriate location on the river designated for each test. The boat operator will also be responsible for supplying enough fuel for the entire day's operation as well as ensuring that the boat is in good working condition and that there is the appropriate safety equipment (personal floatation devices for each passenger) on board.

2.0 400 Area

2.1 Introduction

The testing for the 400 Area will be conducted on Thursday, July 17 if time allows after the Columbia River testing is completed. If time does not allow, testing will be performed on Friday, July 18. The time and meeting point for this test will be discussed during the post-job meeting at the White Bluffs boat launch.

2.2 Testing and Monitoring Locations

Attached is a map of the 400 Area's siren test sites, and each of the siren test locations is labeled with a letter and number (F1, F2, F3, and F4). The monitor sites will be selected by the test director on the day of testing.

2.3 Testing Procedures/Information

The procedure for the 400 Area testing remains the same as the Columbia River testing procedure, except that a boat will not be required. A check-in of all monitors via radio will be requested by the test director prior to each test, then a voice message will be broadcast and the evacuation tone will be activated. The data sheets will be filled out by each monitor during each test

**Test Procedure for the
Hanford Site Emergency Alerting System, 100 & 400 Areas
Thursday, July 17, 1997 & Friday, July 18, 1997**

and given to the test director at the end of all tests. Further instructions may be given on the day of the tests.

3.0 Vertical Testing

At the direction of the test director, a series of tests will be conducted to measure the sound of an existing WPS-2800-10 siren at 0', 20', 40', 60', 80', 100', and 200'. The test will be conducted at a time and location approved by the test director. This information will be provided to the test participants involved in the vertical testing during the pre-job meeting.

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: _____ Date: _____

Test Technician: _____

Sound Level Indicator

Manufacturer: _____ Model/Type: _____

ID Number: _____ Digital/Analog: _____

Calibration Date: _____ Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: _____ Wind Velocity/Direction: _____

Test Series Number: _____ Background Noise Level: _____ dBc

Voice Level: _____ dBc Tone Level: _____ dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? _____

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc:

Comments:

Hanford Site Emergency Alerting System Siren Test Data Sheet - Vertical Testing

Area: _____ Date: _____

Test Technician: _____

Sound Level Indicator

Manufacturer: _____ Model/Type: _____

ID Number: _____ Digital/Analog: _____

Calibration Date: _____ Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: _____ Wind Velocity/Direction: _____

Test Series Number: _____ Background Noise Level: _____ dBc

Voice Level: _____ dBc Tone Level: _____ dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? _____

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc:

Distance	Voice (dBc)	Tone (dBc)		Distance	Voice (dBc)	Tone (dBc)
0'				80'		
20'				100'		
40'				200'		
60'

IVER

B-10

ROUTE 6

100B
AREA

100B
AREA

COLUMBIA RIVER

0.15 MILE

S7

0.56 MILE

ENVIROCON
DIRT ROAD

APPENDIX C

SIREN TEST DATA SHEETS

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: SG-A21 Date: 7/17/97

Test Technician: Ray NEARBY

Sound Level Indicator

Manufacturer: LIEI Model/Type: DSM100

ID Number: 94020925 Digital/Analog: _____

Calibration Date: 7/17/97 Expiration Date: ✓

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Boat 100 Temperature: 93 Wind Velocity/Direction: 6-10

Test Series Number: _____ Background Noise Level: 97 dBc

Voice Level: _____ dBc Tone Level: 97 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? _____

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

1/2 mile^{down} from Siren

Comments:

6 cell

Boat off: Background 75

Boat off: 90dB Background 75

TONE 88

TONE 96

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: S6- ~~A~~ 2 Date: 7/17/87

Test Technician: Ray D. Perry

Sound Level Indicator

Manufacturer: LEI Model/Type: DSM100

ID Number: 94020925 Digital/Analog: _____

Calibration Date: 2/17/97 Expiration Date: 7

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 93 Wind Velocity/Direction: 6-10 N

Test Series Number: _____ Background Noise Level: 95 dBC

Voice Level: 107 dBc Tone Level: 100 dBc

Voice - Background: 98 dBc Tone - Background: 95 dBc

Was Voice Message Understandable? *No*

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

1 mile from Sine - of river

Comments:

Boat off KKRRAND - 90
6 Ball TONE 97

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: SG-A3 Date: 1/17/97

Test Technician: Reg NRAMING

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100

ID Number: 941020 925 Digital Analog: _____

Calibration Date: 1/17/97 Expiration Date: -

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 93 Wind Velocity/Direction: 6-10 W.

Test Series Number: _____ Background Noise Level: 88 dBc

Voice Level: None dBc Tone Level: 95 dBc

Voice - Background: 88 dBc Tone - Background: 88 dBc

Was Voice Message Understandable? No

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

1/3 mile from S. RAV

Comments:

beat off
6 ORU

background 90
tone 97

Hanford Site Emergency Alerting System
Siren Test Data Sheet

Area: S6-B1 / 100 Area Date: 7/17/97
Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM 100
ID Number: _____ Digital/Analog: Digital
Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

1/2 mile E of siren

Temperature: 93°F Wind Velocity/Direction: 6-10mph NW

Test Series Number: S6-B1 Background Noise Level: 90 dBc

Voice Level: 93 dBc Tone Level: 99 dBc

Voice - Background: 3 dBc Tone - Background: 9 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

Wind causing high background level.

**Hanford Site Emergency Alerting System
Siren Test Data Sheet**

Area: S6-B2 / 100 Area Date: 7/17/97
Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: WEI Model/Type: DSM100
ID Number: _____ Digital/Analog: Digital
Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

1 mile E of Suen.

Temperature: 93°F Wind Velocity/Direction: 6-8mph WNW

Test Series Number: S6-B2 Background Noise Level: 87 dBc

Voice Level: 97-100 dBc Tone Level: 96-98 dBc

Voice - Background: 10-13 dBc Tone - Background: 9-11 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

Wind caused high background noise level.

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: SF-A1 Date: 7/14/97

Test Technician: Ron Mearns

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM 100

ID Number: 94020925 Digital/Analog: _____

Calibration Date: 7/17/97 Expiration Date: -

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 94 Wind Velocity/Direction: 10 W. gusting

Test Series Number: _____ Background Noise Level: 80 dBc

Boat Idle Voice Level: 80 dBc Tone Level: 85 dBc

Voice - Background: 80 dBc Tone - Background: 80 dBc

Was Voice Message Understandable? NO

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

1/2 mile from S. RER

Comments: Boat off BACKGROUND 87
TONE 83
VOICE

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: S7-A2 Date: 7/17/97

Test Technician: Roy Neff

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100
 ID Number: 94020925 (Digital/Analog:)
 Calibration Date: 7/17/97 Expiration Date:

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 93 Wind Velocity/Direction: Calm

Test Series Number: Background Noise Level: 81 dBS dBc

BOAT 12th Voice Level: 86 dBS dBc Tone Level: dBc

Voice - Background: 80 dBS dBc Tone - Background: 84 dBS dBc

Was Voice Message Understandable? YES - BARELY

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc.):

1. mile AWAY FROM SIREN

REMARKS
COULD NOT HEAR IN
CURRENT SO ONLY
GOT WHEN ENG.
OFF.

Comments:

BOAT OFF BACKGROUND 80

TONE 84

VOICE 86

Hanford Site Emergency Alerting System
Siren Test Data Sheet

Area: S7-B1 / 100 B/C Date: 7/17/97
Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM 100
ID Number: _____ Digital/Analog: Digital
Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

1/2 mile west of siren along road

Temperature: 93°F Wind Velocity/Direction: calm

Test Series Number: S7-B1 Background Noise Level: 72 dBc

Voice Level: 85 dBc Tone Level: 86 dBc

Voice - Background: 13 dBc Tone - Background: 14 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

none - very flat terrain

Comments:

Hanford Site Emergency Alerting System
Siren Test Data Sheet

Area: S7-B2 Date: 7/17/97
Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM 100
ID Number: _____ Digital/Analog: Digital
Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Near B/C Plant closed landfill. 1 mile W of siren.

Temperature: 94° Wind Velocity/Direction: W 10 mph

Test Series Number: S7-B2 Background Noise Level: 89 dBc

Voice Level: 97 dBc Tone Level: 97 dBc

Voice - Background: 8 dBc Tone - Background: 8 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

none

Comments:

Wind caused high background level.

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: SB- A# Date: 7/17/97

Test Technician: Roy Neatney

Sound Level Indicator

Manufacturer: LIE 1 Model/Type: DSM100

ID Number: 94020925 Digital/Analog: _____

Calibration Date: 7/17/97 Expiration Date: —

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 80 Wind Velocity/Direction: 3 NW

Test Series Number: _____ Background Noise Level: 88.83 dBc

BOAT 1000 Voice Level: 95.86 dBc Tone Level: 95 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? YES

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

1/2 mile from SIREN

Comments:

BOAT off BACKGROUND 70
TONE 94

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: SB-A2 Date: 7/17/97

Test Technician: Roy M. Karpow

Sound Level Indicator

Manufacturer: LIET Model/Type: OSM 100
 ID Number: 94020925 Digital/Analog: _____
 Calibration Date: 7/17/97 Expiration Date: -

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 89 Wind Velocity/Direction: 3 NW

Test Series Number: _____ Background Noise Level: 86 dBc

Boat 100 Voice Level: 89 dBc Tone Level: 89 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? no

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

8 miles from Siren

Comments:

Boat off background 75

Temp. 89 WIND - CALM

TONE 88.5 90

**Hanford Site Emergency Alerting System
Siren Test Data Sheet**

Area: S8-B1 / 100N Date: 7/17/97
Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM 100
ID Number: _____ Digital/Analog: Digital
Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

1/2 mile along dirt road to NE (along river).

Temperature: 90°F Wind Velocity/Direction: 3mph NW

Test Series Number: S8-B1 Background Noise Level: 77 dBc

Voice Level: 88 dBc Tone Level: 92 dBc

Voice - Background: 11 dBc Tone - Background: 15 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Very hilly terrain & close to river.

Comments:

Hanford Site Emergency Alerting System
Siren Test Data Sheet

Area: S8-B2 / 100N Date: 7/17/97
Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100
ID Number: _____ Digital/Analog: Digital
Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

~ 1 mile along road running NE from site.

Temperature: 90°F Wind Velocity/Direction: 8mph NW

Test Series Number: S8-B2 Background Noise Level: 73 dBc

Voice Level: 92 dBc Tone Level: 91 dBc

Voice - Background: 19 dBc Tone - Background: 18 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Very hilly terrain. Wind is causing high

background reading.

Comments:

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: AI? AI S9 Date: 7/12/97

Test Technician: Roy NEARING

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM 100

ID Number: 94020925 Digital/Analog: _____

Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 95 Wind Velocity/Direction: 0 - NO WIND

Test Series Number: _____ Background Noise Level: 78 dBc

Voice Level: 83 dBc Tone Level: 88 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? GARBLED

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

77 miles away from Sinking

Back w/ 101AC
back 80db

Tone 84

- OFF BOAT
back
Tone 78 90

**Hanford Site Emergency Alerting System
Siren Test Data Sheet**

Area: S9-AZ Date: 11/17/97

Test Technician: Roy Newmy

Sound Level Indicator

Manufacturer: EET Model/Type: DSM 100

ID Number: 94020925 Digital Analog: _____

Calibration Date: 7/17/97 Expiration Date: —

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 9C Wind Velocity/Direction: Ø

Test Series Number: _____ Background Noise Level: 81 dBc

Voice Level: 81 dBc Tone Level: 81 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? NO

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc.):

Comments:

~~NO USING NINE CELL~~
~~AND ALL RIVER TESTING~~
BACKGROUND 64
TONE 76

RECOMMEND OTHER'S
SHOULD USE A DIRECTIONAL
HORN!

Boat off Background 65-66
Tone 60

* USING NINE CELL SIREN
Boat off Background 64
PA 66
Siren 73

Hanford Site Emergency Alerting System
Siren Test Data Sheet

Area: 59-B1/100 Area Date: 7/17/97
 Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100

ID Number: _____ Digital/Analog: Digital

Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):
SW of Siren

Temperature: 95°F Wind Velocity/Direction: 4 mph NNE
 Test Series Number: 59-B1 Background Noise Level: 59 dBC

Voice Level: 72 dBC Tone Level: 78 dBC

Voice - Background: 13 dBC Tone - Background: 19 dBC

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

1/2 mile from Siren

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: S9-B2 / 100 Area Date: 7/17/97
 Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100
 ID Number: _____ Digital/Analog: Digital
 Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

WSW of siren. Near dead tree on dirt road.

Temperature: 92°F Wind Velocity/Direction: WNW 2mph

Test Series Number: S9-B2 Background Noise Level: 61 dBc

Voice Level: 72 dBc Tone Level: 80 dBc

Voice - Background: 11 dBc Tone - Background: 19 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Small hills.

Comments:

9 cell: voice 78 $\Delta V = 17 \text{ dBc}$
 tone 86 $\Delta t = 25 \text{ dBc}$

S9 C 1

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: C1 old rd to river Rd ^{next to river} Date: 7-17-97
 Test Technician: Rob Duman 'C'

Sound Level Indicator

Manufacturer: Simpson Model/Type: 886-2
 ID Number: # 3 Digital/Analog: Ana
 Calibration Date: 7-17-97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: _____ Wind Velocity/Direction: _____
 Test Series Number: 1 Background Noise Level: 52 dBc
 Voice Level: 62-65 dBc Tone Level: 72 dBc
 Voice - Background: 55 dBc Tone - Background: 55-60 dBc
 Was Voice Message Understandable? clean

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

59 C2

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: C2 next to River E. of plant H Date: 7-17-97
 Test Technician: Rob Durham 'C'

Sound Level Indicator

Manufacturer: SIMPSON Model/Type: 88G-2
 ID Number: H3 Digital/Analog: Analog
 Calibration Date: 2-17-97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 93°F (2) Wind Velocity/Direction: 2 WNW 2 mph
 Test Series Number: 2 Background Noise Level: 60-65 dBc
 Voice Level: 65 dBc Tone Level: 70 dBc
 Voice - Background: 68 dBc Tone - Background: 68 dBc
 Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

WIND gust small amount of River noise
 Echo was as loud

(9 cell)

Amb 65 PA 66 Tone 73

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: SQ-D-1 ~~SQ-D-1~~ Date: July 17, 1997
 Test Technician: Alan L Madachian

Sound Level Indicator

Manufacturer: Simpson Model/Type: 886
 ID Number: _____ Digital/Analog: Analog
 Calibration Date: _____ Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.): None - 10 miles from H-100

Temperature: 95°F Wind Velocity/Direction: ~10-14 MPH NE

Test Series Number: 1 Background Noise Level: +50 dBc

Voice Level: +60 dBc Tone Level: 65-68 dBc

Voice - Background: +50 dBc Tone - Background: +50 dBc

Was Voice Message Understandable? Yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

Line of site

**Hanford Site Emergency Alerting System
Siren Test Data Sheet**

Area: S9-D2 Date: July 17, 1997Test Technician: Alan L MacLachlanSound Level IndicatorManufacturer: Simpson Model/Type: 886ID Number: _____ Digital/Analog: AnalogCalibration Date: July 17, 1997 Expiration Date: _____Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 92-93 Wind Velocity/Direction: 0 WNW-2Test Series Number: 2 Background Noise Level: 55 dBcVoice Level: 55-60 dBc Tone Level: 65-68 dBcVoice - Background: 50 dBc Tone - Background: 50-55 dBcWas Voice Message Understandable? Yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

**Hanford Site Emergency Alerting System
Siren Test Data Sheet**

Area: SQ-~~D3~~ D2 Date: July 17, 1997
Test Technician: Alan MacLachlan

Sound Level Indicator

Manufacturer: Simpson Model/Type: 886
ID Number: _____ Digital/Analog: _____
Calibration Date: _____ Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 90-92 Wind Velocity/Direction: _____
Test Series Number: _____ Background Noise Level: _____ dBc
Voice Level: 60 dBc Tone Level: 61-63 dBc
Voice - Background: 50 dBc Tone - Background: 50 dBc
Was Voice Message Understandable? Yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

9 Cell

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: S10-A# Date: 7/17/97

Test Technician: Ry Murray

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100

ID Number: 94020925 Digital/Analog: _____

Calibration Date: 7/17/97 Expiration Date: -

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 88 Wind Velocity/Direction: 3 ^W Miles

Test Series Number: _____ Background Noise Level: 65 dBc

Voice Level: 70 dBc Tone Level: 87 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? Yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

Old River (1) mile from Siren - on - A Cant

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: S/O-A1 Date: 7/17/97

Test Technician: ROY NEARING

Sound Level Indicator

Manufacturer: 4EI Model/Type: DSM100

ID Number: 94020925 Digital/Analog: _____

Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 86 Wind Velocity/Direction: 1 NA

Test Series Number: _____ Background Noise Level: 70 dBc

Voice Level: 75 dBc Tone Level: 86 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? CLEAR

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

ON RIVER (1/2) MILE FROM SIREN-ON-A-CART

88
w/boat
105
boat 2
running

Hanford Site Emergency Alerting System
Siren Test Data SheetArea: SIO-B1 / 100Area Date: 7/17/97Test Technician: Lori WeidnerSound Level IndicatorManufacturer: UEI Model/Type: DSM100ID Number: _____ Digital/Analog: DigitalCalibration Date: 7/17/97 Expiration Date: _____Test Series Data

Location (list landmarks, street names, mile markers, etc.):

NE of F-Plant on road along river.Temperature: 86°F Wind Velocity/Direction: 1-3 mph NWTest Series Number: SIO-B1 Background Noise Level: 65 dBcVoice Level: 72 dBc Tone Level: 81 dBcVoice - Background: 7 dBc Tone - Background: 16 dBcWas Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Small hills between siren & monitor.Comments:1/2 mile from siren

**Hanford Site Emergency Alerting System
Siren Test Data Sheet**

Area: S10-B2 / 100 Area Date: 7/17/97
Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: WEI Model/Type: DSM100
ID Number: _____ Digital/Analog: Digital
Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Near F-Plant directly west of siren

Temperature: 88°F Wind Velocity/Direction: 3mph W

Test Series Number: S10-B2 Background Noise Level: 60 dBc

Voice Level: 74 dBc Tone Level: 75 dBc

Voice - Background: 14 dBc Tone - Background: 15 dBc

Was Voice Message Understandable? W/D

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

1 mile from siren

SIO C 1

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: East 3 road crossing Date: 2-12-97
under power line
 Test Technician: Bob Dunham 'C'

Sound Level Indicator

Manufacturer: Simpson Model/Type: 886-2
 ID Number: 3 Digital/Analog: Analog
 Calibration Date: 2-12-97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 85°F Wind Velocity/Direction: Exm N.W 1-3 mph
 Test Series Number: #1 Background Noise Level: 60 dBc
 Voice Level: 60 dBc Tone Level: 67.5 dBc
 Voice - Background: 59 dBc Tone - Background: 59 dBc
 Was Voice Message Understandable? Clear

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

above with a valley between Mt
 test position & siren

810 C2

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: RT 2 intersection Date: 7-17-92 9:30Test Technician: Rob Dancer 'C'Sound Level IndicatorManufacturer: Simpson Model/Type: 886-2ID Number: #3 Digital/Analog: AnaCalibration Date: 7-17-92 Expiration Date: _____Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 88°F Wind Velocity/Direction: From W. 1-3 mphTest Series Number: 2 Background Noise Level: 55-60 dBcVoice Level: 59 dBc Tone Level: 50-57 dBcVoice - Background: 50 dBc Tone - Background: 50 dBcWas Voice Message Understandable? Low but clear

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

*WIND was up during tone test
note: voice was higher but probably
due to wind difference.*

Comments:

Test 1 D

\$10

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: \$-10-D-1 1/2 mile Date: July 17, 1997

Test Technician: Alan L MacLachlan

Sound Level Indicator

Manufacturer: Simpson Model/Type: 886

ID Number: _____ Digital/Analog: Analog

Calibration Date: July 17, 1997 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.): Telephone pole .5 mile mark
50ft from intersection

Temperature: 86°F Wind Velocity/Direction: 1-3 mph W

Test Series Number: 1 Background Noise Level: 55-60 dBc

Voice Level: 60-65 dBc Tone Level: 65-70 dBc

Voice - Background: 55 dBc Tone - Background: 55 dBc

Was Voice Message Understandable? Yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

clear line of sight

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: S-10-D2. 1 mile Date: July 17, 1997

Test Technician: Alan A MacLachlan

Sound Level Indicator

Manufacturer: Siragon Model/Type: 886

ID Number: _____ Digital/Analog: Analog

Calibration Date: July 17, 1997 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.): Crip. well 300ft off road
location on road

Temperature: 77 Wind Velocity/Direction: 30 kts WNW

Test Series Number: _____ Background Noise Level: 50 dBc

Voice Level: 53-55 dBc Tone Level: 60-65 dBc

Voice - Background: 50 dBc Tone - Background: 50 dBc

Was Voice Message Understandable? Yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):
1 mi A. 5.14

Comments:

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: F1-A1 Date: 7/18/97

Test Technician: Ray NEARNEY

Sound Level Indicator

Manufacturer: Simpson Model/Type: TYPE 2
 ID Number: 004771 Digital/Analog: Analog
 Calibration Date: 7/18/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 78 Wind Velocity/Direction: 4-6 mph No

Test Series Number: _____ Background Noise Level: 72 dBc

Voice Level: 78.75 (6 cell) dBc Tone Level: 71.5 (6 cell) dBc

Voice - Background: 78 dBc Tone - Background: 78 dBc

Was Voice Message Understandable? YES

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc.):

.47 mile from Siren

Comments:

6 CELL
BACKGROUND 70.68
VOICE 78.75
TONE 78

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: 400 FI-BI Date: 7/18/97
 Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100
 ID Number: _____ Digital/Analog: Digital
 Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Outside south entrance of FMEF Bldg

Temperature: 78 Wind Velocity/Direction: N 4-6mph

Test Series Number: FI-BI Background Noise Level: 70-75 dBc

Voice Level: 80 dBc Tone Level: 82 dBc

Voice - Background: 10 dBc Tone - Background: 12 dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Tall Buildings between siren & monitor.

Comments: _____

6 cell Background 75
9 cell Voice 78 $\Delta V = 3 \text{ dBc}$
 Tone 84 $\Delta T = 9 \text{ dBc}$

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: F1-C1 Date: 7/18/97

Test Technician: KEF Whittam

Sound Level Indicator

Manufacturer: Simpson Model/Type: 886.2

ID Number: _____ Digital/Analog

Calibration Date: 7/18/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 78° Wind Velocity/Direction: N 4-6

Test Series Number: _____ Background Noise Level: 70 dBc

Voice Level: 74 dBc Tone Level: 76.77 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? yes / clear

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

g. cell
background 72
voice 74
Tone 78.79

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: F-1 D1 Date: 7-18-97

Test Technician: Cole Harper - D1

Sound Level Indicator

Manufacturer: _____ Model/Type: _____

ID Number: _____ Digital/Analog: _____

Calibration Date: _____ Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 78 Wind Velocity/Direction: 4/6 -N

Test Series Number: _____ Background Noise Level: 80 dBc

Voice Level: 84 dBc Tone Level: 90 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? _____

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

*47 miles
Wind made instrument
vary in db reading.
Could hear both
voice & tone well.

9 cell

80 Back

84 Voice

86 Tone

— Wasn't much
louder than 6 cell

Hanford Site Emergency Alerting System
Siren Test Data SheetArea: F2-A2 Date: 7/12/97Test Technician: Ray SearneySound Level IndicatorManufacturer: UEI Model/Type: DSM 100ID Number: _____ Digital/Analog: _____Calibration Date: 7/17/97 Expiration Date: -Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 87 Wind Velocity/Direction: 5-6 NTest Series Number: _____ Background Noise Level: 65 dBcVoice Level: 81 dBc Tone Level: 92 dBcVoice - Background: 65 dBc Tone - Background: _____ dBcWas Voice Message Understandable? Yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

AS
Comments:Background 65Voice 65Tone 74

**Hanford Site Emergency Alerting System
Siren Test Data Sheet**

Area: 400 F2-B2 Date: 7/18/97

Test Technician: Lori Weidner

Sound Level Indicator

Manufacturer: UEI Model/Type: DSM100

ID Number: _____ Digital/Analog: Digital

Calibration Date: 7/17/97 Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

3 feet west of SW corner of 4132B Bldg.

Temperature: 87°F Wind Velocity/Direction: N 5-6mph

Test Series Number: F2-B2 Background Noise Level: 75 dBc

Voice Level: 83 dBc Tone Level: 89 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments:

~~400 F2-B2~~

~~400 F2-B2~~

Background 62

Voice 62

Tone 65

Understandable yes

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: F2-C2 Date: 7/18/97
 Test Technician: Jeff Whattam

Sound Level Indicator

Manufacturer: _____ Model/Type: _____
 ID Number: _____ Digital/Analog: _____
 Calibration Date: _____ Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 87° Wind Velocity/Direction: W 5-6
 Test Series Number: _____ Background Noise Level: 73 dBc
 Voice Level: 87 dBc Tone Level: 94 dBc
 Voice - Background: _____ dBc Tone - Background: _____ dBc
 Was Voice Message Understandable? YES - clear

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations, etc):

Comments: C3

Background 70
 Tone 74
 Voice 72 yes

Hanford Site Emergency Alerting System Siren Test Data Sheet

Area: 400 FZ-DZ Date: 7-18-97

Test Technician: Cole Harper

Sound Level Indicator

Manufacturer: _____ Model/Type: _____

ID Number: _____ Digital/Analog: _____

Calibration Date: _____ Expiration Date: _____

Test Series Data

Location (list landmarks, street names, mile markers, etc.):

Temperature: 87° Wind Velocity/Direction: 5-6 / N

Test Series Number: _____ Background Noise Level: 70 dBc

Voice Level: 74 dBc Tone Level: 81 dBc

Voice - Background: _____ dBc Tone - Background: _____ dBc

Was Voice Message Understandable? yes

List Any Large Formations Which Might Cause Attenuation (Buildings, Hills, Rock Formations; etc):

Comments:

.3 miles
Couldnt hear
Voice

DZ-3

70 Background

79 Voice Und.

92 tone

APPENDIX D

SUMMARY OF SIREN TEST DATA

Summary of Siren Test Data
Tests Performed July 17 and 18, 1997

Siren Number	Monitor Location	River/Land	Distance From Siren	Siren Cells	Wind mph	Temperature Degrees F	Background dBc	Voice dBc	Tone dBc	Voice Minus Background	Tone Minus Background	Was Message Understandable?	Comments/Other Info
S6	S6-A1	River	0.5 Mile	6	6-10 NW	93	97		97		0		Boat Motor Idle
S6	S6-A1	River	0.5 Mile	6	6-10 NW	93	75		88		13		Boat Motor Off
S6	S6-A1	River	0.5 Mile	9	6-10 NW	93	75		96		21		Boat Motor Off
S6	S6-A2	River	1 Mile	6	6-10 N	93	95		100		5	No	Boat Motor Idle
S6	S6-A2	River	1 Mile	6	6-10 N	93	90		97		7		Boat Motor Off
S6	S6-A3	River	0.3 Mile	6	6-10 W	93	88		95		7	No	Boat Motor Idle
S6	S6-A3	River	0.3 Mile	6	6-10 W	93	90		97		7		Boat Motor Off
S6	S6-B1	Land	0.5 Mile	6	6-10 NW	93	90	93	99	3	9	Yes	Wind Caused High Background Noise
S6	S6-B2	Land	1 Mile	6	6-8 WNW	93	87	97	96	10	9	Yes	Wind Caused High Background Noise
S7	S7-A1	River	0.5 Mile	6	10 W	94	80	80	85	0	5	No	Boat Motor Idle
S7	S7-A1	River	0.5 Mile	6	Calm	94	67		83		16		Boat Motor Off
S7	S7-A2	River	1 Mile	6	10 W	93	80	84	86	4	6	Yes - Barely	Boat Motor Off
S7	S7-B1	Land	0.5 Mile	6	Calm	94	72	85	86	13	14	Yes	Very Flat Terrain
S7	S7-B2	Land	1 Mile	6	10 W	93	89	97	97	8	8	Yes	Wind Caused High Background Noise
S8	S8-A1	River	0.3 Mile	6	3 NW	90	83	86	95	3	12	Yes	Boat Motor Idle
S8	S8-A1	River	0.3 Mile	6	3 NW	90	70		94		24		Boat Motor Off
S8	S8-A2	River	1 Mile	6	3 NW	90	86	86	89	0	3	No	Boat Motor Idle
S8	S8-A2	River	1 Mile	6	Calm	90	75		90		15		Boat Motor Off
S8	S8-B1	Land	0.5 Mile	6	3 NW	90	77	88	92	11	15	Yes	Very Hilly Terrain
S8	S8-B2	Land	0.8 Mile	6	8 NW	90	73	92	91	19	18	Yes	Very Hilly Terrain

Summary of Siren Test Data
Tests Performed July 17 and 18, 1997

Siren Number	Monitor Location	River/ Land	Distance From Siren	Siren Cells	Wind mph	Temperature Degrees F	Background dBc	Voice dBc	Tone dBc	Voice Minus Background	Tone Minus Background	Was Message Understandable?	Comments/Other Info
S9	S9-A1	River	0.5 Mile	6	Calm	95	78	83	88	5	10	Garbled	Boat Motor Off
S9	S9-A1	River	0.5 Mile	6	Calm	95	80		84		4		Boat Motor Idle
S9	S9-A2	River	1.2 Mile	6	Calm	92	81	81	81	0	0	No	Boat Motor Idle
S9	S9-A2	River	1.2 Mile	6	Calm	92	56		60		4		Boat Motor Off
S9	S9-A2	River	1.2 Mile	9	Calm	92	64		76		12		9 Cell Plus All River Testing Sirens
S9	S9-A2	River	1.2 Mile	9	Calm	92	64	66	73	2	9		Boat Motor Off
S9	S9-B1	Land	0.5 Mile	6	4 NNE	95	59	72	78	13	19	Yes	Slightly Hilly Terrain
S9	S9-B2	Land	1 Mile	6	2 WNW	92	61	72	80	11	19	Yes	Slightly Hilly Terrain
S9	S9-B2	Land	1 Mile	9	2 WNW	92	61	78	86	17	25	Yes	Slightly Hilly Terrain
S9	S9-C1	Land	0.5 Mile	6	4 NNE	95	52	63	72	11	20	Yes	
S9	S9-C2	Land	1 Mile	6	2 WNW	92	63	65	70	2	7	Yes	Echo Was As Loud
S9	S9-C2	Land	1 Mile	9	Calm	93	65	66	73	1	8		
S9	S9-D1	Land	0.5 Mile	6	4 NNE	95	50	60	66	10	16	Yes	
S9	S9-D2	Land	1 Mile	6	2 WNW	92	55	58	67	3	12	Yes	
S9	S9-D2	Land	1 Mile	9	Calm	92	55	60	62	5	7	Yes	
S10	S10-A1	River	0.5 Mile	6	1 NW	86	70	75	86	5	16	Clear	Boat Motor Off
S10	S10-A1	River				86	89						Boat Motor Idle
S10	S10-A1	River				86	103						Boat Motor Running
S10	S10-A2	River	1 Mile	6	3 W	88	65	70	87	5	22	Yes	Boat Motor Off
S10	S10-A2	River				88	83						Boat Motor Idle
S10	S10-B1	Land	0.5 Mile	6	2 NW	86	65	72	81	7	16	Yes	Slightly Hilly Terrain
S10	S10-B2	Land	1 Mile	6	3 W	88	60	74	75	14	15	Yes	Slightly Hilly Terrain
S10	S10-C1	Land	0.5 Mile	6	2 NW	86	60	60	68	0	8	Clear	Slightly Hilly Terrain
S10	S10-C2	Land	1 Mile	6	3 W	88	55	59	57	4	2	Low But Clear	Slightly Hilly Terrain
S10	S10-D1	Land	0.5 Mile	6	2 NW	86	57	62	68	5	11	Yes	
S10	S10-D2	Land	1 Mile	6	3 W	88	50	54	63	4	13	Yes	

Summary of Siren Test Data
Tests Performed July 17 and 18, 1997

Siren Number	Monitor Location	River/ Land	Distance From Siren	Siren Cells	Wind mph	Temperature Degrees F	Background dBc	Voice dBc	Tone dBc	Voice Minus Background	Tone Minus Background	Was Message Understandable?	Comments/Other Info
F1	F1-A1	Within 400 Area	6	4-6 N	78	72	75	75	3	3	Yes		
F1	F1-A1	Within 400 Area	9	4-6 N	78	68	75	78	7	10			
F1	F1-B1	Within 400 Area	6	4-6 N	78	73	80	82	7	9	Yes		
F1	F1-B1	Within 400 Area	9	4-6 N	78	75	78	84	3	9			
F1	F1-C1	Within 400 Area	6	4-6 N	78	70	74	76	4	6	Yes		
F1	F1-C1	Within 400 Area	9	4-6 N	78	72	74	79	2	7			
F1	F1-D1	Within 400 Area	6	4-6 N	78	80	84	90	4	10	Yes		
F1	F1-D1	Within 400 Area	9	4-6 N	78	80	84	86	4	6			
F2	F2-A2	Within 400 Area	6	5-6 N	87	65	81	92	16	27	Yes		
F2	F2-B2	Within 400 Area	6	5-6 N	87	75	83	89	8	14			
F2	F2-C2	Within 400 Area	6	5-6 N	87	73	84	94	11	21	Yes		
F2	F2-D2	Within 400 Area	6	5-6 N	87	70	74	81	4	11			
	F2-A2	Within 400 Area	0	5-6 N	87	65	65	74	0	9		Test of Existing Facility Sirens	
	F2-B2	Within 400 Area	0	5-6 N	87	62	62	65	0	3	Yes	Test of Existing Facility Sirens	
	F2-C2	Within 400 Area	0	5-6 N	87	70	74	72	4	2	Yes	Test of Existing Facility Sirens	
	F2-D2	Within 400 Area	0	5-6 N	87	70	79	92	9	22	Yes	Test of Existing Facility Sirens	