

PALO VERDE NUCLEAR GENERATING STATION

PROMPT NOTIFICATION
SIREN SYSTEM TEST REPORT
October 1, 1983

8412060338 841204
PDR ADDCK 05000528
F PDR

ATTACHMENT M

SUMMARY

APS conducted a full scale test of the PVNGS Prompt Notification Siren System on September 10, 1983. The Siren System, comprised of thirty-seven sirens, was activated from the Maricopa County Department of Civil Defense and Emergency Services at 11:30 AM. Civil Air Patrol Cadets, provided through the Arizona Division of Emergency Services, participated as evaluators/observers.

The results showed that the siren system met or exceeded all applicable federal standards. Thirty-six of the thirty-seven sirens (97%) activated and operated as designed. One siren did not activate due to a minor problem which has been corrected.

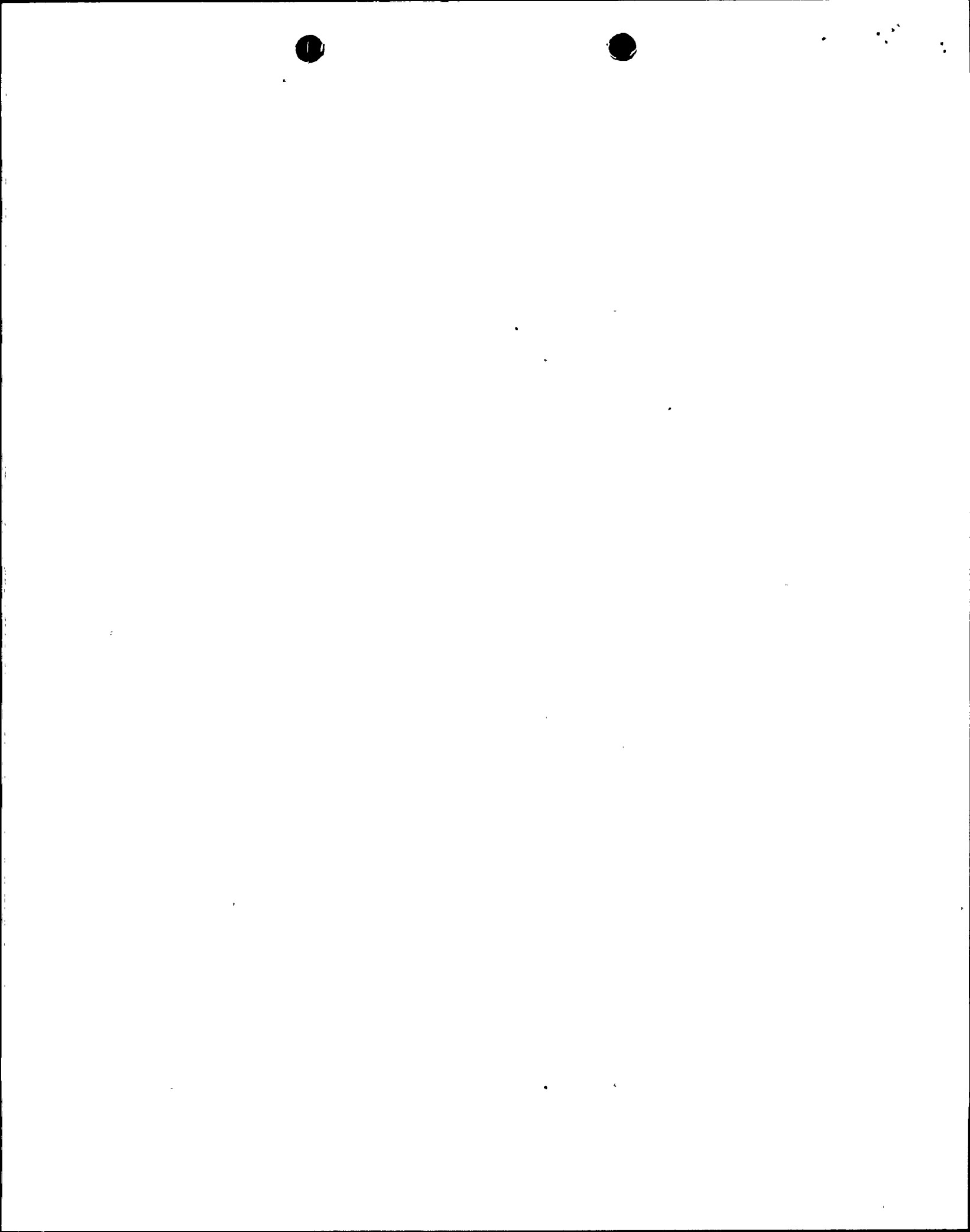
I. Introduction

A. Purpose

The first full scale functional test of the PVNGS Prompt Notification System was conducted on September 10, 1983. The objective of the test was to demonstrate that all sirens can be activated from the Maricopa County Department of Civil Defense and Emergency Services, and all sirens and component parts operate properly.

B. System Description

The thirty-seven sirens installed within the 10-mile EPZ by APS were manufactured by Federal Signal Corporation (FSC). The alert system designed consists of thirty-four electro-mechanical FSC Thunderbolt models and three electronic FSC Siratone models. Both the Thunderbolt and Siratone models are rotating sirens and produce a single tone. The electro-mechanical sirens utilize a single phase power supply, while the electronic siren model uses a solar powered battery unit for its power source. Sound level measurements were performed prior to the test by Acoustic Technology Incorporated test engineers and are included in APS' field testing of the Siren Prompt Notification System for PVNGS, dated August 1983. The Report was forwarded to FEMA, Region IX, on September 30, 1983 for review and comment.



II. Pre-Test Preparation

A. Checkout of Equipment

Prior to the September 10th test, a growl test was performed on each individual siren. To ensure that each siren could receive a signal, a silent test was conducted from the designated activation control panel.

B. Personnel Training

On August 30, 1983, APS conducted a training class for state and county personnel having the responsibility for activating the sirens. Participants in the training session included representatives from the Maricopa County Department of Civil Defense and Emergency Services, the Maricopa County Sheriff's Office and the Department of Public Safety.

C. Public Information

The residents in the PVNGS 10-mile EPZ were notified, by written correspondence, of the date and approximate time that the sirens would be activated. In addition, APS solicited public participation by requesting each resident to fill out and enclosed, self-addressed questionnaire. Survey results are provided on Attachment #1.

APS informed local media of the siren test date and approximate time. A complete list of media distribution is provided on Attachment #2.

III. Procedures & Results

A. Staffing & Communications

The Civil Air Patrol Cadets assembled at the Palo Verde Nuclear Generating Station Visitors' Center, where they were briefed on the purpose of the Palo Verde Siren Prompt Notification System and siren test evaluation forms, and then divided into teams. Palo Verde emergency response planning personnel were assigned as group leaders. Group leaders were responsible for field communications, transporting evaluators to and from designated siren pole locations, collecting siren data sheets completed by the observers (sample data sheet, Attachment #3),



and returning them to the PVNGS Visitors' Center for tabulation.

A central control station was established, adjacent to the PVNGS Visitors' Center, to synchronize field team deployment with the MCD&ES siren activation point. Communications between the activation point and the field was accomplished using the ARRA REAT communications net. Two maintenance crews were strategically placed in the field to respond to any sirens which malfunctioned during the test. The siren system was activated at approximately 11:30 AM.

B. Observer Results

1. Activation Point

MCD&ES successfully activated the sirens from the County EOC. Control Panel Interrogation Readout is provided on Attachment #4.

2. Siren Activation

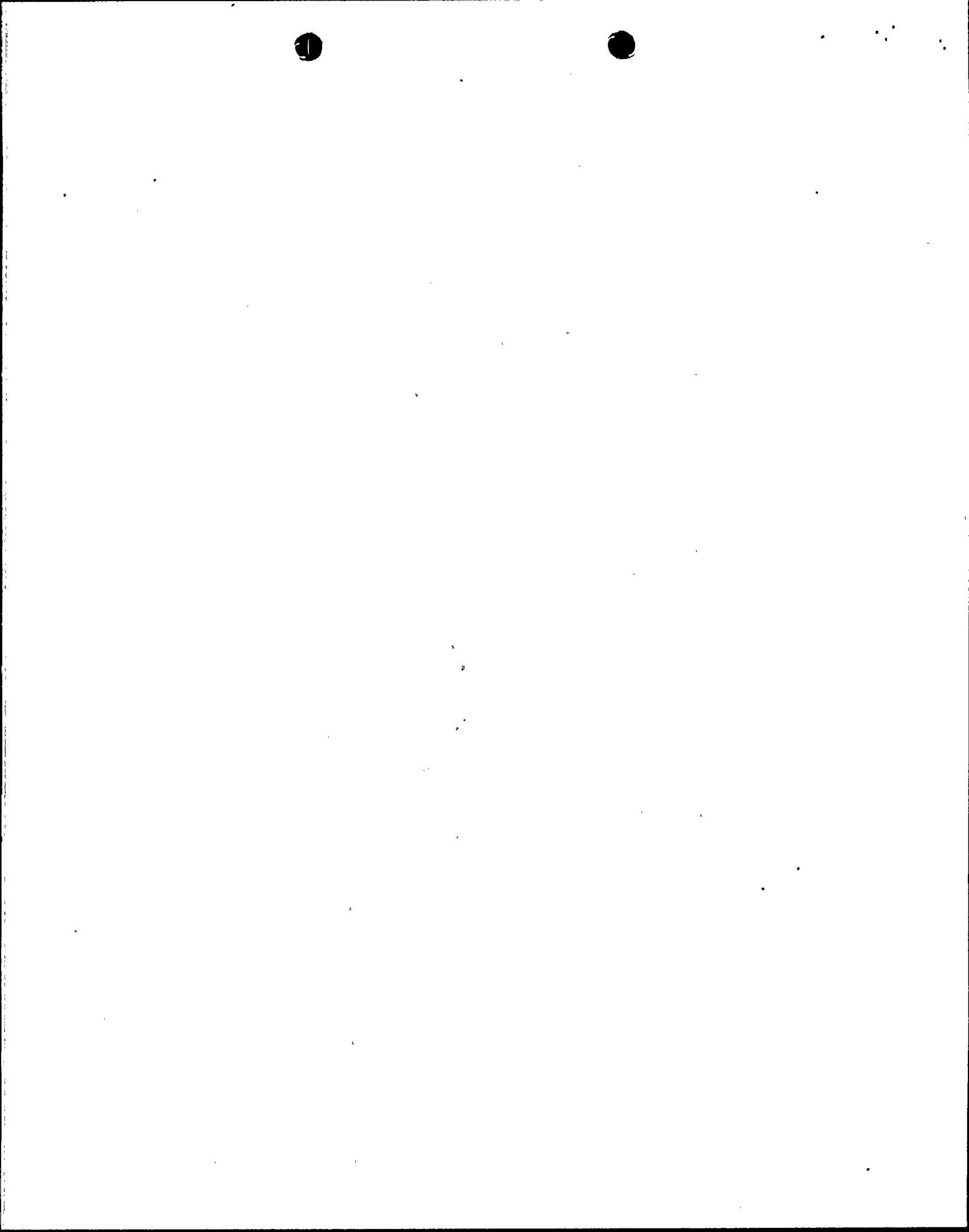
Each of the thirty-seven sirens were categorized into one of three areas, Normal Operations, Failure to Activate and Partial Failure.

SUMMARY

<u>Normal Operations</u>	<u>Failure to Activate</u>	<u>Partial Failure</u>
36 (97%)	1 (less than 3%)	0

C. Corrective Actions

The one siren which failed to operate properly during the test has been repaired. The problem was due to a circuit breaker which failed to reset when switched from manual to remote activation. A completed FEMA, Region IX, Siren Testing Log is provided on Attachment #5.



ATTACHMENT #1

RESIDENT QUESTIONNAIRE SURVEY RESULTS

Number of residents within the 10-mile EPZ:

Approximately 1000.

Number of respondents:

202 (20%).

Respondents located indoors:

162 (80%)

Respondents alerted by siren:

113 (56%)

Respondents located outdoors and not alerted by siren:

13 (6.0%).

ATTACHMENT #2

MEDIA DISTRIBUTION LIST

<u>Arizona Business Gazette</u>	KASA Radio
<u>Arizona Farmer-Ranchman</u>	KDJQ Radio
<u>Arizona Legislative Review</u>	KDKB Radio
<u>Arizona Republic</u>	KFLR Radio
<u>Buckeye Valley News</u>	KHEP Radio
<u>El Sol (spanish speaking newspaper)</u>	KJJJ Radio
<u>Glendale Star</u>	KKLT Radio
<u>Maryvale Star</u>	KLFF Radio
<u>Mesa Tribune</u>	KMCR Radio
<u>New Times Weekly</u>	KMEO Radio
<u>Peoria Times</u>	KMLE Radio
<u>Phoenix Business Journal</u>	KMZK Radio
<u>Phoenix Gazette</u>	KNIX Radio
<u>Scottsdale Daily Progress</u>	KOOL Radio
<u>Sun City Citizen</u>	KOPA Radio
<u>Sun City News Sun</u>	KOY Radio (spanish speaking)
<u>Tempe Daily News</u>	KPHX Radio
<u>Westsider</u>	KQYT Radio
KAET Television	KRDS Radio
KNVX Television	KSTM Radio
KPAZ Television	KTAR Radio
KPHO Television	KUKQ Radio
KPNX Television	KUPD Radio
KTSP Television	KVVA Radio (spanish speaking)
KTVK Television	KXAM Radio
KYVW Television	KXEG Radio
	KZZP Radio
Arizona Chamber of Commerce	
Associated Press Wire Service	
United Press International Wire Service	



PALO VERDE NUCLEAR GENERATING STATION

Siren Test Report Form

Name (Please Print) _____

Address _____

Home Phone _____

Siren Number _____ (Use siren number on pole)

When you reach your siren location, walk over to the siren pole and find the number. This should be the same as your siren number listed above. For the test you should stand where you have a good view of the siren and about 1 block away (200-300 ft.). Wait for the siren test to begin and complete the questionnaire. After the test, return the evaluation sheet to your group leader.

Siren Test #	Time of Day Siren Started	Time of Day Siren Stopped	(Check one)	
			Wavering Tone	Steady Tone
1	_____	_____	_____	_____

(This test will last 3-5 minutes)

Did the siren operate continuously throughout the test?

_____yes _____no

Did the horn rotate? _____yes _____no

Did the siren fail to turn off? _____yes _____no

A siren should start up gradually to full tone and coast down at the end of the test. Was there anything unusual about this siren's operation?

Yes _____ No _____

Comments: _____

Observer Signature _____ Date _____

Group Leader Signature _____ Date _____

INTERROGATION READOUT

) 11:28 CTR S 400 A
 11:28 COS 010 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 200 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 220 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 230 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 240 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 260 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 300 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 310 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 330 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 400 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 401 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 402 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 412 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:28 COS 420 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 421 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 430 A 1+X 2-0 3-0 4-0 5-0 6-0 7-0 8-0
 11:29 COS 431 A 1+X 2-0 3-0 4-0 5-0 6-0 7-0 8-0
 11:29 COS 440 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 441 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 442 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 450 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 451 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0

PAGE 010

DATE: SEP.10.83

11:29 COS 452 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 453 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 454 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 455 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 460 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 461 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 462 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 470 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 471 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 472 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 500 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 540 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 11:29 COS 570 A 1+X 2+X 3-0 4-0 5+X 6-0 7-0 8-0
 O 11:30 INT ... 410
 11:30 COS 410 A 1+X 2-0 3-0 4-0 5-0 6-0 7-0 8-0
 O 11:31 INT 411
 O 11:31 INT 410
 11:31 COS 410 A 1+0 2-0 3-0 4-0 5-0 6-0 7-0 8-0
 O 11:31 INT 411

D 11:32 CTR S 004 A

11:32	CDS	010	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	200	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	220	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	230	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	240	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	260	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	300	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	310	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	330	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	400	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	401	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	402	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	412	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:32	CDS	420	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	421	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	430	A	1+0	2-0	3-0	4-0	5-0	6-0	7-0	8-0
11:33	CDS	431	A	1+0	2-0	3-0	4-0	5-0	6-0	7-0	8-0
11:33	CDS	440	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	441	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	442	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	450	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	451	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	452	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	453	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	454	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	455	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	460	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	461	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	462	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	470	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	471	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	472	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0

PAGE 011

DATE: SEP.10.83

11:33	CDS	500	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	540	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0
11:33	CDS	570	A	1+0	2+0	3-0	4-0	5+0	6-0	7-0	8-0



FEMA REGION IX SIREN TESTING, MAINTENANCE, AND OUTAGE LOG

NAME OF NUCLEAR POWER PLANT: PALO VERDE NUCLEAR GENERATING STATION
 LOCATION: APPROXIMATELY 50 MILES WEST OF PHOENIX, ARIZONA

DATE LOG SUBMITTED TO FEMA: October 1, 1983

SIREN NUMBERS		TESTING			MAINTENANCE	OUTAGE	GENERAL INFORMATION					
Address (Intrae) Number	Location Number	Type of Test	Date/Time of Test	Test Satisfactory/Unsatisfactory	Date/Time Preventive Maintenance Performed	Date/Time Siren Malfunction	Type of Malfunction	Corrective Action Taken	Date/Time Siren Logged Out	Date/Time Siren Logged In	FEMA Notified? Yes/No Date/Time	Remarks
010	23	Complete cycle	091083 11:28 AM	Satisfactory								
200	25	Complete cycle	091083 11:28 AM	Satisfactory								
220	22	Complete Cycle	091083 11:28 AM	Satisfactory								
230	17	Complete Cycle	091083 11:28 AM	Satisfactory								
240	18	Complete Cycle	091083 11:28 AM	Satisfactory								
260	36	Complete Cycle	091083 11:28 AM	Satisfactory								
300	35	Complete Cycle	091083 11:28 AM	Satisfactory								
310	34	Complete Cycle	091083 11:28 AM	Satisfactory								
330	33	Complete Cycle	091083 11:28 AM	Satisfactory								
400	27	Complete Cycle	091083 11:28 AM	Satisfactory								
401	29	Complete Cycle	091083 11:28 AM	Satisfactory								

100183
bam





Arizona Public Service Company

INCORPORATED IN ARIZONA 1950

August 24, 1983

Dear Resident:

A siren warning system, which will sound should an emergency occur at the Palo Verde Nuclear Generating Station, has been installed in the ten-mile area around the plant. The Federal Emergency Management Agency requires that the siren system be tested each year. We will give the Palo Verde system two tests in September.

The first test will take place during the afternoon of Thursday, September 1, 1983.

The second test will be held on Saturday, September 10, 1983.

Every person should be able to hear at least one siren, regardless of their location in the ten-mile area. However, the only way for us to be sure that you can hear the sirens is for you to let us know.

Enclosed is a postage-paid response card for your use on September 1. After the test, please check the appropriate boxes on the card and mail it to us.

We will notify you again before the second test is held on September 10. That letter will also contain a response card.

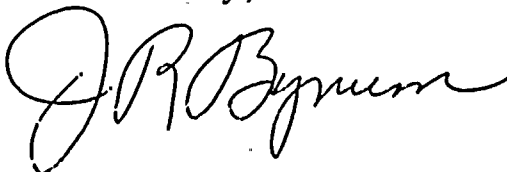
We need your help in these tests. We want to be certain that we are able to warn you should the need arise. Sending in the response card is very important.

One more thing. The sirens are set to operate for three minutes. If a siren near you continues for longer than that, please call 932-3230 so that the siren's controls can be corrected.

You can also call this number if you have any questions about the tests.

Thank you for your help.

Sincerely,



Joseph R. Bynum
Manager of Nuclear Operations

Enclosure

PVNGS-JRB-L83-1233

Arizona Public Service Comp.

PO BOX 1776 • PHOENIX ARIZONA 85003

D. Canady (w/o enclosures)
Clapp (w/o enclosures)
A. Demlong (w/o enclosures)
P. Klute (w/o enclosures)
J. Lodge (w/o enclosures) ✓
M. Menton (w/o enclosures)
D. Yows (w/enclosures)
M. Zimmerman (w/o enclosures)

October 21, 1983

Mr. Tom Brinton, RAC Chairman
Federal Emergency Management Agency
Region IX, Building 105
Presidio of San Francisco
San Francisco, California 94129

R. Colson, ADES (w/enclosures)
C. Funk, ADES (w/o enclosures)
C. Tedford, ARRA (w/enclosure)
J. Lutton, ARRA (w/o enclosur
R. Bluhm, MCD&ES (w/enclosu
G. Romas, MCD&ES (w/o enclo
J. Hill, MCSO (w/enclosures)
D. Overton, MCSO (w/o enclosu

Dear Mr. Brinton:

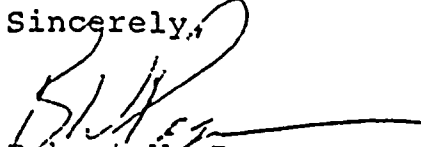
Enclosed is the PVNGS Prompt Notification Siren
Test Report and the APS Ambient Sound Level Study.

The Siren Test Report includes all pertinent data,
as requested by Terry Knight, pertaining to the first
full scale test of the PVNGS Prompt Notification Siren
System conducted on September 10, 1983. In addition to
the siren network covering the PVNGS 10-mile EPZ, APS,
in cooperation with Maricopa County Department of Civil
Defense and Emergency Services, will install tone alert-
ing devices in the two schools located in the vicinity
of PVNGS. This system should be completed by January
1, 1984.

The Ambient Noise Level Study was performed by
APS on August 30, 1983. This Study is intended to
augment the ambient measurements recorded by ATI engi-
neers contained in the report entitled Field Testing
of the Siren Prompt Notification System for PVNGS,
dated August 30, 1983.

If you are in need of any additional information,
please do not hesitate to call me at (602) 932-5300,
Extension 6180.

Sincerely,


Robert W. Page
Manager
Emergency Planning

bam

Enclosures

copies: Ed Lewis (w/enclosures)
Joe Bynum (w/o enclosures)
Harry Bieling (w/enclosures)
Terry Knight, FEMA (w/o enclosures)
Ken Nauman, FEMA (w/enclosures)

Letter #: EPCM-3-25

