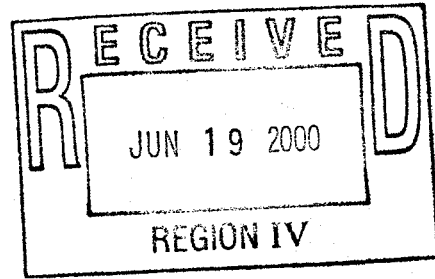




Federal Emergency Management Agency

Region VI
Federal Regional Center
800 North Loop 288
Denton, TX 76201-3698

June 15, 2000



Mr. Ellis W. Merschoff
U.S. NRC, Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

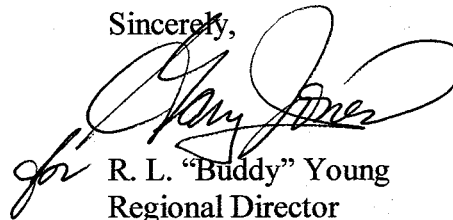
Dear Mr. Merschoff:

Enclosed is copy of the Radiological Emergency Preparedness final report for the Arkansas Nuclear One (ANO) plume pathway exercise conducted on March 15, 2000 in Russellville, Arkansas.

There were no Deficiencies and three Areas Requiring Corrective Action (ARCAs) identified during the exercise. Based on the results of this exercise, the off-site radiological emergency response plans and preparedness for the State of Arkansas and the affected local jurisdictions are deemed adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public in the event of a radiological emergency. Therefore, 44 CFR Part 350 approval of the off-site radiological emergency response plans and preparedness for the State of Arkansas site-specific to ANO will remain in effect.

A copy of this report was forwarded to the Acting Chief, Emergency Preparedness and Health Physics Branch, at NRC in Washington, D.C. Should you have questions, please contact Larry J. Earp, Region VI Regional Assistance Committee Chairman, at 940-898-5240 or Marilyn Boots at 940-898-5122.

Sincerely,


R. L. "Buddy" Young
Regional Director

Enclosure

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I. EXECUTIVE SUMMARY

On March 15, 2000, a biennial Radiological Emergency Preparedness (REP) exercise was conducted in the plume exposure pathway emergency planning zone (EPZ) around Arkansas Nuclear One (ANO), Russellville, Arkansas. The exercise was evaluated by the Federal Emergency Management Agency (FEMA), Region VI. The purpose was to assess the level of preparedness of the State and local responders to react to a simulated radiological emergency at Arkansas Nuclear One. It was held in accordance with FEMA's policies and guidance concerning the implementation of State and local radiological emergency preparedness plans and procedures.

The qualifying exercise to satisfy FEMA Rule 44 CFR 350 requirements for the Nuclear Regulatory Commission (NRC) licensing to operate the facility was conducted on October 1, 1980. Including the exercise on March 15, 2000, there have been 16 FEMA evaluated exercises plus several drills conducted since that time.

FEMA, Region VI wishes to acknowledge the dedicated participation of many individuals in the State of Arkansas and Conway, Johnson, Logan, Pope and Yell counties. Many of these participants are paid civil servants whose full-time job is to protect the health and safety of the public within the jurisdictions they serve. There are many more that are volunteers that make themselves available to perform a service to the community in which they live.

This report contains the written assessment of the biennial exercise including the identification of any exercise issues and recommendations for corrective action where appropriate.

Representatives of all State and local organizations, except where noted in this report, demonstrated an adequate knowledge of the emergency plans and procedures and properly implemented them. There were no Deficiencies and three Areas Requiring Corrective Action (ARCAs) identified during this exercise.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all off-site nuclear power facility planning and response. The FEMA activities are conducted pursuant to 44 Code of Federal Regulations (CFR) 350, 351 and 352. These regulations are a key element in the REP Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

FEMA Rule 44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State and local government radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local governments' participation in joint exercises with licensees.

FEMA's responsibilities in fixed nuclear facility radiological emergency response planning include:

- Taking the lead in off-site emergency response planning and in the review and evaluation of State and local government emergency plans, ensuring that the plans meet the Federal criteria set forth in NUREG-0654/FEMA REP-1, Rev.1 (November 1980);
- Determining whether the State and local emergency response plans can be implemented on the basis of observation and evaluation of an exercise conducted by the appropriate emergency response jurisdictions;
- Responding to requests by the NRC pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993); and
- Coordinating the activities of volunteer organizations and other involved Federal agencies. Representatives of these agencies, listed below, serve as members of the Regional Assistance Committee (RAC), which is chaired by FEMA.
 - U.S. Nuclear Regulatory Commission (NRC)
 - U.S. Environmental Protection Agency (EPA)
 - U.S. Department of Energy (DOE)
 - U.S. Department of Health and Human Services (DHHS)
 - U.S. Department of Transportation (DOT)
 - U.S. Department of Agriculture (USDA)
 - U.S. Department of Interior (DOI)
 - U.S. Food and Drug Administration (FDA)

The findings presented in this report are based on the Federal evaluation team's assessment of the participants' response to a simulated radiological incident at Arkansas Nuclear One that affected the off-site populace. The final classification of any issues identified were made by the Region VI RAC Chairman and approved by the Regional Director.

The criteria used in the evaluation process are contained in:

- NUREG-0654, FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980);
- FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual" (September 1991); and
- FEMA-REP-15, "Radiological Emergency Preparedness Exercise Evaluation Methodology (EEM)" (September 1991).

Section III of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section contains a description of the emergency planning zone, a listing of all participating jurisdictions which were evaluated and a tabular presentation of the times of actual occurrence of key exercise events and activities.

Section IV of this report, entitled "Exercise Evaluation and Results," presents basic information on the demonstration of applicable exercise objectives at each jurisdiction or functional entity evaluated in a jurisdiction-based format. This section also contains descriptions of all ARCAs assessed during the exercise and recommended corrective actions, as well as descriptions of ARCAs assessed during previous exercises and the current status of each.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the March 15, 2000, exercise to test the off-site response capabilities in the area surrounding ANO. This section of the report includes a description of the EPZ and Ingestion Planning Zone (IPZ), a listing of all participating jurisdictions which were evaluated, and a tabular presentation of the times of actual occurrence of key exercise events and activities.

A. Emergency Planning Zone Description

The 10-mile Emergency Planning Zone around ANO, a circle with a radius of 10 miles with ANO at the center, can be described best by referring to a number of prominent features or landmarks in the area.

The most distinctive feature of the EPZ is the Arkansas River and Lake Dardanelle. The river bisects the zone from the northeast near the City of Knoxville to the southeast near the city of Dardanelle. Lake Dardanelle, which surrounds the ANO peninsula and ANO, is the most central feature.

The northern edge of the zone lies approximately 1 mile north of Piney Creek in Pope County. The southern edge lies approximately 2 miles directly south of Mt. Nebo in Yell County. A point approximately one-quarter mile west of the junction of River Mountain Road and Highway 22 in Logan County marks the western edge of the EPZ. The eastern boundary of the zone lies approximately along a line marking the city limits of Russellville and Pottsville in Pope County.

Portions of Pope, Yell, Logan, and Johnson counties are included in the EPZ. The 10-mile EPZ contains approximately 39,221 residents with just over 63% of the population in the cities of Russellville and Dardanelle in the southeastern quadrant. The EPZ is subdivided into 15 protective action zones for emergency planning purposes as well as the implementation of protective actions. Interstate 40 and State Highway 64 cross the EPZ from east to west, and State Highway 7 crosses from north to south.

The 50-mile ingestion pathway zone can be described as a circle with a 50-mile radius with ANO at its center. It covers all or part of 19 Arkansas counties including: Pope, Yell, Logan, Johnson, Conway, Newton, Madison, Scott, Crawford, Perry, Garland, Faulkner, Searcy, Franklin, Sebastian, Montgomery, Saline, Pulaski, and Van Buren.

The 50-mile IPZ boundary can be approximately delineated using these points. The northern edge is 50 miles north of ANO at a point lying 6.5 miles south of the northern border of Newton County and 1 mile north of Jasper, Arkansas. The eastern edge is 50 miles east of ANO at a point lying 7 miles east of the western border of Faulkner County and 5.5 miles northeast of Greenbrier, Arkansas. The southern edge is 50 miles south of ANO at a point lying 13 miles south of the northern border of

Garland County and 11 miles northwest of Hot Springs, Arkansas. The western edge is 50 miles west of ANO at a point lying 2 miles west of the eastern border of Sebastian County and 5 miles southeast of Lavaca, Arkansas.

The 50-mile IPZ is bisected west to east by the Arkansas River, Interstate 40 and State Highway 64 from Mulberry, Arkansas to near Roland, Arkansas. Its most central feature is Lake Dardanelle and the ANO peninsula.

B. Exercise Participants

Agencies and organizations of the following jurisdictions participated in and were evaluated during the Arkansas Nuclear One exercise at the locations indicated:

State of Arkansas

Arkansas Department of Health
Arkansas Department of Emergency Management

Risk Jurisdictions

Johnson County
Logan County
Pope County
Yell County
Conway County

Support Jurisdictions and Organizations

Logan County Designated Care Center - Morrilton
Emergency Worker Center - Atkins
Pope County Emergency Medical Services
St. Mary's AMI Medical Center

C. Exercise Timeline

Table 1, on the following page, presents the times at which key events and activities occurred during the Arkansas Nuclear One plume exercise held on March 15, 2000.

Table 1. Exercise Timeline

DATE AND SITE: March 15, 2000

ARKANSAS NUCLEAR ONE

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken										
		AR State EOC	ADII-ECC	ADIIa-EOF	ENC	POPE CO EOC	JOHNSON CO EOC	LOGAN CO EOC	YELL CO EOC	CONWAY CO EOC	EBS-EAS KCJC	NWS
Unusual Event	8:01 a	8:16 a	8:15 a	8:12 a NP&RP	N/A	8:16 a	8:16 a	8:13 a	8:16 a	8:10 a		
Alert	8:30 a	8:41 a		8:35 a NP&RP	8:30 a	8:34 a	8:46 a	8:42 a	8:42 a	8:35 a	9:54 a	9:50 a
Site Area Emergency	9:45 a	10:00 a		9:46 a	9:48 a	9:53 a	9:58 a	9:59 a	10:00 a	10:00 a		
General Emergency	10:49 a	11:06 a		10:50 a	10:50 a	10:58 a	11:05 a	11:06 a	11:06 a	11:06 a		
Simulated Rad. Release Started	10:44 a	11:38 a		11:35 a	11:00 a	11:36 a	11:43 a	11:43 a	11:43 a	11:43 a		
Simulated Rad. Release Terminated	N/A											
Facility Declared Operational		10:00 a	24-hour	9:45 a	9:05 a	9:01 a	8:56 a	8:52 a	8:50 a	9:10 a	24-hour	24-hour
Declaration of State of Emergency		10:15 a			10:55 a	10:00 a		8:10 a				
Exercise Terminated		12:32 p		12:40 p	12:40 p	12:42 p	12:42 p	12:42 p	12:43 p	12:42 p		
Early Precautionary Actions: Evac. London Schools; Activate Hector DCC & Atkins EWC		8:59 a		8:51 a		8:56 a	9:02 a		9:03 a	9:03 a		
1st Protective Action Decision Shelter: Evacuate: G; Schools H&I; Danville DCC		9:42 a		9:43 a		9:36 a	9:45 a	9:42 a	9:43 a	9:43 a		
1st Siren Activation				9:54 a								
1st EAS or EBS Message				See KCJC/ NWS							9:57 a	9:53 a*
2nd Protective Action Decision Shelter: Evacuate: H, I, J, K, S, T, U; Anti-C clothing, KI		10:49 a		11:17 a		11:15 a	11:23 a	11:23 a	11:21 a	11:24 a		
2nd Siren Activation												
2nd EAS or EBS Message												
KI Administration Decision:		11:16 a		11:16 a		11:15 a	11:23 a	11:23 a	11:21 a	11:24 a		

*Clock difference at NWS

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the March 15, 2000, exercise to test the off-site emergency response capabilities of State and local governments in the 10-mile EPZ surrounding Arkansas Nuclear One.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in exercise objectives contained in FEMA-REP-14, REP Exercise Manual, September 1991. Detailed information on the exercise objectives and the extent-of-play agreement used in this exercise are found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation - Table 2

The matrix presented in Table 2, on the following page, presents the status of all exercise objectives from FEMA-REP-14 which were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise objectives are listed by number and the demonstration status of those objectives is indicated by the use of the following letters:

- M - Met (No Deficiencies or ARCAs assessed and no unresolved ARCAs from prior exercises)
- D - Deficiency assessed
- A - ARCA assessed or unresolved ARCA from prior exercise
- N - Not Demonstrated (Reason explained in Subsection B)

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION

DATE AND SITE: March 15, 2000

ARKANSAS NUCLEAR ONE

JURISDICTION/FUNCTIONAL ENTITY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	30	32	33	
STATE OF ARKANSAS																										
AR STATE EOC	M	M	M	M																				M	M	M
AR DEPT. OF HEALTH – ECC	M	M		M																					M	M
AR DEPT. OF HEALTH – LAB	M			M	M																					
AR DEPT. OF HEALTH @ SEOF	M	M	M	M	M		M		M	M	M			M										M		
STATE FRMTs	M			M	M	M		M																M		
EMERGENCY NEW CENTER	M	M		M								A	M											A		
RISK JURISDICTIONS																										
POPE COUNTY EOC	M	M	M	M	M				M					M	M									M	M	M
SCHOOL BUS (2)	M			M	M											M										
T/ACP	M			M	M													M								
JOHNSON COUNTY EOC	M	M	M	M	M				M					M	M									M	M	M
LOGAN COUNTY EOC	M	M	M	M	M				M					M	M									M	M	M
YELL COUNTY EOC	M	M	M	M	M				M					M	M									M	M	M
CONWAY COUNTY EOC	M	M	M	M																				M	M	M
T/ACP	M			M	M													M								
SUPPORT ORGANIZATIONS																										
CONWAY CO. DCC - MORRILTON	M			M	M														M	M				M		
EWC - ATKINS	M			M	M																		A	M		
POPE COUNTY EMS	M			M	M																M					
ST. MARY'S AMI MEDICAL CENTER	M			M	M																		M			

LEGEND: M = Met (No Deficiency or ARCAs assessed and no unresolved prior ARCAs)

A = ARCA(s) assessed and/or unresolved prior ARCAs

D = Deficiency(ies) assessed

N = Not Demonstrated

Blank = Not Scheduled for demonstration

B. Status of Jurisdictions Evaluated

This section provides information on the evaluation of each participating jurisdiction and functional entity in a jurisdiction based format. Presented below is a definition of the terms used in this subsection relative to objective demonstration status.

- **Met** - Listing of the demonstrated exercise objectives under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.
- **Deficiency** - Listing of the demonstrated exercise objectives under which a Deficiency was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Areas Requiring Corrective Action** - Listing of the demonstrated exercise objectives under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises that remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.
- **Not Demonstrated** - Listing of the exercise objectives which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.
- **Prior Issues - Resolved** - Description of ARCAs assessed during previous exercises which were resolved in this exercise and the corrective actions demonstrated.
- **Prior Issues - Unresolved** - Description of ARCAs assessed during prior exercises which were not resolved during this exercise. Included is the reason the ARCAs remain unresolved and recommended corrective action to be demonstrated before or during the next biennial exercise.

The following are definitions of exercise issues which are discussed in this report.

- A **Deficiency** is defined in FEMA-REP-14 as "an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that off-site emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."
- An **ARCA** is defined in FEMA-REP-14 as "an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

FEMA has developed a standardized system for numbering exercise issues (Deficiencies and ARCAs). This system is used to achieve consistency in numbering exercise issues among FEMA Regions and site-specific exercise issues on a nationwide basis.

The identifying number for Deficiencies and ARCAs includes the following elements, with each element separated by a hyphen (-).

- **Plant Site Identifier** - A two-digit number corresponding to the Utility Billable Plant Site Codes.
- **Exercise Year** - The last two digits of the year the exercise was conducted.
- **Objective Number** - A two-digit number corresponding to the objective numbers in FEMA-REP-14.
- **Issue Classification Identifier** - (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise Issue Identification Number** - A separate two (or three) digit indexing number assigned to each issue identified in the exercise.

1. STATE OF ARKANSAS

1.1 STATE EMERGENCY OPERATIONS CENTER

Unannounced Off-Hours Drill

On Monday, March 13, 2000 at 7:00 p.m., an unannounced off-hours drill was conducted at the Arkansas Department of Emergency Management (ADEM) in Conway to test the alert, notification, and mobilization of key emergency staff in accordance with declaration of emergency classification levels at Arkansas Nuclear One (ANO). At 7:01 p.m., an initial notification message was received over the fax that the utility was declaring an **ALERT**. The message indicated that the "RCS activity indicates >1.0% failed fuel" concerning Unit 2.

As per the extent-of-play agreement, the ADEM Communicator demonstrated the objectives by notifying personnel required to staff the SEOC. He documented the notification time and the estimated time of arrival (ETA), from 10 minutes to 50 minutes, for personnel that would be reporting to the facility. No one was required to report for duty. It took the Communicator 15 minutes to complete the calldown and for the staff to report (call back). The drill was then terminated.

Wednesday, March 15, 2000

The ADEM is located in Conway, 50 miles from ANO. ADEM is staffed 24-hours a day; therefore, personnel were immediately available to report to the EOC for exercise duty. However, off-site State and Federal agencies were contacted by telephone for their participation in the exercise. This mobilization took about 30 minutes.

The EOC has ample space and equipment to support long term operations. A Computerized Emergency Information System (EIS) resource and mapping system was used to record all messages and to do action tracking. The information in the EIS was projected onto their screen in the front of the operation room. Staff members were provided substation summaries that contained information on declaration, evacuation, care centers, facilities, transportation, and agriculture. These were updated as changes occurred.

The Team Chief gave frequent briefings and continually conferred with staff to keep abreast of operations. The Team Chief provided direction to the staff.

The State EOC is well equipped with all necessary equipment and communication systems. The primary communication system included 32 commercial telephone lines and a dedicated fax line from ANO. All communications systems operated properly.

The State received the **NOTIFICATION OF AN UNUSUAL EVENT (NOUE)** at 8:16 a.m., the **ALERT** at 8:41 a.m., the **SITE AREA EMERGENCY (SAE)** at 10:00 a.m., and the **GENERAL EMERGENCY (GE)** at 11:06 a.m.

The shift change was adequately demonstrated at noon with no problems. All activities demonstrated at the EOC were performed in accordance with their Emergency Operations Plan (EOP) and established procedures.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 3, 4, 30, 32, and 33
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

1.2 ARKANSAS DEPARTMENT OF HEALTH

1.2.1 EMERGENCY COMMUNICATIONS CENTER

Unannounced Off-Hours Drill

An unannounced off-hours drill was held on March 13, 2000. Upon receipt of the **ALERT** message from the utility at 7:01 p.m. and in accordance with notification procedures, the Arkansas Department of Health (ADH) Emergency Communications Center (ECC) contacted the Staff Duty Officer (SDO). The SDO directed the center to notify all ADH staff and the counties in the ANO Emergency Planning Zone (EPZ). Each staff member verified their notification by calling in. The procedure was completed at 7:24 p.m. The SDO reported to the ECC at 7:47 p.m. All procedures were demonstrated in accordance with the plan and procedures. The drill was then terminated.

Wednesday, March 15, 2000

The ADH ECC is located in the State Health Department Building in Little Rock. This is a modern facility with appropriate communications equipment, including radios, computers, commercial and cellular telephones, facsimile machine, and amateur radio. The facility is manned 24-hours a day. There was adequate space, lighting, telephones, ventilation, back-up power, and other equipment necessary to support emergency operations. ECC personnel maintain an up-to-date listing of all possible agencies, organizations and personnel that they may need to contact. Access to the ECC was controlled by closed circuit TV. All systems functioned well. There were no undue delays or breakdowns. All procedures demonstrated were in accordance with the plan and procedures.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 4, 32, and 33
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

1.2.2 LABORATORY

The ADH Radiochemistry Laboratory is located in the State Health Department Building on the same level as the ADH ECC and does depend on the ECC for the majority of their communication needs. They do have commercial telephones and a fax in the lab.

The staff were at their duty stations in the lab for a normal workday at 7:30 a.m. ADH ECC would notify lab personnel of an emergency by telephone or page if not on duty. The lab personnel would be kept abreast of the situation by the ECC as necessary.

Each of the lab staff wore one thermoluminescent dosimeter(TLD), which they use daily in their routine functions, one 0-200mR dosimeter, and a personnel log to record their dosimeter reading every 30 minutes. The personnel are trained radiological chemists and knowledgeable in exposure control, exposure limits, and the person to contact if needed. The dosimeters were calibrated and leak tested in March 2000. Dosimetry and records would be turned in to the State Radiological Officer (RO) at the end of the assignment.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4 and 5
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

1.2.3 STATE EMERGENCY OPERATIONS FACILITY (SEOF)

In accordance with the extent-of-play agreement, the ADH Technical Operations Control Director (TOCD) and the State Emergency Operations Facility (SEOF) staff were pre-staged at the Nuclear Planning and Response Programs (NP&RP) offices in Russellville, Arkansas. The TOCD deployed ADH emergency teams from the NP&RP facility to their respective response areas.

At 8:12 a.m., an Arkansas Nuclear One (ANO) representative in the Control Room, contacted the TOCD and informed him that the ANO power plant had declared an **UNUSUAL EVENT (UE)**. The TOCD briefed team members on the event. The cause of the event, unexplained lake level decrease, prompted the TOCD to discuss reasons for this sudden occurrence.

Following the NOUE, the TOCD could not regain communications with the Control Room for approximately 30 minutes. The Control Room telephone was busy. Because of this, the TOCD could not obtain plant status updates.

At 8:35 a.m., the TOCD was informed of an **ALERT** at the ANO power plant. The Local Government Liaison (LGL) then contacted the risk county EOCs and the State EOC via the Dedicated Emergency Facsimile/Voice System (DEF/VS) with verification over the Nuclear Emergency Radio Network (NERN) from the console located in NP&RP facility. The TOCD briefed SEOF personnel prior to their deployment to the SEOF. During the change of command and control from the NP&RP to the SEOF, the ANO Emergency Director announced a **SITE AREA EMERGENCY** at the power plant. Official notification was at 9:46 a.m. Emergency State and county personnel were again notified by DEF/VS with verification via the NERN. In this case, the sirens were activated (simulated) from NP&RP (Confirmed by the counties at 9:54 a.m.). A State representative later demonstrated the procedure for sounding the sirens from the SEOF. The SEOF staff took control of the State emergency response functions at 9:45 a.m. At 10:50 a.m., the TOCD was informed of the declaration of a **GENERAL EMERGENCY**.

ADH personnel were co-located with ANO's Emergency Operations Facility (EOF) personnel in the Reeves E. Ritchie Nuclear Training Center near the power plant. The EOF portion of the building was constructed to shield low-level radiation with a ventilation system and backup diesel power. There was adequate space and equipment for use by the ADH and Public Information Team (PIT) personnel who were assigned to the SEOF. Each SEOF responder had access to telephones, status board information, and maps of the ANO EPZ. Access control was provided by utility security. Copies of plans and procedures were available in the SEOF.

At NP&RP, the SEOF staff had available commercial telephones, cellular telephones, two State radio networks, and facsimile machines. While in transit from the NP&RP to the SEOF, the primary mode of communications was by cellular telephones. At the SEOF, the primary communication systems were the NERN to the State and county EOCs, DEF/VS, telephone and fax machines. The two-way radio networks

were used to communicate with the State off-site Field Radiological Monitoring Teams (FRMTs). One radio net was used as the primary source of communications and the other was backup. Also, cellular telephones were available for backup. All communication systems were successfully demonstrated without malfunctions or equipment caused delays.

In accordance with the extent-of-play agreement, the TOCD performed a position change at the NP&RP. Additionally, the TOCD performed a shift change at the SEOF. The TOCD used his staff effectively. He involved his staff in the formulation of recommendations and advisories. The TOCD held discussions that included issuing KI for emergency workers, embargoing food crops, placing cattle on stored feed, and off-site radiological conditions. The TOCD, speaking for ADH, participated in all SEOF briefings. He discussed present conditions, potential future off-site problem areas, and challenged the staff to come up with solutions. The interaction of both individuals who served as TOCD with the utility EOF Director was professional. The capability to direct and control emergency operations was demonstrated by the TOCD.

At the SEOF, the ADH staff, under the direction of the TOCD, were responsible for formulating recommendations (Protective Actions Advisories - PAAs), passing these recommendations to county decision makers, and obtaining concurrence from the county judges or designees on recommendations (Protective Active Decisions - PADs). The staff then prepared EBS messages, transmitted the EBS messages to the EBS/EAS station and to the National Weather Service Forecast Office, and simulated sounding the sirens in the EPZ. Any route alerting would have been done by local authorities. The capability to coordinate the formulation and dissemination of accurate information and instructions to the public was demonstrated by ADH staff in the SEOF.

All SEOF personnel wore their normal, day-to-day issued, thermoluminescent dosimeter (TLD). Prior to deploying from the NP&RP to the SEOF, the staff obtained the following direct reading dosimeters (DRDs): two CDV-730, 0-20R, and two CDV-138s, 0-200mR. Dosimeter chargers were used to zero the DRDs before leaving the NP&RP. By interview, the DRDs were appropriately inspected for electrical leakage and the records maintained by ADH in Little Rock with a copy provided to FEMA, Region VI.

The SEOF personnel were knowledgeable of their exposure limits of 100mR per shift/200mR per day and turnback levels of 50mR total exposure or 20mR/hr. Also, there is a 5000 millirem mission limit. If a turnback level was achieved, the TOCD would be notified. In addition, the lead vehicle of the deploying SEOF team carried a CDV-700 survey instrument to monitor the radiation levels as they traveled. Once co-located in the SEOF, the staff relied on their personal TLD and the ANO staff who monitored the radiation levels within the facility to document their integrated exposure.

The plume dose projections were developed by the SEOF's Dose Assessment (DA) Team. Dose projections relating to whole body gamma exposure and iodine inhalation

exposure pathways were calculated. ANO provided the SEOF with source term release projections and meteorological data. DA used these data as input into the Radiological Assessment System for Consequence Analysis (RASCAL) computer program. The primary means for calculating dose projections from an unmonitored release was RASCAL, which was resident on a desktop computer. To calculate dose projections based on field data, DA and ANO's Dose Assessment Group (ANO-DAG) both used ANO's computer program, Radiological Dose Assessment Computer System (RDACS). As backup to RDACS, DA would use RASCAL. By interview with the DA Team Leader and the Dose Assessors, significant differences between RDACS and RASCAL are known to exist. If RASCAL was in use by DA and differences developed between the dose projections calculated by DA and ANO-DAG, actual field data would be used to determine the most correct method. The RDACS compared closely with actual field data, within a factor of 0.15. Close coordination existed between DA and the ANO-DAG. This was demonstrated by the ANO-DAG Supervisor briefing the DA Team Leader on dose assessment activities and plant status upon arrival at the EOF.

As the plant status changed and dose projections were developed, the PAAs to the county judges evolved. Following is a complete list of the PAAs and the time that they were recommended to the county judges:

PAA#	TIME	PROTECTIVE ACTION ADVISORY
1	8:37 a.m.	Alert and call in bus drivers for all schools (London, Dardanelle, Knoxville, Dover and Russellville)
2	8:51 a.m.	1. Evacuate schools in London 2. Activate the DCC in Hector and the EWC in Atkins
3	9:38 a.m.	1. Evacuate Zone G 2. Evacuate schools in Dardanelle and Russellville, Zones H, I 3. Activate DCC in Danville
4	11:05 a.m.	Activate DCC in Conway County
5	11:06 a.m.	Evacuate schools in Russellville, Zone J
6	11:16 a.m.	1. Evacuate Zones H, I, J, K, S, T, U 2. Anti-C clothing for emergency workers in Zones G, H, I, J, K, S, T, U 3. Thyroid blocking drugs for emergency workers in Zones G, H, I, J, K, S, T, U
7	11:41 a.m.	1. Place all dairy cattle and milk producing livestock on stored feed and water in all non-evacuated areas within 10-mile EPZ (Zones L, M, N, O, P, Q, R) 2. Place livestock on stored feed and water in all non-evacuated areas within the 10-mile EPZ (Zones, L, M, N, O, P, Q, R) 3. Impound until further notice, all agricultural products harvested in Zones G, H, I, J, K, S, T, U

Following the concurrence of PAA #3, it was noticed that the activation of Conway County DCC had been omitted. The addition of the Conway County DCC was then made, but the TOCD determined that the addition of the Conway County DCC to the PAA #3 could not be made after concurrence had been obtained. To resolve the problem, a new PAA (PAA #4) was issued to activate the Conway County DCC, and PAA #3 was changed back to its original wording.

Sheltering was not recommended for any areas. The areas recommended for evacuation, and concurred with by the county judges, were displayed on maps. As these areas changed, the maps were changed in a timely fashion to reflect the newest protective actions.

The capability to make timely and appropriate PAAs and to execute the approved PADs was demonstrated by the TOCD. The executed PADs included:

- Evacuate Zone G (9:49 a.m.)
- Evacuate Zones H, I, J, K, S, T, U (11:29 a.m.)
- Recommend KI for emergency workers in Zones G, H, I, J, K, S, T, U (11:29 a.m.)
- Place dairy cattle and milk producing livestock on stored feed and water in non-evacuated areas within the 10 mile EPZ, Zones L, M, N, O, P, Q, R (11:51 a.m.)
- Place livestock on stored feed and water in non-evacuated areas within the 10 mile EPZ, Zones L, M, N, O, P, Q, R (11:51 a.m.)
- Impound until further notice all agricultural products harvested in Zones G, H, I, J, K, S, T, U (11:51 a.m.)

The PAAs/PADs were based on a combination of plant status and dose projections using release estimates, meteorological conditions, and actual field measurements.

The first positive field monitoring data was received at the SEOF-DA at 12:13 p.m. Based on data provided by the field teams, DA was able to plot on a map the location of the radioactive plume. DA calculated dose projections based on maximum gamma exposure rates from plume traverses performed by ANO field teams.

Four atmospheric particulate and airborne radioiodine samples were collected at four locations. No radioactive particulates or radioiodines were detected. This indicated that the plume was primarily composed of noble gases and made it unnecessary to calculate a conversion factor to translate gamma exposure rate measurements from the plume into corresponding radioiodine concentrations.

The TOCD has the authority to recommend the use of potassium iodide (KI) by emergency workers. In consultation with his staff and because of an ongoing unmonitored release pathway, the TOCD recommended a precautionary ingestion of KI by emergency workers. Although not required, the KI recommendation for emergency workers was included in the PAA #6. This recommendation was transmitted to the county judges at 11:16 a.m., and they concurred at 11:29 a.m. Since the SEOF was habitable, ingestion of KI was not simulated in that location.

In accordance with the extent-of-play agreement, except for the Dose Assessment Team Leader and the Technical Spokesperson, all State positions in the SEOF demonstrated a shift change. A roster was available for each of the two shifts. Except for the Dose Assessment Team Leader and the Technical Spokesperson, during each shift change, the outgoing shift briefed the incoming shift on the status of all relevant completed and ongoing activities associated with the position. The shift

changes were accomplished in a manner that facilitated continuous and uninterrupted operations. Both shifts demonstrated their knowledge and experience of their emergency response roles, responsibilities, and functions.

All activities described in the demonstration criteria for these objectives were carried out in accordance with the plan, procedures, and the extent-of-play agreement. The exercise was terminated at 12:40 p.m.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 3, 4, 5, 7, 9, 10, 11, 14, and 30
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

1.3 STATE FIELD RADIOLOGICAL MONITORING TEAMS

In accordance with the extent-of-play agreement, the ADH responders were pre-positioned at the NP&RP offices in Russellville, Arkansas. The Technical Operations Center Director (TOCD) briefed all exercise participants staged at the NP&RP location following receipt of the NOUE from ANO Unit 1. In response to the lead controller's inject, the TOCD deployed the Field Radiological Monitoring Team (FRMT) personnel to the National Guard Armory following the NOUE. All FRMT personnel for teams #1, 2, 3 and 5 were present and immediately responded to the National Guard Armory, where the trailer with the field monitoring equipment kits was located. The FRMT members effectively demonstrated equipment kit inventories, instrumentation operability, source response checks, and vehicle checks. Each FRMT consisted of two members, a local sanitarian who served as the vehicle driver, and an ADH HP technician.

The capability to communicate with all appropriate emergency personnel was demonstrated by the FRMTs. Each FRMT vehicle was equipped with two radio systems and a cellular telephone. All communication systems were tested and found to be functional. In the field, occasional weak or dead spots were noted, but the FRMT members were aware of where they needed to position themselves in order to improve the radio communications link. When needed, repeat backs were requested. There were no delays in communication with Field Team Control at the SEOF.

All members of the FRMTs demonstrated their ability to monitor and control their radiation exposure. Each FRMT member was issued two low-range (0-200 mR), a mid-range (0-20 R), and a high-range (0-200 R) direct reading dosimeter (DRDs). In addition to the DRDs, each member was also issued a TLD badge. ADH personnel also had their occupational exposure TLD badges and another emergency worker TLD card. Exposure record forms were completed for each team member, which identified each DRD type and the beginning and ending readings. The DRDs were read at 30-minute time intervals, and the readings were reported to Field Team Control at the SEOF. Potassium iodide (KI) was available in the emergency kits. The KI expiration date was May 2000. At 11:51, Field Team Control directed the second shift FRMTs to take KI and don protective clothing. All members of the FRMTs were knowledgeable of the mission limits and turnback values that were in the procedures. The team members were also aware of the location of the Emergency Worker Decontamination Center in Atkins, Arkansas. The DRDs, TLD badges and exposure record forms were turned over to the Armory Staging Coordinator at the end of the shift.

All FRMTs demonstrated the appropriate equipment and procedures for ambient radiation monitoring. The FRMTs inventoried their equipment kits and conducted operability and source checks of the survey instruments. All survey instruments and equipment were found to be calibrated and operational. The equipment kits contained the low-range and high-range survey instruments specified by the plan.

Prior to deploying from the Armory, the FRMTs were given a briefing by the Armory Staging Coordinator, which included information on plant conditions, wind direction and speed, and the initial monitoring location assignments that had been received from Field Team Control at the SEOF. While en route to the initial monitoring points, the first shift FRMTs received instructions to monitor for any increase in radiation levels using their Ludlum Model 19 microR meters. All FRMTs demonstrated the ability to locate their assigned monitoring points without any delays. Open and closed window survey measurements were made at the assigned field locations and the measurements were promptly reported to Field Team Control. FRMTs #1 and #3 completed their field demonstrations before the simulated release of radioactive materials occurred. All FRMTs followed the instructions of Field Team Control. FRMT #2 was directed on a route that was parallel to the plume path and only once came into a tangential contact with the plume. This information was promptly reported to the Field Team Control. At 12:03 p.m., FRMT #5 was instructed to travel from monitoring point 5D1 to monitoring point 6E1. While traveling to monitoring point 6E1, FRMT #5 detected elevated readings on their Ludlum Model 19. The team HP then switched to the Ludlum Model 3 to check his readings.

All FRMTs demonstrated the capability to collect air samples at locations selected by the Field Team Control. FRMTs #1, #2 and #3 were directed to collect air samples in background areas. This may seem like a large number of background air samples; however, it was not due to the extent-of-play agreement with FRMTs #1 and #3 collecting their air samples prior to the time of the release.

Appropriately calibrated air sample pumps and counting instrumentation were used by all FRMTs. The air sampler flow-rate was recorded at the beginning and end of the air sample, and the average value was used to calculate the total volume. A minimum volume of 10 cubic feet was needed, and appropriate sample times were selected to assure that at least 10 cubic feet were obtained in each air sample. Air sample filter heads were pre-assembled in background areas before deploying to the field. At the field location selected by Field Team Control, the air sample heads were attached to the air sample pump and proper connections from the pump to the vehicle battery were utilized. The vehicle driver monitored the closed window survey instrument readings during the air sample collection. FRMTs #2 and #3 made open and closed window survey measurements at waist level and ground level before the start of the air sample. FRMTs #1 and #5 also conducted open and closed window surveys while the air sample was being collected. Since three air samples were collected in background areas for demonstration of the air sample collection procedure, these FRMTs simulated moving to a background area to count their air sample. FRMT #5 actually collected an air sample from within the simulated plume at location 6E1 and, as appropriate, moved to a background location, 5E2, before counting the air sample particulate filter and adsorbent cartridge. Proper methods were utilized for counting the particulate filter and adsorbent cartridge (simulated silver zeolite). The particulate filter and adsorbent cartridge were individually packaged, labeled and placed in a single bag for transport. The data sheets were properly filled out by each FRMT, and the data was reported by block number to Field Team Control.

Continuous 24-hour staffing was demonstrated by the FRMTs. FRMTs #1 and #3 were on the first shift. At the request of Field Team Control, FRMTs #2 and #3 met at location 7G1 to conduct a shift change, and FRMTs #1 and #5 met at location 5H3 for their shift change demonstration. FRMTs #1 and #3, the first shift, briefed FRMTs #2 and #5, the second shift, on the locations monitored, current meteorological conditions, the fact that Field Team Control had just announced that a release was in progress as of 10:57 a.m., and that an evacuation had been ordered for zones G, H, K and U. FRMTs #2 and #5 had already completed all equipment inventories and instrument operability checks, so the shift changes were accomplished without any interruption in the field monitoring activities.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5, 6, 8 and 30
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

1.4 EMERGENCY NEWS CENTER

The ANO Emergency News Center (ENC) demonstrated the ability to fully alert and mobilize personnel for emergency operations. Members of the Public Information Team (PIT) were either pre-staged in Russellville or were at their normal business location in the Arkansas Department of Health Nuclear Planning and Response (NP&RP) building in Russellville prior to the start of the exercise. A **NOTIFICATION OF UNUSUAL EVENT** (NOUE) was received by the PIT via pager at 8:15 a.m. The team promptly prepared to dispatch to the ENC, arriving at the ANO facility at 8:50 a.m. The ENC was operational by 9:05 a.m.

Located at ANO's Reeves E. Ritchie Nuclear Training Center, the facilities and equipment available to the ENC are sufficient to support its operations. Security to the facility was established and maintained throughout the exercise. Members of the media were restricted to a limited area of the ENC, primarily their workroom and the main briefing room. Lighting, space, restrooms and other facilities as well as computer, copiers and other equipment were adequate to support emergency activities.

An events and documents log that recorded all actions taken by the PIT was maintained by the assistant to the PIO during both shifts. Status boards were available in the adjacent SEOF room and were updated by the utility and other (non-PIT members) ADH personnel. A copy of the ENC plan was available for use by the PIT. Visual displays at news conferences were excellent, with colored maps and detailed zone information – matching graphics in the press kits – displayed on screens for the press.

The capability to communicate with all appropriate emergency personnel was adequately demonstrated. The ENC staff had several communications systems available for its use. The systems included dedicated commercial telephone lines, local government radio, fax machines, and a computer link. Telephone was the primary communication system with the other systems as backup. Both primary and backup systems were demonstrated with no breakdowns or delays. The ENC had 17 commercial telephone lines for its staff, and there were 5 active and 45 backup telephone lines available for news media personnel in their workroom.

Entergy's Communications Manager (CM) has overall responsibility for ENC operations. Under this arrangement, the utility's staff report to the CM, and they interface with the media and the public as representatives of both the utility and the State. The CM and the ADH Public Information Officer (PIO) share an office immediately adjacent to the SEOF, an arrangement that facilitates sharing of information between them and with SEOF staff. A PIT EOF liaison served as the primary link between the two staffs. The liaison was able to rapidly alert the State PIO to decisions being considered so that news releases could be drafted and made ready for approval when decisions were finalized and preparations could be made for news conferences.

Seven news releases were prepared by the PIT team (both shifts) during the exercise, including one prepared at 8:35 a.m. at the NP&RP building prior to ENC activation. All

were prescribed as electronic files, requiring only inserting the correct information, before being presented for approval. All had correct information and were issued in a timely manner and were made available to the media at the News Center.

Two news conferences emceed by the CM were held with spokespersons from ADH and Entergy. Substantive pre-briefings were held in the "Green Room" to establish the agenda and coordinate content. The first briefing (with the first shift) began at 10:21 a.m. and mainly covered plant conditions and the precautionary evacuation of Zone "G." The second briefing (second shift) began at 11:53 a.m. and provided complete and detailed information about the additional evacuation zones including zone descriptions, routes, and location of reception centers.

PIT procedures, Section D, state that "Informational briefings will be held to inform members of the media of NOAA/Local Broadcast Station messages and their contents following their dissemination to the public." This occurred for all such messages except EBS message G-1 which was broadcast at approximately 12:05 p.m. (the message was not time-stamped). This message read, in part, "All persons residing in non-evacuated zones (L, M, N, O, P, Q, and R) and within 10 miles of Arkansas Nuclear One should remain indoors with heat or air conditioning on as needed." Although this EBS message was available to PIT staff while a news conference was underway and it was posted in RC at 12:10 p.m., neither a hard copy nor its content were provided to the press. As a result, this remains a recurring ARCA from the 1998 exercise.

The capability to establish and operate rumor control in a coordinated and timely manner was adequately demonstrated. The Communications Manager activated the rumor control (RC) office in the ENC at 9:05 a.m. At 9:20 a.m. the RC staff consisted of six operators, two managers and one recorder. The rumor control number (501) 968-7171 is listed in the Emergency Instructions Booklet distributed to residents in the 10-mile EPZ and included in the local telephone directory along with an EPZ map. During this exercise, it was included in press releases and announced at the media briefings. This number normally rings at NP&RP. During exercises and emergencies, it rings at the RC Office. This number is automatically routed to numbers 7864 through 7870 sequentially which are answered by the RC operators.

All ADH, Entergy and EBS messages were promptly posted and distributed in the RC Office except the first EBS message, which was not received in the RC office until 11:46 a.m. EBS #2 was posted at 11:50 a.m. and EBS G-1 was posted at 12:10 p.m.

The first RC call was received at 9:43 a.m. and the last at 12:43 p.m. The six operators received 335 calls during the 3 hours for an average of 110 per hour or 19 per hour for each operator.

The telephone inquiries were properly recorded and were correctly categorized and analyzed. Media inquiries were also tracked and analyzed as a separate category by subject matter. This information was posted on a wall chart for analysis. Due to the crucial nature of some calls, the subject and rumor were immediately brought to the attention of the CM for his inclusion in press briefings and news releases. These included rumors of: (1) a meltdown of

the plant. (2) the Associated Press requesting information on the 30 deaths at the plant from a fire, and (3) a premature announcement by a local radio station that a General Emergency had been declared at the plant. Other inquiries of a general nature that appeared to indicate a trend were also addressed during press briefings. These included: radiation exposure concerns, plant conditions, the handling of agricultural products and animals, and concerns about family members. Hourly rumor control summaries were prepared and made available to PIT and Entergy PIOs to assure that trends or incorrect rumors would be addressed at news conferences. As a result of excellent rumor tracking, the ARCA #01-98-13-A-02 from the previous exercise was resolved.

Two RC section staff members monitored radio and television broadcasts to determine whether accurate information was being broadcast by the media. Close liaison was maintained between Media Monitoring and Rumor Control. The CM gave frequent briefings to the Rumor Control staff, and information from the News Center staff was brought to the attention of RC staff by the CM.

Continuous 24-hour staffing was partially demonstrated by the ENC staff through a shift change of most personnel. Following the completion of the first news conference, the members of the first shift PIT met with the second shift team to provide them with a detailed briefing of the incident events and the actions they had taken in response. Procedures were discussed and reviewed. The first shift remained available in the ENC until the second shift was comfortable with the operation.

The Rumor Control staff initiated a staggered shift change at 10:35 a.m. All nine positions changed personnel except for the recorder. The outgoing staff provided detailed and comprehensive briefings to the incoming staff. The shift change was complete by 11:30 a.m. The extent-of-play agreement required that all first-shift personnel be replaced. Since one position was not replaced, a full shift change should be demonstrated at the next exercise.

The exercise terminated at 12:40 p.m.

In summary, the status of FEMA exercise objectives at this location is as follows:

- a. **MET:** Objectives 1, 2, 4, and 13
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 30

Issue Number: 01-00-30-A-01

Description: The recorder position in the Rumor Control did not shift change as required by the exercise objectives and extent of play agreement.

Recommendation: Shift change of all personnel in the Rumor Control Center should be demonstrated.

d. **NOT DEMONSTRATED: NONE**

e. **PRIOR ISSUES RESOLVED:**

Issue Number: 01-98-13-A-02

Rumor calls insufficiently recorded and analyzed to reveal and address trends and false rumors.

Correction: The telephone inquiries were properly recorded and were correctly categorized and analyzed. Media inquiries were also tracked and analyzed as a separate category by subject matter. This information was posted on a wall chart for analysis. Due to the crucial nature of some calls, the subject and rumor were immediately brought to the attention of the Communications Manager for his inclusion in Press Briefings and News Releases. These included rumors of: 1.) a meltdown of the plant; 2.) the Associated Press requesting information on the 30 deaths at the plant from a fire; and 3.) a premature announcement by a local radio station that a General Emergency had been declared at the plant. Other inquiries of a general nature that appeared to indicate a trend were also addressed during press briefings. These included: radiation exposure concerns, plant conditions, the handling of agricultural products and animals, and concerns about family members.

f. **PRIOR ISSUES UNRESOLVED: Objective 12**

Issue Number: 01-98-12-A-01

Messages were not distributed.

Description: Neither hard copy nor the content of one EBS message was provided to the press. PIT procedures, Section D, state that "Informational briefings will be held to inform members of the media of NOAA/Local Broadcast Station messages and their contents following their dissemination to the public." This occurred for all such messages except EBS message G-1 which was broadcast at approximately 12:05 p.m. (the message was not time-stamped). This message reads, in part, "All persons residing in non-evacuated zones (L, M, N, O, P, Q, and R) and within 10 miles of Arkansas Nuclear One should remain indoors with heat or air conditioning on as needed." Although this EBS message was faxed to the ENC while a news conference was underway and it was posted in Rumor Control at 12:10 p.m., neither a hard copy nor its content was provided to the press. (The remainder of this ARCA - failure to track events on the "Events and Documents Tracking Log," - was fully demonstrated and is resolved.)

Recommendation: PIT staff should receive additional training to assure that all procedures regarding message distribution are followed.

2. RISK JURISDICTIONS

2.1 POPE COUNTY

2.1.1 EMERGENCY OPERATIONS CENTER

Unannounced Off-Hours Drill

On Monday, March 13, 2000, an unannounced off-hours drill was conducted at the 911 Warning Point for Pope County in Russellville, Arkansas. A strobe light alerted the 911 staff that a dedicated fax was coming in from the ANO plant. The fax was received at 6:58 p.m. indicating an **ALERT** was declared at ANO. A confirmation call was received on the dedicated telephone two minutes later to verify the fax had been received. The Pope County Emergency Operations Center (EOC) is located in an adjoining room to the 911 Center where there is a dedicated fax and telephone to ANO that received the same message simultaneously.

The four Communications Officers divided the calldown list to expedite mobilization. By 7:05 p.m., calls had been completed to the Emergency Management Coordinator, Pope County Judge, Pope County Sheriff, Russellville Fire Chief, Russellville Police Chief, Pope County EMS, and the Coordinator of the 14 Rural Fire Departments. They were unable to contact the Mayor. The Coordinator arrived at 7:10 p.m. and discussed what procedures he would then follow. He would make additional calls as necessary from a roster. The drill was completed efficiently with no problems.

Wednesday, March 15, 2000

At 8:07 a.m., an attempt was made by ANO to send a fax over the dedicated line to the 911 Center. The dedicated telephone rang, but no contact was made. The verification telephone call on the dedicated line was received at 8:10 a.m., which revealed that the second fax attempt had been made and not completed. A third attempt was made over the regular fax machine and completed at 8:16 a.m. to alert Pope County that an **UE** had occurred at ANO.

An immediate calldown from a roster was begun to mobilize the EOC. Following the NOUE, the staff and times alerted were: Pope County Judge, 8:19 a.m.; Pope County Sheriff, 8:21 a.m.; Chief Deputy, 8:24 a.m.; EOC staff, 8:22 a.m. by pagers; Mayor of Russellville, 8:25 a.m.; Pope County Rural Fire Departments, 8:27 a.m., and Russellville Fire Department at 8:28 a.m. The Communications Officer making the calls was very efficient and when a Fire Department put her on hold, she had the Secretary pick up the line and handle that call while she continued her calldown. The building had tight security, remained locked, and admittance was monitored and screened by camera in the 911 Center.

The Pope County EOC is an excellent example of an efficient and adequately equipped EOC. Personnel continually strive to improve operations and streamline procedures to achieve the best emergency operation possible. At least two suggestions for improvement from the last exercise were implemented and added to this operation. Plastic covered hooks were installed

on unused door space to hang display boards where current information was easily posted. A large map was attached to a magnetic backboard and magnets of various shapes and colors were posted to indicate road closures, T/ACPs, and evacuation routes. It was easy to see from any point in the room and very easy to update. Use of the map was dedicated to the Russellville Fire Department, Rural Volunteer Fire Departments, Pope County Sheriff's Department, Russellville Police Department and the Pope County EMS. Another excellent improvement was the events log. The Communications Officer maintained significant events by entering the data in a computer that was projected on two overhead monitors, and this information was easily read from any location in the EOC. The permanent record/log could be scrolled as needed for information and a hard copy printed out, thus eliminating hand posting on status boards.

The telephone system was more than adequate with six permanent lines into the Operations Room and four additional lines in adjoining office space. Dedicated facsimile machines as well as other facsimile machines are available. Copy machines and computers with printers were available in the adjoining office space. There was excellent lighting, kitchen, and restroom facilities. CORD-Minders had been installed in the ceiling above each designated telephone position, thus eliminating the need to raise and lower ceiling tiles to drop or replace telephone lines. Additionally, every telephone was labeled for its respective position. For easy identification, the EOC workers wore cloth armbands indicating their respective role in the EOC. To ensure accountability of those present, diligence was used in tracking the sign-in roster.

At 8:34 a.m., a fax was received in the 911 Center and the EOC of an **ALERT** Emergency Classification (EC). The first Protective Action Advisory (PAA) #1 recommending alerting all school bus drivers was received at 8:39 a.m. There was a round-robin briefing at 8:40 a.m. to update the Coordinator of the current status of each agency's actions. PAA #2 was received at 8:56 a.m. recommending evacuation of London Schools and activation of the Hector DCC and Atkins EWC (Protective Action Decision {PAD} #1). The DCC and EWC were staffed (simulated) by 10:30 a.m.

After the County Judge arrived, the Pope County EOC was declared fully staffed by 8:55 a.m. and operational by 9:01 a.m. Active play was demonstrated by all present. Several of the departments were represented by first-time participants in a radiological exercise. They were all very well informed on their roles and responsibilities.

Direction and control was excellent on both shifts with great teamwork and sharing of information. As information was passed to the Coordinator, he would brief the entire group in a clear, precise, detailed manner. Everyone in the room gave him their uninterrupted attention, placing all communication on hold.

At 9:30 a.m., the controller implemented the shift change. The shift change was staggered, included thorough briefings on the occurrences and activities associated with the event, and did not interrupt the flow of work or disturb the other represented agencies. The extent-of-play agreement required all key positions to complete the shift change: Emergency Management Coordinator, County Judge, County Sheriff, County ADEM Coordinator,

Radiological Officer, and Communications Officer. Participation was to be commended as several additional individuals also completed a shift change that was accomplished by 10:25 a.m.

The first-shift Radiological Officer placed three dosimeters in the EOC for group readings. These were read periodically. An adequate supply of dosimeters and KI were kept at the EOC for emergency workers. The expiration date for the KI is May 2000, so the RO made a note to obtain a new supply.

PAA #3 recommending evacuation of Zone G and Russellville Schools in Zones H and I was received at 9:36 a.m. Both the Mayor and County Judge concurred with the other counties to implement the evacuation (Protective Action Decision #2). The sirens were activated by the State. Route alerting was also implemented (simulated) in the county. Pope County EMS handled the identified ten special needs individuals. EMS would transport all the identified special needs residents with their six ambulances and one rescue unit.

An SAE notification was received at 9:53 a.m., EC #5. At the SAE, Arkansas Game and Fish and Pope County Marine Rescue were contacted and sheltering of the nursing homes and St. Mary's Hospital was recommended.

At 10:00 a.m., the County Judge completed the form for a Disaster Emergency Proclamation which was forwarded to the Arkansas Department of Emergency Management in Conway. The information was given verbally by the Communications Officer over the telephone, then a hard copy was faxed.

PAA #5 was received at 11:05 a.m. recommending evacuation of schools in Zone J. PAA #4 was only sent to Conway County as it was an omission of the activation of the Conway County DCC from PAA #3.

At 10:58 a.m., Entergy's EC #7 preceded PAA #6 at 11:15 a.m., notification of a **GE**. Officials delayed concurring on the recommendations until the official PAA from ADH was received. PAA #6 recommended evacuation of Zones H, I, J, and K. Emergency workers were recommended to wear anti-C clothing and take thyroid blocking drugs (KI) in Zones G, H, I, J, and K. The County concurred. The EMS, Fire Departments, and Sheriff Department promptly notified their workers in the affected zones to take KI. The Communications Officer computed the estimated time to complete evacuation per affected zone for a weekday with normal weather conditions as follows: Zone G - 160 minutes; H - 220 minutes; I - 280 minutes; J - 150 minutes; and K - 190 minutes.

At 11:45 a.m., PAA #7-Agricultural was received. It recommended non-evacuated areas within the 10-mile EPZ (L, M, N, O, P, Q, and R) place all dairy cattle and livestock on stored feed and water. Additionally, all agricultural products harvested in Zones G, H, I, J, K, S, T, and U would be impounded until further notice.

The exercise terminated at 12:42 p.m.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 3, 4, 5, 9, 14, 15, 30, 32 and 33
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

2.1.2 SCHOOL BUS DRILL - DOVER MIDDLE SCHOOL

The drill for Dover Middle School was held out-of-sequence and at a predetermined time. The office of the Transportation Director of Dover School District is located at the District Administration Office adjacent to the campus of the Dover Schools. The telephone call from the Arkansas Department of Health, Nuclear Planning and Response Programs (ADH NP&RP) office came to the Dover School District Administration office at 8:54 a.m. The Protective Action Decision (PAD) was to evacuate the Dover Schools. The Transportation Director verbally advised the District Superintendent and his Secretary of the decision to evacuate. The Transportation Director radioed the bus shop and advised the shop mechanic to dispatch the busses. The Superintendent called the Middle School and advised them to prepare the school for evacuation.

The bus mechanic issued dosimetry with a log/instruction sheet. Dosimetry consisted of a CDV-138 (0-200mR), a CDV-730 (0-20R), and a TLD. The dosimeters, blank logs and a charger are kept locked up at the bus shop. The calibration and maintenance of the dosimetry equipment is performed by the ADH. The driver was briefed by the mechanic on the evacuation route and the use of the dosimeters.

Communication with the busses is via 2-way radio in each bus with a base station at the bus shop. After documenting the initial dosimeter readings, the bus driver drove the bus to the Middle School to simulate the evacuation from that school. The school district's plan calls for the principal of each school to supervise the complete evacuation of all students, teachers and staff from their building. A minimum of two teachers are to ride each bus. The district has adequate busses to transport all evacuees in one trip. The bus traveled to the Designated Care Center (DCC) at Hector High School arriving at 9:30 a.m. The driver was completely familiar with the prescribed route. At Hector, the driver described how the evacuees would be handed off to the DCC personnel and how the bus would be checked and parked. The driver radioed to the district base station that the bus had arrived at Hector. The driver read and logged her dosimeters and would turn them over to the radiological team at the DCC for closure.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5, and 16
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

2.1.3 SCHOOL BUS DRILL - RUSSELLVILLE HIGH SCHOOL

This exercise was played out-of-sequence at a predetermined time. The call from the ADH NP&RP was received at the Russellville High School (RHS) Principal's office at 12:58 p.m. The Assistant Principal is assigned as the primary focal point for emergency preparedness and took the call. The simulated PAD was for evacuation of the school. The Assistant Principal immediately called the bus barn, which is located at the District Central Office, and advised the Transportation Director to dispatch the bus to RHS for evacuation. The Assistant Principal also advised the other Principals and office staff verbally of the intent to evacuate. The bus arrived at RHS at 1:08 p.m. The normal evacuation plan at RHS is carried out with the use of student and staff privately owned vehicles. There were adequate private vehicles present to successfully effect the evacuation. For this drill, a school bus was dispatched to evacuate two wheelchair bound students. The Assistant Principal gave verbal instructions on the evacuation route to the relocation center.

The Assistant Principal also provided dosimeters and a log/instruction sheet to the bus driver. The supply of dosimeters, maps and log/instruction sheets are kept in the Assistant Principal's office. The Assistant Principal and the driver both read the dosimeters, and the driver entered the readings on the log sheet. Dosimetry consisted of a CDV-138 (0-200mR), a CDV-730 (0-20R), and a TLD. The Assistant Principal advised the driver of the maximum radiation dose as noted on the dosimeter instruction sheet.

The school bus was equipped with a 2-way radio with a base station at the bus barn. Communication between the bus and the base station was successfully demonstrated at RHS and at the DCC at Morrilton. The bus traveled to the care center at Morrilton arriving at 1:50 p.m. The driver described where the students would be released to the DCC. The driver read and recorded the dosimeter readings at Morrilton High School. The driver read and logged his dosimeters and would turn them over to the radiological team at the DCC for closure.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5, and 16
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

2.1.4 TRAFFIC/ACCESS CONTROL POINT

This activity was demonstrated out-of-sequence.

The representative for the Sheriff's Department telephoned the Deputy to report to the EOC for the demonstration of the T/ACP. Pager, cellular telephone, and 2-way radio communications were also available for utilization.

The second-shift Radiological Officer thoroughly briefed the Sheriff's Deputy on the use of the dosimeters, ensured that the dosimeters had been charged, and discussed the importance/use of KI. The RO inquired if the Deputy had any questions or concerns prior to his departure to distribute them.

In setting up a T/ACP, the Deputy simulated the procedures for stopping incoming traffic into restricted zones; controlling and directing the evacuating traffic to appropriate Reception Centers; and the use of markers, barricades, flares, and signage. The Sheriff's Deputy was very knowledgeable of the importance of his role, where to go, alternate routes, and how to instruct on the use of the dosimeters and KI. The Deputy also demonstrated on a large map the designated routes and alternate routes. T/ACPs were established at the intersections of Highway 333 and Highway 7, I-40 and the Johnson County line, and Highway 64 at Pottsville.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objective 1, 4, 5, and 17
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

2.2 JOHNSON COUNTY EMERGENCY OPERATIONS CENTER

Unannounced Off-Hours Drill

An unannounced off-hours drill was conducted on March 13, 2000 at 7:00 p.m. at the Johnson County Sheriff's Department/Warning Point. Upon the arrival of the FEMA evaluator at 6:48 p.m., the Dispatcher began the calldown and notification of employees of an incident at ANO. The Dispatcher did not wait for the fax to be received from the utility; therefore, there was no knowledge that ANO had an incident or what procedure should be followed according to the ECL notification. Subsequently, at 7:05 p.m., a fax was received from the utility. The notification from the utility advised Johnson County of an **ALERT** at the utility; no protective actions were recommended. At 7:08 p.m., the Emergency Management Coordinator notified the County Judge of the incident. The calldown was complete at 7:08 p.m. The Emergency Operations Center (EOC) employees provided their estimated time of arrival. The drill was then terminated.

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The Johnson County EOC is located in the basement of the Johnson County Courthouse in Clarksville. The EOC has adequate space with a large operations room and separate PIO and Communications rooms. The facility also has an adjacent kitchen area and restrooms. Backup power is available from an auto-start generator that is tested weekly. A total of five telephone lines are available to the staff in the EOC. A copier and word processor are also available to the staff. The EOC has several displays and status boards that are hanging in an area visible by all staff. Status boards were updated promptly during the exercise, almost instantaneously after receiving updated information from the State or utility. The Johnson County Radiological Response Plan as well as the State's Response Plan is available to the staff in the EOC. Access to the EOC was controlled by locking all access doors except the EOC entrance. This door was guarded by a Sheriff who only allowed authorized staff to enter.

Johnson County received initial notification of the **UE** from ANO at 8:16 a.m. via a dedicated fax that is located in the County's Warning Point/911 Center. Immediately, the Dispatcher on duty notified the Emergency Management Coordinator of the situation. Once the Coordinator arrived at the EOC, all notifications were received via the dedicated fax in the EOC. At 8:46 a.m., the Coordinator received notification of the **ALERT**. At that time, he requested that the Communications Officer notify all personnel to report to the EOC. The EOC staff were contacted via telephone. The EOC was fully activated by 8:56 a.m. Staff that reported to the EOC included the Deputy Coordinator, County Judge, Sheriff, Radiological Officer, and Message Center personnel. The EOC received notifications of **SAE** and **GE** at 9:58 a.m. and 11:05 a.m., respectively.

The first shift Deputy Coordinator and the second shift Coordinator, in conjunction with the County Judge, were in charge of the emergency response. The Coordinators provided several briefings to their staff to keep them up-to-date on conditions at the plant. They supervised staff who were in charge of retaining message logs for incoming and outgoing

messages and transmissions. On several occasions, the Coordinators called for verification of information received from the plant.

Several types of communication equipment were available in the EOC which included commercial telephone, dedicated telephone, dedicated fax line, Nuclear Emergency Radio Network (NERN), amateur radio, hi-band radio, and low-band radio. Important exercise transmissions were conducted via the NERN or the dedicated fax line. Johnson County EOC staff were able to communicate with ANO, ADH, and all other county EOCs. The organization was able to communicate with other organizations without major breakdowns; however, several times during the exercise the Communications Officer had trouble interpreting the messages received on the NERN radio. The message transmissions were "breaking up." Backup systems were demonstrated and functioned properly.

Staff at the EOC would not be issued radiological equipment since the EOC is located outside the 10-mile EPZ. In the event it was necessary to dispatch emergency workers into the field, the RO would distribute radiological equipment to those individuals. Each emergency worker would be issued a TLD and three direct-reading dosimeters (one CDV-138, 0-200mR; one CDV-865, 0-1.5R; and one CDV-730, 0-20R). Records would be made of all equipment that was issued and workers would receive a record form to document all readings. The Radiological Officer would issue instructions to each worker on how to read dosimetry and how often to take readings (i.e., every 30 minutes). The RO was familiar with exposure limits and turnback values.

If necessary, emergency workers would be issued KI by the Radiological Officer. Workers would be made aware of the potential need to take KI, and sufficient quantities of KI (100 bottles) were stored and available at the EOC. The bottles had an expiration date of May 2000. Upon issuance, workers would receive instructions on reasons for taking KI, dosages and possible side effects. PAA #6 included a recommendation to administer KI to emergency workers in Zones G, H, I, J, K, S, T, and U. None of these zones are in Johnson County; therefore, no action was taken.

Seven Protection Action Advisories (PAAs) were received from the ADH during the exercise. The Deputy Coordinator and Coordinator, in consultation with their staff and County Judges, concurred on all of the PAAs. Even though the direction of the plume was not toward Johnson County, the Coordinators showed great forethought and placed field staff on standby. Initial Protective Action Decision (PADs) were based on plant conditions and PAAs provided by the State. Johnson County EOC staff coordinated with other jurisdictions as part of the protective action decision-making process.

The EOC staff had access to an up-to-date (March 1, 2000) list of special needs citizens in the County. The list included individuals that need ambulance transportation, individuals that are transportation dependent, and individuals that require special notification. The Deputy Coordinator explained that in the event that assistance was needed, volunteer staff would either make actual visits to the homes of special needs individuals or make contact by telephone. Sufficient resources were available in the County to support assistance to special

needs individuals. Per the extent-of-play agreement, the EOC staff did not have to make actual contact with special needs individuals or resources.

Shift changes were demonstrated for the following positions: Coordinator/Deputy Coordinator, County Judge, Communications Officer, Radiological Officer, and Sheriff. All key functions were staffed for both shifts. All outgoing staff thoroughly briefed incoming staff on the situation at ANO. Both shifts demonstrated adequate knowledge of their roles and responsibilities. The shift changes were demonstrated in a manner that facilitated continuous, uninterrupted operations.

The exercise terminated at 12:45 p.m.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 3, 4, 5, 9, 14, 15, 30, 32 and 30
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

2.3 LOGAN COUNTY EMERGENCY OPERATIONS CENTER

Unannounced Off-Hours Drill

An unannounced off-hours drill was held on the evening of March 13, 2000. The **ALERT** message was received by fax at the Warning Point (Logan County Sheriff's Office) at 7:02 p.m. Dispatch personnel on duty were initially confused, but at 7:05 p.m., they did make the correct notification to the Logan County Emergency Management Coordinator. The Coordinator was attending a Quorum meeting at the County Courthouse, which is also the location of the County EOC. He indicated that he would immediately go to the EOC that is located in the basement of the County Courthouse. He arrived at the County EOC at approximately 7:07 p.m. and began notifying other EOC staff. Evaluators re-located from the Warning Point to the Logan County EOC. The Coordinator, although encountering some difficulty, utilized telephone, cell telephone and radio communication to reach EOC staff with one exception, the County Judge or his back-up. An ETA to the EOC was obtained from each staff member (other than the County Judge). According to the estimated ETAs, all staff would have arrived at the EOC no later than 8:30 p.m. The Evaluators noted that the Coordinator's roster was up-to-date, but that the roster at the Warning Point was missing two changes. The drill was terminated after completion of the calldown.

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The Sheriff's Dispatcher at the emergency Warning Point received a **NOUE** from ANO by fax from the utility at 8:13 a.m. Dispatch personnel immediately contacted the Logan County Emergency Management Coordinator. Verification of the fax was accomplished by telephone call from the plant on the dedicated telephone line. The Coordinator immediately began to contact EOC staff members, and by 8:25 a.m., all had been notified and requested to report to the EOC. At 8:52 a.m., the TOCD was notified that the EOC was fully operational with all essential positions staffed.

The Logan County EOC is located in the basement of the County Courthouse in Paris, Arkansas. It is a dedicated facility that also serves as the office of the Logan County Emergency Management Coordinator. It is small but has adequate space, furnishings, lighting, restrooms, ventilation, and backup generator power to support emergency operations. Maps and displays available included the plume EPZ with protective action zones, evacuation routes, monitoring points, population data, emergency classifications, the Designated Care Center for Logan County, and weather data. The status board was immediately updated with key events during the exercise. Security was provided by access being controlled at the front door with appropriate ID required for entrance into the EOC.

The County Judge and the Coordinator provided excellent direction and control during the exercise. Briefings were held every 30 minutes and staff input was requested during these briefings. Coordination with other organizations was also appropriately demonstrated. Although the exercise scenario did not require extensive play for the Logan County EOC, the process for making informative decisions with input from key EOC staff was clearly demonstrated.

The EOC had two commercial telephone lines, the NERN, the ADH direct telephone line, four radio frequencies and cellular telephones. A fax machine was also available and both the fax and radio served as the primary means of communication. All systems functioned well during the exercise. Every incoming and outgoing communication was logged and shared with the EOC staff as necessary.

The Radiological Officer (RO) was very knowledgeable regarding emergency worker exposure control and the procedures and equipment available at the EOC and in the field kits. The field kit given to a Sheriff's Deputy (who simulated staffing of a Traffic/Access Control Point) included a TLD, two direct-reading pocket dosimeters, (0-200 mR and 0-20 R) and KI. The kits also included instructions for the use of dosimetry and KI, including the side effects of KI and when to ingest KI. Instruments were properly prepared and zeroed prior to issuance. The briefing provided to the Sheriff's Deputy included the use of dosimetry, KI, exposure limits, and instructions to read dosimeters every 30 minutes. The RO also placed dosimeters in the EOC to monitor any potential exposure to EOC staff.

The notification of **ALERT** was received at 8:42 a.m. and verified at 8:43 a.m. The **SAE** was received at 9:59 a.m. and verified at 10:00 a.m. The **GE** was received at 11:05 a.m. and verified at 11:06 a.m.

Continuous 24-hour staffing was demonstrated by a shift change during the exercise. In accordance with the extent-of-play, the positions of the County Judge, the Coordinator, the Sheriff, the Radiological Officer, and the Communications Officer were included in the shift change. The incoming shift personnel were briefed by outgoing staff and a roster of both shifts was maintained. Both shifts were knowledgeable of their duties and responsibilities.

At 11:51 a.m., the EOC received PAA # 7 which recommended that all non-evacuated areas within the 10 mile EPZ, which included Zones Q and R in Logan County, place dairy cattle and milk producing livestock on stored feed and water and impoundment of all harvested agricultural products. The County Judge concurred with this recommendation and initiated appropriate action.

Although evacuation was not recommended for Logan County, EOC staff took precautionary measures related to the special needs populations. Simulated calls were made to these populations and to Fire Department personnel for coordination of evacuation should this become part of the scenario.

In summary, staff at the Logan County EOC were knowledgeable of their responsibilities and demonstrated them in an excellent manner during the exercise.

The exercise terminated at 12:42 p.m.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 3, 4, 5, 9, 14, 15, 30, 32 and 33

- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES RESOLVED: NONE
- f. PRIOR ISSUES UNRESOLVED: NONE

2.4 YELL COUNTY EMERGENCY OPERATIONS CENTER

Unannounced, Off-Hours Drill

On Monday, March 13, 2000, an unannounced off-hours drill was conducted at the Yell County Law Enforcement Warning Point in Danville, Arkansas. The drill was initiated at 7:00 p.m. with an **ALERT** notification from ANO. The Duty Officer immediately notified the Emergency Management Coordinator who gave an estimated time of arrival (ETA) of two minutes. The Coordinator requested that the Duty Officer notify the Sheriff, County Judge, Communications Officer, and Radiological Officer (RO). The Coordinator, along with several key personnel, was at a Quorum Court in the same building as the Warning Point, and the notifications were made within a few minutes. The Coordinator arrived at the Warning Point at 7:03 p.m. By 7:10 p.m., all key personnel had been notified. The Coordinator picked up the notification and opened the Emergency Operations Center (EOC). Having already notified all key staff, the Coordinator simulated notifying the State of Arkansas that the EOC was activated, and the drill was terminated.

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The Yell County EOC is located at 114 E. Fifth Street, Danville, Arkansas. The EOC is co-located in a building with three other agencies. The designated space for the EOC is one large room for operations with a small communications room. The EOC possesses sufficient space, lighting, restrooms, and ventilation to support emergency operations. If backup emergency power is needed, the county possesses stand-by generators, located at the fire departments, which are regularly tested. Status boards were updated promptly. The EOC has three separate event logs: one for Yell County, one for the City of Danville, and one for the City of Dardanelle. Labeling each of these event logs with the name of the jurisdiction would help everyone in the room easily identify the events for that jurisdiction. Facilities are adequate. Obtaining a large map of the county that displays the cities, zone boundaries, and major highways would be helpful. This map could be used to post traffic control points, reception centers/shelters, and would be a helpful visual aid to all representatives in the EOC. A copy of the Yell County Emergency Plan was available at the facility. Access to the facility was controlled.

The Warning Point is located in the Yell County Law Enforcement Building in Danville. The Warning Point received the **NOUE** (EC #1) from ANO via facsimile from the utility at 8:16 a.m. Upon receipt of the notification, the Dispatcher immediately began the calldown via telephone using the Emergency Drill Call Down List. At 8:18 a.m., the notification was faxed to the EOC. The Emergency Management Coordinator began activation of the EOC at 8:18 a.m., and the EOC was declared operational at 8:50 a.m. In addition to the Coordinator, the EOC staff included: Yell County Fire Control, Yell County Judge, Mayor of Danville, Danville Police Chief, Mayor of Dardanelle, Yell County Sheriff, Dardanelle Police Chief, and the Radiological Officer.

Yell County demonstrated the ability to communicate with all appropriate emergency personnel. The Yell County EOC is equipped with seven commercial telephone lines,

cellular telephones, a radio system, and a fax machine. The NERN radio system provides a direct link to ADH. As stated in the 1998 Exercise Report, and again during this exercise, the NERN system was not audible during most of the exercise. The Communication Officer requested ADH repeat information several times during the course of the exercise. There is a dedicated fax and telephone to the SEOF. An individual from RACES was present during the exercise and had the capability to communicate with care centers, police, other counties, fire departments, and the emergency worker center.

The notification of an **ALERT** (EC #2) was received from the utility at 8:42 a.m. The Emergency Coordinator briefed the EOC staff on the status of the incident. At 9:03 a.m., Protective Action Advisory (PAA) # 2, advising of the evacuation of London Schools and requesting activation of Hector DCC and Atkins EWC, was received. The EOC staff noticed they received PAA #2 before PAA #1. They immediately called the State, via NERN radio, to have PAA #1 faxed to them. PAA #1 was received at 9:12 a.m.

The Radiation Officer (RO) placed group dosimetry in the EOC. A listing of calibration dates and a computer printout listing inspection dates of the last electrical leakage test were available for verification from ADH. Direct reading dosimetry (0-1.5R, 0-20 R, and 0-200mR) was available for issue to Traffic/Access Control Point (T/ACP) emergency workers. A record would be made of the dosimeter numbers assigned to each emergency worker. The RO was knowledgeable and would brief and instruct emergency workers about their dosimetry when issued. The dosimeters were charged and zeroed by the RO upon his arrival at the EOC. TLDs were also available for distribution. The dosimeters would be turned over to the RO at the end of the worker's shift or when the limit of exposure was reached which is 100mR per shift or 200mR per day with a turnback value of 50mR.

At 9:40 a.m., the County Judge notified Dardanelle Schools of the incident at ANO. At 9:45 a.m., PAA #3 was received advising evacuation of Zone G, the Dardanelle Schools, and the schools in Russellville, Zones H and I. It also requested activation of the Danville Designated Care Center (DCC). At 9:50 a.m., the EOC began procedures to evacuate Dardanelle Schools and to activate the Danville Care Center located at Danville High School. The EOC also began notifying special populations in Dardanelle.

At 10:00 a.m., EC #5 was received from the utility advising of a **SAE**. At 10:01 a.m., the Dardanelle Police Chief briefed on the status of the evacuation of Dardanelle schools. At 10:24 a.m., the Dardanelle Police Chief indicated that school evacuation was complete. Upon completion of the school evacuation, the County Judge instructed the Coordinator to contact local grocery stores to have food and beverages sent to the Care Center for the evacuees. The forethought of the County Judge and his staff should be commended.

At 10:40 a.m., a shift change was conducted among key positions in the EOC. All incoming staff were briefed by outgoing staff on the status of the event and response actions taken in Yell County. All staff demonstrated knowledge of their emergency response roles and functions, and the shift change was accomplished without interrupting operations. At 11:05 a.m., EC #7 was received from the utility advising of a **GE**. At 11:13 a.m., PAA #5 was received from ADH recommending evacuation of schools in Zone J. Upon receipt of

this message, the County Judge instructed the Coordinator to call ADEM, the Governor's Office, and the National Guard to let them know that the county may need additional assistance.

At 11:21 a.m., PAA #6 was received from ADH recommending evacuation of Zones H, I, J, K, S, T and U. It further advised emergency workers to use anti-C clothing and KI in Zones G, H, I, J, K, S, T, and U. Immediately upon receipt of PAA #6, the County Judge instructed the Coordinator to sound the sirens in Yell County and to notify emergency workers to use KI.

At 11:49 a.m., PAA#7 was received from ADH advising the county to impound all agricultural products harvested in Zones G, H, I, J, K, S, T, and U. The County Judge promptly instructed the Coordinator to contact the farmers in the area and advise them of the impoundment and to poll the farmers and ask if there were any agricultural products stored in the area.

At noon, the County Judge directed the Coordinator to inquire as to the average reading of emergency worker dosimeters. The Coordinator later advised that the average reading was 10mR.

The County Judge and the EOC staff addressed how they would deal with the media. Two individuals recently received public information officer training. It was decided that trained individuals would hold news briefings for the media away from the EOC. Again, the county should be commended for their coordination among county officials, being proactive, and planning for dealing with the media.

Although protective action recommendations were made by ADH and were concurred with and implemented by the EPZ counties, Yell County did an excellent job of monitoring wind directions and the plume path in order to implement timely and accurate protective action decisions for the county. The County Judge has the primary authority for making decisions to provide maximum protection to the public in the county. The County Judge, with the assistance of the Coordinator, assumed direction and control of the emergency response. The County Judge provided the leadership in decision making by issuing instructions to staff and implementing PADs. The County Judge periodically briefed EOC staff on the status of the event and response actions being taken by the county. It is recommended that more frequent briefings be held, at least every hour or as dictated by changing events. This would ensure all staff in the EOC were kept up-to-date on the incident and response activities.

The EOC staff demonstrated the capability to manage special populations. ADH compiled and provided county officials with a complete listing of special populations in the county dated March 1, 2000. The special needs booklet is a very useful tool for notifying individuals, providing ambulance and handicapped transportation, transportation by a friend, and notification to the special needs population. The county possessed sufficient resources to provide transportation for these individuals.

At 12:43 p.m., the exercise was terminated.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 3, 4, 5, 9, 14, 15, 30, 32 and 33
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

2.5 CONWAY COUNTY

2.5.1 EMERGENCY OPERATIONS CENTER

Unannounced Off-Hours Drill

An unannounced off-hours drill was held on Monday, March 13, 2000, at the Morrilton Police Department/Warning Point. At 7:02 p.m., the Dispatchers received a fax over the DEF/VS from ANO indicating an **ALERT** due to fuel failure in Unit 2. A Dispatcher began notifying County officials via telephone at 7:05 p.m. The Dispatcher was unable to reach the Emergency Management Coordinator at his home or work. At 7:08 p.m., the Coordinator was overheard on the radio from the EOC assuming command and control. He was in the EOC for a meeting when the message came over the fax. The Coordinator began alerting key staff at 7:10 p.m. via telephone. Calls were completed at 7:19 p.m. including notification to ADEM. The drill was terminated after the Evaluator arrived at the EOC to halt activities.

The two objectives were met for this drill; however, the following was noted:

1. It appeared that the Dispatchers at the Morrilton Police Department and the Emergency Management Coordinator were either unprepared for or unaware that an unannounced off-hours drill would take place between Sunday and Friday. They assumed the Evaluator was there for the out-of-sequence Designated Care Center drill scheduled for Tuesday, March 14.
2. The Dispatchers did not know how to contact the Coordinator at the newly relocated EOC. Telephone numbers to the EOC, the Coordinator's pager number and/or his cell telephone number were not available. The Coordinator became aware of the ALERT as he was in the EOC for a meeting, heard the fax, and responded to the message.
3. The Dispatchers did not keep a log of any activities, noting telephone calls or ETAs of county officials.
4. The DCC was activated at an ALERT instead of the SITE AREA EMERGENCY as specified in the *Conway County Standard Operating Procedures and Implementing Instructions*. As a result, there was great confusion among students, faculty, and parents participating in activities at the school.
5. A copy of the county's *Standard Operating Procedures* (SOP) was unavailable at the Warning Point. When asked, the Dispatchers were unaware of any reference materials to use as guidance. The SOP was finally found when an extra staff person arrived and located it.

Wednesday, March 15, 2000

On Wednesday, March 15, 2000, the Conway County Warning Point located at the Morrilton Police Department received a fax over the DEF/VS from ANO at 8:10 a.m. The Dispatcher notified the Conway County Emergency Management Coordinator and advised him of a **NOUE** from ANO. The Coordinator advised the Dispatcher to notify all county officials.

The Coordinator arrived at 8:26 a.m. at the EOC which is located in the Morrilton Fire Department. The Coordinator received a fax from ANO at 8:35 a.m. advising of an **ALERT** status at the nuclear power plant. All EOC staff were notified of the **ALERT** and asked to report to the EOC immediately. Reporting staff included the County Judge, Sheriff, Radiological Officer, Communication Officer, and Administrative Support staff. The staff were aware of their responsibilities and carried them out without delay. Each staff member was easily identified with armbands indicating their position. The EOC was declared operational at 9:10 a.m.

The EOC contains sufficient space, lighting, ventilation, backup power, and office equipment necessary for the accomplishment of emergency operations. There was adequate equipment to communicate with other resources. There was a dedicated line and fax (DEF/VS) to communicate with the utility. Three commercial telephones were available with one having conference capability. Radio systems and cellular telephones were available. The Conway County EOC was capable of communicating with the utility, police, fire, SEOF, SEOC, local chapter of the ARC, ADH, and other available personnel.

Maps available included plume pathway emergency planning zone with sectors indicated, ingestion pathway information, evacuation routes, DCCs, population by evacuation area, Emergency Classifications (ECs), weather information, and T/ACPs. Status boards were adequate and were immediately updated in response to new information. Access to the facility was controlled.

The Coordinator briefed the staff after new information was received, consulted with the staff regarding each implementation of PADs, and involved all staff in decision making. The Coordinator communicated very well with the staff and displayed great leadership skills. The staff was also briefed regarding how a power plant operates and what was occurring at the plant during each EC.

All positions in the EOC demonstrated a shift change. The first shift gave their replacements detailed briefings on what had occurred and the current status of the event without causing any distractions.

At 10:00 a.m., the EOC was notified of a **SAE** declared at ANO. There were no recommended protective actions or radiological release reported at this time. At 11:07 a.m., the EOC received a Protective Action Advisory (PAA #4) from ADH requesting activation of the Conway County Designated Care Center.

At 11:06 a.m., the EOC was notified of a **GE** declared at ANO. ADH issued a recommended protective action (PAA #6) to evacuate Zones H, I, J, K, S, T and U and for emergency workers to wear anti-contamination clothing and take KI in Zones, G, H, I, J, K, S, T, and U. At 11:52 a.m., the EOC received a PAA #7 (agriculture) from ADH recommending placing dairy cattle and milk producing livestock on stored feed and water in all non-evacuated areas within the 10 mile EPZ, which included Zones L, M, N, O, P, Q, and R. All agricultural products harvested in Zones G, H, I, J, K, S, T, and U were to be impounded until further notice. These recommendations did not apply to Conway County as it is outside the 10-mile EPZ.

The exercise terminated at 12:42 p.m.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 2, 3, 4, 30, 32 and 33
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

2.5.2 TRAFFIC/ACCESS CONTROL POINT

This activity was demonstrated out-of-sequence.

All Deputies were notified at 9:09 a.m. regarding an **ALERT** at ANO. The Deputies were instructed to report to the EOC to receive two DRDs and instructions. Upon arriving at the EOC, the Deputies were issued a 0-200mR and a 0-20R DRD and briefed by the Radiological Officer on the correct way to read both DRDs, at what intervals to read and report readings, and their turnback values.

Deputies were instructed by the Sheriff to check for any impediments on all roads to Wonderview and Nemo Vista. Deputies communicated with the Sheriff via radio and/or cellular telephone. After the exercise, the Deputies were instructed to report to the EOC to return both DRDs to the Radiological Officer.

At 10:47 a.m., two Deputies were instructed to drive (simulated) to the T/ACP near I-95 where an accident had occurred. The Deputies were instructed to block off I-95 and reroute traffic through Highway 287 to Route 9. The Deputies were aware of what T/ACP to report to and also which highways to use for rerouting traffic. The Deputies were also aware of methods for blockades and traffic control, direction and control of evacuating traffic, and removing impediments. I-95 was reported clear at 11:19 a.m.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5 and 17
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

3. SUPPORT ORGANIZATIONS

3.1 CONWAY COUNTY DESIGNATED CARE CENTER - MORRILTON

This demonstration occurred on Tuesday, March 14, 2000, at the Conway County Designated Care Center (DCC) located at Morrilton High School. This is a large, multi-building facility that is reportedly capable of processing 22-25,000 evacuees and shelter up to 5,000 people. The facility has adequate space and resources for all radiological monitoring, decontamination, registration, and reception/care center activities. There are multiple restroom facilities, cafeterias, parking areas, and plenty of indoor space for evacuees. The facility can adequately accommodate feeding, sheltering, family assistance, childcare, medical care, and first aid. Also the large number of school employees dedicated to building maintenance, food preparation, teaching, management, and security are great enough in number to allow for two full shifts of employees to cover a 24-hour period. All types of supplies for this operation are also readily available with added reinforcement of supplies and personnel from the American Red Cross. Personnel from several organizations provided skilled services, including nursing and counseling. This was a seamless operation especially with so many agencies being represented and working together. They demonstrated an excellent camaraderie and sense of cooperation and purpose. Procedures were in place to perform their duties and to minimize contamination.

For this out-of-sequence demonstration, mobilization was initiated via a controller inject at the Conway County 911 Center at 6:54 p.m. The operators immediately initiated a systematic paging of the five participating volunteer organizations, which was completed within 10 minutes. All members of the departments have voice pagers and all received notification virtually immediately. Personnel began arriving at the DCC at Morrilton High School in less than 10 minutes; all were on hand within 20 minutes to begin setting up operations, which was completed by 7:53 p.m.

For this exercise, fire department radios were used, and the school system's radios were available for backup as were additional cellular telephones. A fire department person was assigned to stay with the DCC Director throughout the exercise to communicate with the EOC and others. This also enabled the DCC Director to be aware of conversations going on between the numerous volunteer fire departments participating at this location. All systems worked as expected.

Each radiological monitoring team member (for personnel and vehicles) working at the DCC was provided the following dosimetry: Landauer Corporation thermoluminescent dosimeter (TLD); CDV-138, 0-200 mR, direct reading dosimeter (DRD); and Dosimetry Corporation-865, 0-1.5 R, DRD. By interview, it was determined that the DRDs are inspected for electrical leakage and the records are maintained by ADH in Little Rock. A copy was provided to FEMA, Region VI staff. A record was made of the dosimeters assigned to each monitoring team member. DRD chargers were available and, prior to assigning the DRDs, the Deputy Radiation Officer (RO) recorded the DRD's initial reading on designated forms. The respective form was provided to all staff who were instructed to read their DRDs and record the readings every 30 minutes. At the end of their shift, staff members recorded their

DRD readings and turned in their TLD, DRDs, and the form documenting the DRD readings to the DCC RO.

Team members were knowledgeable of their exposure limits of 100mR per shift/200mR per day and turnback levels of 50mR total exposure or 20mR/hr. In addition, there was a 5000mRem mission dose limit. The RO maintained cognizance of each team member's exposure record and the general radiological contamination levels existing in the DCC.

The DCC became operational at 7:53 p.m. prior to the arrival of evacuees. Several local organizations performed designated DCC activities. Radiological monitoring was performed by the Morrilton Fire Department; decontamination by the Blackwell Fire Department; vehicle monitoring and decontamination by the Sardis Fire Department; registration of evacuees by the Arkansas Tech University, Emergency Administration and Management Program students for the American Red Cross; security services by the Oppelo Fire Department; and Emergency Medical Services by Medtech EMS. The American Red Cross was present and available to provide guidance to the students if needed. All of these are volunteer organizations under the general management and coordination of the High School Assistant Principal serving as Director.

Initial monitoring of the evacuees was performed with a Ludlum Model 51 portal monitor. Eight portal monitors were available. Six people were monitored during each of the two shifts, with one person found to be contaminated during each shift. In accordance with the extent-of-play agreement, only one portal monitor was demonstrated. In addition, six CDV-700 survey instruments with pancake probes were available to confirm contamination found by the portal monitor and to determine where the contamination was located on the individual being monitored. For each of the two shifts, five radiological monitoring personnel were present to operate the portal monitor and the survey instruments. Radioactive check sources were employed to determine proper operation of the portal monitor and the survey instruments. Each instrument was labeled with the proper response range for their internal check source and each survey instrument was equipped with earphones. The portal monitor was calibrated to alarm at radiation levels equal to or less than one microcurie of cesium-137 placed in the center of the portal monitor. Using the CDV-700 with a pancake probe, the action level to identify an individual requiring decontamination was 60 cpm above background. Evacuees found to be contaminated were directed to the decontamination facilities where, following decontamination, they were re-monitored with a CDV-700. Evacuees found not to be contaminated were directed to registration. At the registration table there was a sign advising the evacuees, "Bathe and Change Clothes as Soon as Practical."

Contamination control measures included: (a) gloves worn by monitoring personnel; (b) plastic covering on the portal monitor and the survey instrument pancake probes; and (c) heavy paper temporarily covering walkways and the platform base of the portal monitor.

Evacuee decontamination activities included: (a) removal of contaminated clothing; (b) use of soap and water, shower facilities, and sinks; (c) re-monitoring of decontaminated individuals; (d) providing fresh change of clothes for decontaminated individuals; and (e) procedures for separating, labeling, and containing contaminated clothing and other personal

belongings. Separate male and female showers were available. One shower facility was demonstrated consistent per the extent-of-play agreement. By interview, actions for individuals found to have fixed contamination were consistent with the plans and procedures.

On completion of monitoring or successful decontamination, the individuals were registered using forms on which appropriate information was recorded including name, address, telephone number, monitoring results, and time of decontamination. Screening and registration were handled in a proficient and professional manner with the needs of the individuals being taken into consideration.

In addition to monitoring of individuals, a good demonstration of vehicle monitoring using a CDV-700 with a pancake probe was provided by members of the Sardis Volunteer Fire Department. Each shift demonstrated proper procedures for vehicle monitoring of two vehicles, one of which was determined to be contaminated. Good knowledge of monitoring and recording procedures was demonstrated. A contaminated vehicle would be washed with water from a high pressure hose and brushes and remonitored for contamination. If a vehicle was unable to be decontaminated, it would be marked and parked in a restricted parking area at the facility. Parking for clean vehicles was also available.

It was observed that action levels for vehicle decontamination are inconsistent in DCC procedures. Chapter 7 of *Operation of Designated Care Center and Emergency Workers Center*, page 7-7 (rev. 4/98) states: "Vehicle registering readings in excess of 300 cpm when using a CDV-700 will be considered contaminated." Chapter 8, page 8-2 of the same document states: "If survey meter readings are equal to or greater than two times background, the vehicle shall be decontaminated. Following decontamination the vehicle shall be resurveyed. If a surface reading equal to or greater than two times background is again found, surface wipes shall be taken." It is recommended that Chapter 8 be revised to confirm with the correct action level of 300 cpm.

Although the High School is handicapped accessible for its school population, improvements could be made to make access for people with disabilities more convenient. Portable outdoor ramps would improve the outdoor pathway to the decontamination site, but there is a steep indoor stairway that needs to be addressed. A portable decontamination station setup specifically for persons with disabilities or limited mobility would be a great asset to this facility.

All three functions of the DCC - reception and registration, personnel monitoring and decontamination, and vehicle monitoring and decontamination - demonstrated 24-hour staffing capabilities. First shift personnel completed their demonstrations, provided good briefings to their reliefs, and the second shift continued operations seamlessly. While there are plenty of volunteers to provide for two-shift operations, staffing rosters for all operations would simplify the mobilization process for both shifts and make it clear who would work which shift.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5, 18, 19 and 30
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

3.2 EMERGENCY WORKER CENTER - ATKINS

An out-of-sequence drill was held at the Atkins Emergency Worker Center (EWC) on March 14, 2000. At 7:00 p.m., the Pope County EOC received a simulated call (by controller inject) from the State advising them to set up and staff the EWC located at Atkins High School. The Pope County Dispatcher notified the Atkins Fire Department by pager requesting activation of the EWC. The pager notification was verified by radio at 7:03 p.m.

The Atkins EWC possessed adequate communication equipment to serve the EWC. The EWC facility has one commercial telephone line. In addition, individuals from RACES were on-site and able to communicate with police, fire, EMS, and the Pope County Department of Emergency Management. Two hand-held radios were available to communicate with Pope County and other care centers. At 8:00 p.m., RACES at the EWC communicated with the Morrilton Care Center to obtain the status of operations at that center. The Civil Air Patrol has the capability to view areas by air and transmit images of major congestion areas to County officials.

The capability to continuously monitor and control radiation exposure to emergency workers was satisfactorily demonstrated. The Radiological Officer (RO) issued radiological equipment to all workers at the EWC. Each worker had a simulated TLD and two direct-reading dosimeters (one CDV-138, 0-200mR, and one DCA-865, 0-1.5R). Actual TLDs (a total of 100) are stored at the center but are not distributed for exercises. Records were made of all equipment that was issued and workers received a record form to document all readings. The RO issued instructions to each worker on how to read dosimetry and to take readings every 30 minutes. Each worker was familiar with exposure limits. The RO was familiar with exposure limits and turnback values. He indicated that no special assignments would be authorized from this location. Workers were made aware of the potential need to take KI and sufficient quantities of KI (52 bottles) were available at the center. All activities associated with radiological exposure control were implemented in accordance with the plan and procedures.

The American Red Cross (ARC) handled registration of the emergency workers at the EWC. The ARC will provide shelter, food, transportation, vouchers for food, and communication with relatives for emergency workers entering this facility. Upon arrival at the EWC, workers are monitored for contamination through the use of a portal monitor. Individuals who are not contaminated enter the registration area and are assisted in completing a "Disaster Shelter Registration Form." This form includes the name, age, gender, medical problems, names and numbers of family members, shelter location, telephone number, and a signature line. The time of arrival is also included on this form. All ARC registration personnel possessed dosimeters and were trained to monitor dosimetry every 30 minutes.

The ADH County Health Unit personnel were available at the EWC to provide first aid to emergency workers on an as needed basis. The Health Unit personnel were located in a small building adjacent to the High School gymnasium. The Health Unit personnel indicated they would provide basic first aid to emergency workers. In addition, they indicated they might have individuals in the facility who were unable to be decontaminated. The on-site

technical advisor later indicated they would not have any contaminated individuals in this building at any time. Additional training is recommended for County Health Unit personnel on their roles and responsibilities. They believed they might have contaminated individuals in this facility which would warrant the issuance of a TLD and/or dosimetry. Neither TLDs nor DRDs were in their possession until an inquiry was made by the evaluator.

The adequacy of procedures and facilities for the monitoring and decontamination of emergency workers at the EWC was demonstrated. The Atkins Volunteer Fire Department and the Pope County Emergency Response Team demonstrated monitoring and decontamination. The facility was adequate to accommodate both of these functions. A portal monitor (Ludlum model 51) and an adequate number of CDV-700s were available for monitoring of emergency workers. The first portal monitor set up by the staff malfunctioned. The staff quickly moved the portal monitor and set up the backup portal monitor which was checked for proper operation, including reading of the check source. Two staff for each shift were available to operate the portal monitors. One additional staff member was available at the hotline area to assist in processing the emergency workers through the portal monitor. When an emergency worker was found to be contaminated, the staff recorded all contaminated readings and instructed the emergency worker to step off the portal monitor and proceed around the building to the decontamination area. There was not a clear differentiation between the clean and contaminated areas near the entrance to the portal monitor, thus creating the potential for cross-contamination.

The decontamination area was located in an adjacent part of the building that was a spacious locker room with a shower area. Contaminated emergency workers that arrived at the decontamination area were first interviewed by a staff of four radiological monitors and one technical advisor (for each shift). Individuals were remonitored with a CDV-700 and readings were recorded. An action level of 300 cpm was used to trigger decontamination. Contamination control measures were employed in this area. Clean and contaminated areas were established, monitors wore gloves, and survey instrument probes were covered with plastic. Staff were familiar with decontamination procedures and several of the procedures were demonstrated or discussed with the evaluator. A shower and sink area were available for decontamination. Supplies including soap, towels, booties, Tyvek suits, and extra clothing were available in the decontamination area. Procedures for dealing with both female and male emergency workers were discussed with the evaluator. After decontamination procedures were completed, emergency workers were remonitored and sent to the registration area to be processed through the center. Individuals with fixed contamination would be referred to the area hospital.

The Atkins Fire Department demonstrated vehicle monitoring in the parking area in front of the High School gymnasium. Two shifts consisting of seven individuals each were used to monitor and process incoming vehicles into the facility. Two vehicles arrived at the EWC for each shift. Two monitors and their recorders were available for each shift demonstrating appropriate procedures to detect contamination. A written record, which included the results of the radiological survey, was made of each vehicle monitored. The driver of one of the radiologically clean vehicles was erroneously instructed to leave the facility without

processing through the monitoring and registration functions. The other clean vehicle was properly sent to the "clean" parking area.

For each shift, the exercise controller identified one of the vehicles as contaminated. The EWC staff quickly ended the monitoring process, entered the radiological information on the vehicle survey record form, and instructed the driver of the vehicle to pull around the facility to the vehicle decontamination area located in the athletic field behind the gymnasium building. The addition of signs and directional markers to clearly identify traffic routes and the location of various components (clean parking area, vehicle decontamination area, personnel monitoring area, etc.) would help to improve the vehicle flow into and through the EWC. Signs would also help to minimize the potential for cross-contamination as vehicles drove through the center to the decontamination area.

Decontamination of vehicles was conducted by the Fire Department. One vehicle for each shift arrived at the decontamination area for monitoring. Fire Department personnel correctly described the process they would use to decontaminate vehicles. The location of a secure parking area for vehicles with fixed contamination was not known; fire department personnel speculated on its location.

The ability to maintain 24-hour staffing was demonstrated by a shift change at all stations in the EWC. First shift personnel sufficiently briefed the second shift prior to terminating their activities. Rosters of emergency personnel were available. There was no loss in continuity and both shifts performed equally.

Technical advisors were provided by the State to assist and advise the EWC staff with technical radiological issues. This was an invaluable resource that greatly enhanced the effectiveness of the EWC.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5, and 30
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 22

Issue Number: 01-00-22-A-02

Description: The driver of one of the radiologically clean vehicles was erroneously instructed to leave the Atkins Emergency Worker Center without processing through the monitoring and registration functions.

Recommendation: Vehicle monitoring personnel should instruct drivers and passengers from all vehicles to report to the personnel monitoring and registration areas of the EWC. To protect the health and safety of emergency workers, EWC

monitoring personnel need to attend the next available training since this location would not demonstrate this objective in the next exercise.

- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES RESOLVED: NONE**
- f. **PRIOR ISSUES UNRESOLVED: NONE**

3.3 POPE COUNTY EMERGENCY MEDICAL SERVICE

The Pope County EMS drill was scheduled out-of-sequence on March 14, 2000. The initial notification was received at the Pope County EMS facility from the County 911 system at 9:17 a.m. about an ANO employee who had been injured on his right thigh and hit on the upper body. An ambulance and crew were dispatched to the scene of the accident at 9:19 a.m.

The injured worker received initial treatment and was monitored by the on-site emergency team. This team determined he had a large gash to his leg and possible head injury. The wound was monitored by the team and determined to have 20,000 cpm along the line of the wound. The wound was given first aid, and the worker was packaged for transport to the hospital.

Pope County EMS arrived on scene at 9:34 a.m. The patient was monitored using a CDV 700, and the crew verified that there was contamination on the worker. The worker was loaded into the ambulance, and it left at 9:41 a.m. for St. Mary's Hospital. En route, the crew communicated to the hospital providing the worker's vital signs, contamination level, and ETA. A plant Health Physicist accompanied the worker to the hospital. The ambulance arrived at the hospital at 9:52 a.m., where the worker was off-loaded and sent to the ER. The paramedics and ambulance were surveyed for radiological contamination, found to be clean, and released to assume other duties.

Each crew member had one TLD; DRDs with ranges of 0-20R, 0-1.5R, and 0-200mR; and a personal log for keeping dosimeter readings. Appropriate protective clothing, booties, and gloves were available.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5 and 20
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

3.4 ST. MARY'S AMI MEDICAL CENTER

The St. Mary's Emergency Room (ER) received a telephone call from the Pope County 911 Center at 9:17 a.m. notifying them that an ambulance had been requested to transport an injured/contaminated worker from ANO to the hospital for treatment and decontamination. The worker had a large laceration on his right leg. Contamination of the wound was approximately 20,000 cpm. This call from 911 was verified by the ER staff.

The ambulance crew provided patient vital signs, contamination level, and ETA to the ER staff while en route to the hospital.

Mobilization of hospital staff was initiated at 9:20 a.m. The Radiological Emergency Room (REA) was roped off and secured by hospital personnel. Appropriate barrier signs were hung on the ropes. Filters were placed over the air vents and excess items were removed from the treatment area. The medical team, consisting of one physician, four registered nurses, and one X-ray technician, dressed in appropriate protective clothing and were ready to receive the patient upon arrival of the ambulance at 9:55 a.m.

Each member of the medical team was provided one TLD and three dosimeters with ranges of 0-200mR, 0-20R, and 0-1.5R. Dosimeters were zeroed, initial readings recorded on a master log, distribution made by name and serial number. Readings were recorded every 15 minutes. The final readings were recorded upon exit from the treatment area.

Treatment and decontamination of the patient were demonstrated in an effective and professional manner including communication between the medical team and plant Health Physicist (HP). Containers were available in the treatment area for contaminated materials. Step-off procedures were well demonstrated by the staff with assistance from the HP in the treatment area and the HP in the buffer zone.

In summary, the status of FEMA exercise objectives for this location is as follows:

- a. **MET:** Objectives 1, 4, 5 and 21
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES RESOLVED:** NONE
- f. **PRIOR ISSUES UNRESOLVED:** NONE

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

ACA	Arkansas Code of 1987 Annotated
ACOE	Army Corps of Engineers
Anti-Cs	Anti-Contamination Clothing
ADEM	Arkansas Department of Emergency Management (formerly Office of Emergency Services)
ADH	Arkansas Department of Health
ALARA	As Low As Reasonably Achievable
ANL	Argonne National Laboratory
ANO	Arkansas Nuclear One
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
CFR	Code of Federal Regulations
CM	Communications Manager
CNS	Computerized Notification System
CPM	Counts Per Minute
DA	Dose Assessment Team
DAG	Dose Assessment Group
DCC	Designated Care Center
DCCM	Designated Care Center Manager
DEF/VS	Dedicated Emergency Facsimile/Voice System
DHHS	U.S. Department of Health & Human Services
DOE	U.S. Department of Energy

DOI	U.S. Department of Interior
DOT	U.S. Department of Transportation
DRD	Direct-Reading Dosimeter
EAS	Emergency Alert System
EBS	Emergency Broadcast System
EC	Emergency Classification
ECL	Emergency Classification Level
ECC	Emergency Communications Center
EM	Emergency Management
EEM	Exercise Evaluation Methodology
EIB	Emergency Information Booklet
EIS	Emergency Information System
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
ENC	Emergency News Center
ENCC	Emergency News Center Coordinator
ENS	Emergency Notification System
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
EPZ	Emergency Planning Zone
ER	Emergency Room

ETA	Estimated Time of Arrival
ESC	Emergency Services Coordinator
ESLO	Emergency Services Liaison Officer
EW	Emergency Worker
EWC	Emergency Worker Center
FAA	Federal Aviation Agency
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
FRMT	Field Radiation Monitoring Team
GE	General Emergency
HP	Health Physicist
IPZ	Ingestion Pathway Zone
KI	Potassium Iodide
LGL	Local Government Liaison
M/D	Monitoring/Decontamination
Mhz	Megahertz
mR	Milliroentgen
mR/h	Milliroentgen per hour
NERN	Nuclear Emergency Radio Network
NOAA	National Oceanic and Atmospheric Administration
NOUE/NUE	Notification of Unusual Event
NP&RP	Nuclear Planning & Response Program
NRC	U.S. Nuclear Regulatory Commission

NWS	National Weather Service Forecast Office
ORO	Off-site Response Organization
OSC	Operational Support Center
PAA	Protective Action Advisory
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PIO	Public Information Officer
PIT	Public Information Team
R	Roentgen
R/h	Roentgen/hour
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
RASCAL	Radiological Assessment System for Consequence Analysis
RC	Rumor Control
RCS	Reactor Coolant System
RDACS	Radiological Dose Assessment Computer System
REA	Radiological Emergency Area
REM	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RO	Radiological Officer
RRT	Radiological Response Team

RRTL	Radiological Response Team Leader
SAE	Site Area Emergency
SDO	Staff Duty Officer
SEOC	State Emergency Operations Center
SEOF	State Emergency Operations Facility
SOP	Standard Operating Procedure
TEDE	Total Effective Dose Equivalent
TOCD	Technical Operations Control Director
T/ACP	Traffic/Access Control Point
TLD	Thermoluminescent Dosimeter
TSC	Technical Support Center
UE	Unusual Event
USDA	U.S. Department of Agriculture
WP	Warning Point

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Arkansas Nuclear One exercise on March 15, 2000. Evaluator Team Leaders are indicated by the * preceding their names. The organizations of the evaluators are indicated by the following abbreviations:

ANL	Argonne National Laboratory
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protective Agency
FEMA	Federal Emergency Management Agency
HHS	U.S. Department of Health and Human Service
INEEL	Idaho National Engineering and Environmental Laboratory
NRC	U.S. Nuclear Regulatory Commission
USDA	U.S. Department of Agriculture

<u>EVALUATOR SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
Overall Coordination and RAC Chairman	Larry Earp	FEMA
Exercise Coordinator	Marilyn Boots	FEMA
Assistant Exercise Coordinator	Willie Malone	FEMA
Arkansas State EOC	*Frank Wilson	ANL
ADH ECC	*Tom Carroll	ANL
ADH Lab	*Tom Carroll	ANL
ADH @ SEOF	*Charles Hackney Daryl Thome	NRC ANL
State FRMTs	*Brad Salmonson George Brozowski	INEEL EPA
Emergency News Center	*Mike Meshenberg Bill Gasper Carl McCoy	ANL ANL ANL

<u>EVALUATOR SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
Pope County EOC	*Brenda Mosley	FEMA
T/ACP	Reta Oliver-Muller	FEMA
School Bus Drills	Chris Callahan	DOT
Unannounced Off-Hours	Brenda Mosley	FEMA
Johnson County EOC	*Julie Muzzarelli	ANL
Unannounced Off-Hours	Lisa Hammond	FEMA
Logan County EOC	*Phil Edgington	HHS
Unannounced Off-Hours	Phil Edgington	HHS
Yell County EOC	*Lisa Hammond	FEMA
Unannounced Off-Hours	Larry Earp	FEMA
Conway County EOC	*Angela Watson-Spinner	FEMA
Unannounced Off-Hours	Angela Watson-Spinner	FEMA
Conway County DCC	*Mike Meshenberg	ANL
	Daryl Thome'	ANL
	Reta Oliver-Muller	FEMA
Emergency Worker Center	*Julie Muzzarelli	ANL
	Bill Gasper	ANL
	Lisa Hammond	FEMA
St. Mary's AMI Medical Center	*Tom Carroll	ANL
	Phil Edgington	HHS
Pope County EMS	*Frank Wilson	ANL
National Weather Service	*Tom Carroll	ANL
EBS/EAS Station	*Kathleen Barrett	USDA

Henry Delgado, HHS, observed the exercise and accompanied Phil Edgington.

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise objectives that were scheduled for demonstration in the Arkansas Nuclear One exercise on March 15, 2000, and the extent-of-play agreement approved by FEMA Region VI on February 15, 2000.

The exercise objectives, contained in FEMA REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA REP-1, Rev. 1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.

Because the exercise objectives are intended for use at all nuclear power plant sites, and because of variations among off-site plans and procedures, an extent-of-play agreement is prepared by the State and approved by FEMA to provide evaluators with guidance on expected actual demonstration of the objectives.

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

Locations: State ADEM, Conway; ADH, Little Rock (ECC only); ADH/SEOF, Russellville; State Lab, Little Rock; State Field Radiological Monitoring Teams (FRMT), Russellville; Emergency News Center, Russellville; Pope County EOC, Russellville; St. Mary's Medical Center, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Conway County Designated Care Center (DCC), Morrilton; Yell County EOC, Danville; Atkins Emergency Worker Center (EWC), Atkins; Conway County EOC, Morrilton; Pope County EMS, Russellville.

- EOP:**
1. ANO will notify the ADH ECC per established procedures. The ECC will follow the instructions of the SDO and/or the TOCD.
 2. Direction and Control will remain with the TOCD who will be pre-deployed to the NP&RP office in Russellville.
 3. The FRMTs will be pre-deployed at the NP&RP office in Russellville. After activation, teams will stage at the ANG Armory, Russellville. Two teams will go into the field. FRMTs will be directed from the SEOF.

4. Objectives for the DCC in Morrilton and the EWC in Atkins will be demonstrated during an out-of-sequence drill on Tuesday, March 14, 2000. FEMA evaluator will meet the Emergency Management Coordinator at the EOC and observe the calldown procedures for activation.

5. The State Laboratory, Little Rock will demonstrate this objective, but will not process any samples.

6. ADH, Little Rock will only be evaluated at the ECC.

ARCA: None

OBJECTIVE 2: FACILITIES-EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT

Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.

Locations: State ADEM, Conway; ADH, Little Rock (ECC only); ADH/SEOF, Russellville; Emergency News Center, Russellville; Pope County EOC, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Yell County EOC, Danville; Conway County EOC, Morrilton.

EOP: 1. The State EOC, Conway has an EIS that also functions as the facility's status board. Personnel at the EOC will explain backup procedures.

2. ADH, Russellville will only be evaluated at the SEOF.

3. ADH, Little Rock will only be evaluated at the ECC.

ARCA: None

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the capability to direct and control emergency operations.

Locations: State ADEM, Conway; ADH, Little Rock or Russellville; Pope County EOC, Russellville; Logan County EOC, Paris; Yell County EOC, Danville; Johnson County EOC, Clarksville; Conway County EOC, Morrilton.

EOP: 1. ANO will notify the ADH ECC per established procedures. The ECC will follow the instructions of the SDO and/or the TOCD.

2. Direction and Control will remain with the TOCD who will be pre-deployed to the NP&RP office in Russellville. The ADH will be evaluated at this location.

ARCA: None

OBJECTIVE 4: COMMUNICATIONS

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

Locations: State ADEM, Conway; ADH, Little Rock (ECC only); ADH/SEOF, Russellville; State Lab, Little Rock; State Field Radiological Monitoring Teams (FRMT), Russellville; Emergency News Center, Russellville; Pope County EOC, Russellville; St. Mary's Medical Center, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Conway County Designated Care Center (DCC), Morrilton; Yell County EOC, Danville; Atkins Emergency Worker Center (EWC), Atkins; Conway County EOC, Morrilton; Pope County EMS, Russellville.

EOP:

1. The State Laboratory, Little Rock, will demonstrate this objective but will not process any samples.
2. ADH, Little Rock will only be evaluated at the ECC. (Note: ECC procedures may differ from actions because of pre-staging)

ARCA: None

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.

Locations: SEOF, Russellville; State Lab, Little Rock; State Field Radiological Monitoring Teams (FRMT), Russellville; Pope County EOC, Russellville; St. Mary's Medical Center, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Conway County Designated Care Center (DCC), Morrilton; Yell County EOC, Danville; Atkins Emergency Worker Center (EWC), Atkins; Pope County EMS, Russellville.

EOP:

1. Exposure control and monitoring will be under the control of ANO at the SEOF. Dosimetry will not routinely be issued to SEOF personnel.

2. State FRMTs and monitoring teams at the DCC and EWC will use gloves as necessary. Access to "anti-C's" will be demonstrated; however, they will not be worn. Respiratory protection will NOT be used.
3. At the county EOCs, the RO will demonstrate the EW briefing, record keeping, and procedures for issuing and returning dosimetry and KI.
4. The State Laboratory, Little Rock will not issue dosimetry. They will be prepared to discuss procedures.
5. The State Laboratory, Little Rock will demonstrate this objective, but will not process any samples.

ARCA: 01-98-05-A-03 (Yell County DCC, Danville): The emergency workers from the Yell County Fire Department who were the first to arrive were not issued dosimetry and did not receive a briefing.

Note: This ARCA will be demonstrated at the next scheduled evaluation at the Danville DCC, REX 04.

OBJECTIVE 6: FIELD RADIOLOGICAL MONITORING-AMBIENT RADIATION MONITORING

Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.

Locations: State FRMTs, Russellville.

EOP: 1. State FRMTs will follow the ALARA Policy of the Arkansas Department of Health. Teams will not routinely traverse a plume. State Teams will define the edge of the plume. Air samples will be taken in areas reading near 20mR/hr or as directed by the TOCD/RRTL.

2. Air samples will not be transported.

ARCA: None

OBJECTIVE 7: PLUME DOSE PROJECTION

Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.

Locations: SEOF, Russellville.

EOP: Samples used for back calculations will be controller injected. Field team data will not be used.

ARCA: None

OBJECTIVE 8: FIELD RADIOLOGICAL MONITORING-AIRBORNE RADIOIODINE AND PARTICULATE ACTIVITY MONITORING

Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as $10E-7$ microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.

Locations: FRMT, Russellville.

EOP: 1. State FRMTs will follow the ALARA Policy of the Arkansas Department of Health. Teams will not routinely traverse a plume. State Teams will define the edge of the plume. Air Samples will be taken in areas reading near 20 mR/hr or as directed by the TOCD/RRTL.

2. Air samples will not be transported to the laboratory.

3. Charcoal canisters will be used instead of Silver Zeolite.

4. Air samplers will not be purged.

5. FRMTs may be asked to describe all procedures not demonstrated.

ARCA: None

OBJECTIVE 9: PLUME PROTECTIVE ACTION DECISION MAKING

Demonstrate the capability to make timely and appropriate protective action decisions (PAD).

Locations: SEOF, Russellville; Pope County EOC, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Yell County EOC, Danville.

EOP: No comment

ARCA: None

OBJECTIVE 10: ALERT AND NOTIFICATION

Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

Locations: SEOF. Russellville.

- EOP:**
1. No sirens will sound and local radio messages and National Oceanic and Atmospheric Administration (NOAA) messages will NOT BE BROADCAST. The fifteen (15) minute window will begin with concurrence of the last county EOC with PAAs and will end when the local radio and NOAA operators begin (simulate) reading the messages.
 2. Local radio message simulation will be demonstrated at Radio Station KCJC in Russellville.
 3. NOAA message simulation will be demonstrated at the National Weather Service Forecast Office, North Little Rock. Any real emergency will take precedence.

ARCA: None

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

Locations: SEOF. Russellville.

- EOP:**
1. No sirens will sound and local radio messages and National Oceanic and Atmospheric Administration (NOAA) messages will NOT BE BROADCAST. The fifteen (15) minute window will begin with concurrence of the last county EOC with PAAs and will end when the local radio and NOAA operators begin (simulate) reading the messages.
 2. Local radio message simulation will be demonstrated at Radio Station KCJC in Russellville.
 3. NOAA message simulation will be demonstrated at the National Weather Service Forecast Office, North Little Rock. Any real emergency will take precedence.

ARCA: None

ARCA: None

OBJECTIVE 15: IMPLEMENTATION OF PROTECTIVE ACTIONS - SPECIAL POPULATIONS

Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

Locations: Pope County EOC, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Yell County EOC, Danville.

EOP: Lists and procedures will be demonstrated. Actions will be simulated.

ARCA: None

OBJECTIVE 16: IMPLEMENTATION OF PROTECTIVE ACTIONS - SCHOOLS

Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ).

Locations: Pope County EOC, Russellville.

- EOP:**
1. The Russellville and Dover School Districts will demonstrate this objective. It will be demonstrated at Russellville High School and Dover Middle School. At the appropriate time, the school administrator will be contacted via telephone. The administrator will be given the appropriate information as it applies to the school.
 2. The administrator will call the bus driver and talk through the procedures as required.
 3. The driver will be briefed by the administrator and will receive maps and directions. He will drive the identified route to the DCC.

ARCA: None

OBJECTIVE 17: TRAFFIC AND ACCESS CONTROL

Demonstrate the organizational capability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.

Locations: Conway County EOC, Morrilton; Pope County EOC, Russellville.

EOP: The RO will issue dosimetry, KI and brief the Deputy assigned to the T/ACP as appropriate. The Deputy will drive to the location and talk through the T/ACP, monitoring, and EW exposure control procedures. He will not set up road blocks.

ARCA: None

OBJECTIVE 18: RECEPTION CENTER - MONITORING, DECONTAMINATION, AND REGISTRATION

Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

Locations: Conway County DCC, Morrilton.

- EOP:**
1. One portal monitor and one side of decon will be set up. A minimum of 6 people and 2 vehicles, per shift, will go through the reception and monitoring procedures. During each shift, one person and one vehicle will visit the decon facility. Decon will be simulated, but explained.
 2. Alternate locations for vehicle Decon may be required because of school activities.
 3. This objective will be demonstrated out-of-sequence after 6:00 p.m. on Tuesday, March 14, 2000.
 4. Sealed lockers will not be opened unless necessary.

ARCA: None

OBJECTIVE 19: CONGREGATE CARE

Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

Locations: Conway County DCC, Morrilton.

EOP: This objective will be demonstrated out-of-sequence after 6:00 p.m. on Tuesday, March 14, 2000.

ARCA: None

OBJECTIVE 20: MEDICAL SERVICES - TRANSPORTATION

Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.

Locations: Pope County EMS, Russellville.

EOP: 1. The EMS will pick up the patient at the plant. Prior to transfer of patient to the hospital, the EMS will demonstrate monitoring the patient. After patient transfer, the EMS will demonstrate vehicle monitoring. The ambulance will not be draped.

2. This objective will be demonstrated out-of-sequence on or about 10:00 a.m. on Tuesday, March 14, 1999. The medical emergency identified in the scenario on exercise day is an on-site drill only. The ORO will not participate.

3. Any real emergency will take precedence.

ARCA: None

OBJECTIVE 21: MEDICAL SERVICES - FACILITIES

Demonstrate the adequacy of the equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

Locations: St. Mary's Medical Center, Russellville.

EOP: 1. This objective will be demonstrated out-of-sequence on or about 10:00 a.m. on Tuesday, March 14, 2000. The medical emergency identified in the scenario on exercise day is an on-site drill only. The ORO will not participate.

2. Any real emergency will take precedence.

3. New procedures at the hospital do not require draping of halls and entrances.

ARCA: None

OBJECTIVE 22: EMERGENCY WORKERS, EQUIPMENT, AND VEHICLES MONITORING AND DECONTAMINATION

Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment, and vehicles.

Locations: Atkins Emergency Worker Center, Atkins.

- EOP:**
1. One portal monitor and one side of decon will be set up. A minimum of 6 people and 2 vehicles, per shift, will go through the reception and monitoring procedures. During each shift, one person and one vehicle will visit the decon facility. Decon will be simulated, but explained.
 2. Alternate locations for vehicle Decon may be required because of school activities.
 3. This objective will be demonstrated out-of-sequence after 6:00 p.m. on Tuesday, March 14, 2000.
 4. Sealed lockers will not be opened unless necessary.

ARCA: None

OBJECTIVE 27: INGESTION EXPOSURE PATHWAY – PROTECTIVE ACTION IMPLEMENTATION

Demonstrate the capability to implement protective actions for ingestion exposure pathway.

Locations: State ADEM, Conway; SEOF, Russellville.

ARCA: 01-96-27-A-02: (SEOF) Portion of the population already in the process of evacuating were given a conflicting recommendation from an agricultural advisory.

Note: This ARCA will be demonstrated during the next Ingestion Exercise, REX-02.

OBJECTIVE 30: CONTINUOUS, 24 - HOUR STAFFING

Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

Locations: State ADEM, Conway; SEOF, Russellville; State Field Radiological Monitoring Teams (FRMT), Russellville; Emergency News Center, Russellville; Pope County EOC, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Conway County Designated Care Center (DCC), Morrilton; Yell County EOC, Danville; Atkins Emergency Worker Center (EWC), Atkins; Conway County EOC, Morrilton.

EOP:

DCC and EWC:

1. The following positions at the DCC and EWC will demonstrate shift change:
 - DCC Manager
 - Public Health Nurse
 - Registration Person
 - RM/Decon Supervisor and Team(Note: Food services is not a 24-hour operation)
2. The Fire Department will report to and set up the DCC/EWC. The 1st shift will process evacuees, and brief 2nd shift.
3. The 2nd shift will report to DCC, be briefed, and process evacuees.
4. Some 2nd shift workers will role-play as evacuees while 1st shift is on duty. After they go off duty, 1st shift workers will role-play while the 2nd shift is on duty.
5. Shift change will be made after consultation with evaluator/controller.

County EOC:

1. The following positions in the County EOCs will demonstrate a shift change:
 - Judge
 - Sheriff
 - County ADEM Coordinator
 - Radiological Officer
 - Communications Officer
2. Shift change will be made after consultation with evaluator/controller.

Field Monitoring Teams: This shift change will be made after consultation with evaluator/controller.

Staging Area Coordinator: This position will not shift change.

SEOF: All State positions at the SEOF will demonstrate a change except for the following:

- Dose Assessment Team Leader
- Technical Spokesperson (TBD)

ADEM: ADEM will demonstrate a Shift Change at both the SEOF and the State EOC in Conway. At the State EOC the following positions will shift change:

- Team Chief
- Incident Coordinators

Emergency News Center:

The following positions will shift change:

State:

- PIO Personnel
- JIC/PIT Liaison

ANO:

- Communications Manager
- Emergency News Center Coordinator
- Local Government Coordinator/Company Representative
- Site Media Coordinator
- Rumor Control

ARCA: None

OBJECTIVE 32: UNANNOUNCED EXERCISE OR DRILL

Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

Locations: State ADEM, Conway; ADH, Little Rock (ECC only); ADH, Little Rock or Russellville; Pope County EOC, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Yell County EOC, Danville; Conway County EOC, Morrilton.

- EOP:**
1. The exercise window for demonstrating this objective begins at 6:00 p.m. on Sunday, March 12, 2000 and ends at 6:00 p.m. on Friday, March 17, 2000.
 2. This objective will be demonstrated "out-of-sequence" and will not be tied to the regular exercise scenario. This objective demonstration will be initiated with a FEMA coordinated exercise message. The message will be sent via normal alert and notification systems.
 3. The following are the minimal actions required at each evaluated location:
 - a. State ADEM:
 1. The State ADEM is a 24-hour operation.
 2. ADEM will demonstrate this objective by notifying personnel required to man their EOC. They will document the notification time and ETA of personnel reporting to the facility.
 3. No additional personnel will be required to report for duty.
 4. The demonstration will terminate when the documentation is completed.

b. County EOC:

1. Warning Point personnel will complete the calldown roster for the activation of the EOC.
2. The County Coordinator (or designee) will report to the Warning Point. No other personnel are required to report for duty. Warning Point personnel will document the notification time and ETA of personnel reporting to the facility.
3. The demonstration will terminate when the County Coordinator (or designee) reports for duty and the documentation is completed.

c. ADH Little Rock (ECC only):

1. The ECC is a 24-hour operation.
2. Demonstration of this objective will be accomplished by completion of the notification of SEOF personnel.
3. No additional personnel are required to report for duty.

d. ADH/SEOF: (The ADH/SEOF team will deploy to Russellville on March 14, 2000.)

If Team deployed:

1. ECC personnel will notify the TOCD.
2. TOCD will report to the Best Western Meeting Room.
3. ECC will notify the remainder of the ADH/SEOF team and document notification time and ETA at the NP&RP Office.
4. Demonstration will terminate when the TOCD reports for duty and the documentation is completed.

If Team not deployed:

1. ECC personnel will notify the SDO.
2. SDO will report to the ECC.

3. ECC will notify the remainder of the ADH/SEOF team and document notification time and ETA at the ECC.
4. Demonstration will terminate when the SDO reports for duty and the documentation is completed.

ARCA: None

OBJECTIVE 33: OFF-HOURS EXERCISE OR DRILL

Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.

Locations: State ADEM, Conway; ADH, Little Rock (ECC only); ADH, Little Rock or Russellville; Pope County EOC, Russellville; Johnson County EOC, Clarksville; Logan County EOC, Paris; Yell County EOC, Danville; Conway County EOC, Morrilton.

EOP:

1. The exercise window for demonstrating this objective begins at 6:00 p.m. on Sunday, March 12, 2000 and ends at 6:00 p.m. on Friday, March 17, 2000.
2. This objective will be demonstrated "out-of-sequence" and will not be tied to the regular exercise scenario. This objective demonstration will be initiated with a FEMA coordinated exercise message. The message will be sent via normal alert and notification systems.
3. The following are the minimal actions required at each evaluated location:
 - a. State ADEM:
 1. The State ADEM is a 24-hour operation.
 2. ADEM will demonstrate this objective by notifying personnel required to man their EOC. They will document the notification time and ETA of personnel reporting to the facility.
 3. No additional personnel will be required to report for duty.
 4. The demonstration will terminate when the documentation is completed.

b. County EOC:

1. Warning Point personnel will complete the calldown roster for the activation of the EOC.
2. The County Coordinator (or designee) will report to the Warning Point. No other personnel are required to report for duty. Warning Point personnel will document the notification time and ETA of personnel reporting to the facility.
3. The demonstration will terminate when the County Coordinator (or designee) reports for duty and the documentation is completed.

c. ADH Little Rock (ECC only):

1. The ECC is a 24-hour operation.
2. Demonstration of this objective will be accomplished by completion of the notification of SEOF personnel.
3. No additional personnel are required to report for duty.

d. ADH/SEOF: (The ADH/SEOF team will deploy to Russellville on March 14, 2000.)

If Team deployed:

1. ECC personnel will notify the TOCD.
2. TOCD will report to the Best Western Meeting Room.
3. ECC will notify the remainder of the ADH/SEOF team and document notification time and ETA at the NP&RP Office.
4. Demonstration will terminate when the TOCD reports for duty and the documentation is completed.

If Team not deployed:

1. ECC personnel will notify the SDO.
2. SDO will report to the ECC.

3. ECC will notify the remainder of the ADH/SEOF team and document notification time and ETA at the ECC.
4. Demonstration will terminate when the SDO reports for duty and the documentation is completed.

ARCA: None

APPENDIX 4

EXERCISE SCENARIO AND TIMELINE

DETAILED DESCRIPTION OF EVENTS

This section contains a chronological listing of major scenario events and anticipated responses. It is intended for use as an aid for effective placement of controllers, evaluators and observers. The anticipated responses listed in this section do not necessarily include all of the acceptable actions by players and should not be used as bases for performance evaluation. Evaluations of player decisions and actions should be based on appropriate implementation of the Emergency Plan and Procedures.

REX-2000 Exercise March 15, 2000

NARRATIVE SCENARIO SUMMARY

Shift turnover in the Unit 2 Control Room will begin at 0730. Unit 2 will be operating at 100% power and has been operating at this power level for >30 days. Unit 1 will be operating at 100% power (simulated). Current conditions: Unit 2 has been running at an elevated RCS activity for approximately 5 days. Reactor Engineering has recommended that plant transients be minimized and that power maneuvers should not exceed 40% per hour. Prior to power changes, Operations should consult Reactor Engineering for recommendations. Due to river dredging, the lake level is at the 336' 6" elevation and stable. Operations has been on heightened awareness of lake level for the last 48 hours.

The exercise will begin at 0745 with Unit 2 simulator crew taking control of the simulator.

At 0745 lake level will be at the 336' 6" elevation. The Corp of Engineers at the Dardanelle Dam (Simulator controller) will call and inform the Control Rooms (Unit 1 simulated) that a barge has lodged in the lock and the lake level is dropping. The Dardanelle Dam Operator estimates that the lake level will drop below the 335' elevation. 4 hours is the estimation for lock repairs.

At ~0800 the Shift Superintendent (SS) will declare a **NOTIFICATION OF UNUSUAL EVENT (NOUE)** based on the following Emergency Action Level (EAL):

8.1 TORNADO, FLOOD, LOSS OF DARDANELLE RESERVOIR, EARTHQUAKE

The SS will instruct the designated Shift Communicator to notify the Arkansas Department of Health (ADH) within 15 minutes of the declaration of the UE and notify the *Nuclear Regulatory Commission (NRC) immediately thereafter. The ADH will be advised that there are no protective actions recommended for members of the general public.

At ~0830 the lake level reaches the 334' 6" elevation. The SS will commence Rx Shutdown @40%/hr.

At ~0830 the SS will declare an **ALERT** based on the following EAL:

8.2 TORNADO, HIGH WINDS, FLOODS, LOSS OF DARDANELLE RESERVOIR, EARTHQUAKE

The SS will instruct the designated Shift Communicator to notify the ADH within 15 minutes of the declaration of the **ALERT** and notify the *NRC immediately thereafter. The ADH will be advised that there are no protective actions recommended for members of the general public.

The Computerized Notification System (CNS) will be activated to notify the ERO of the **ALERT**. ERO members will respond to staff the Technical Support Center (TSC), Operational Support Center (OSC) and the Emergency Operations Facility (EOF).

By approximately 0930 the TSC and OSC should be fully staffed and operational and the EOF may be fully staffed and operational. The EOF Director, when ready, will assume the responsibility for Emergency Direction and Control (ED&C) from the SS. Otherwise, the TSC Director will assume this responsibility within one hour of the **ALERT** declaration.

At ~1030, reactor power will be approximately 20%. The Shift Superintendent will request the reactor to be tripped per procedure.

The reactor trip from 20% power will cause the failed fuel to increase to approximately 2% Clad Failure. Reactor Coolant Pump "A" will have a seal failure, which will allow a 75-gpm RCS leak into the Component Cooling System (CCW) Loop 2.

CCW loop 2 radiation monitor 2RITS-5202 will increase above alarm setpoint. Radiation levels near the CCW Loop 2 piping area will continue to increase as long as the RCS is leaking into the system and will stabilize once the leak is secure.

The Operations Staff will not be able to isolate the RCS leak due to failure of the following components:

- RCP CCW Return Valve **2CV-5255-1** will not close (breaker 2B53G4 will trip when valve is operated from hand switch due to internal binding of valve.)
- RCP CCW Return Manual Isolation **2CCW-150** cannot be closed (stem is sheared and the hand wheel is laying on floor)
- CCW Containment Isolation Valve **2CV-5254-2** will not operate from hand switch. The reason will be unknown.

At ~1100, RDACS will indicate a radioactive release via the Unit 2 Radwaste Area SPING. This is a result of the CCW Loop 2 being aligned to the Auxiliary Building gas collection system header.

At ~1100 the SS will declare a **GENERAL EMERGENCY** based on the following EAL:

1.7 Loss of or challenge to all 3 fission product barriers.

The SS will instruct the designated Shift Communicator to notify the ADH within 15 minutes of the declaration of the **GENERAL EMERGENCY** and notify the *NRC immediately thereafter. The EOF Director will issue (at a minimum) the following Protective Action Recommendation (PAR) to offsite authorities:

**EVACUATE: 2-mile radius
5 miles downwind
SHELTER: Remainder of the 10 mile EPZ**

The Dose Assessment Team (DAT) will project dose rates and integrated doses offsite. Offsite monitoring teams will be dispatched to obtain field measurements.

The TSC Director will determine the need to evacuate non-essential personnel from the plant site using procedure 1903.030, "Evacuation." **Plant evacuation and accountability will be SIMULATED.**

Between 1200 and 1300, one or more repairs/actions will be made to stop the release of radioactivity from the plant.

- Close 2CV-5255-1
- Close 2CCW-150
- Close 2CCW-39A and 40A - containment entry required to close valves, elevated dose in containment building may not allow valves to be accessed.
- Cooldown to SDC

Once release is secure, the ERO will initiate recovery efforts.

Approximately 1315, after all exercise objectives have been met, the lead controller will terminate the exercise.

* Will be simulated if the NRC chooses not to participate

DETAILED SCENARIO

TIME	MESSAGE # / Controller	EVENT	MESSAGE FOR	ANTICIPATED RESPONSE MESSAGE
0730	1 Control Room (Brian Hurley)	The operations crew receives a shift turnover, which will present the initial plant conditions.	Control Room Staff	The crew assumes the watch. <i>"Refer to the attached shift relief sheet for the initial plant conditions."</i>
0745	2 Dardanelle Dam (Brian Hurley)	Barge is lodged in lock. Losing water through Lock. Level dropping fast. Expected to drop to the 335' elevation	Control Room Staff	AOP 2203.008 for low lake level, Review 1903.010 for EAL.
0800		NUE - Notification of Unusual Event EAL 8.1		The Shift Superintendent will declare a NUE based on the following Emergency Action Level (EAL): <i>8.1 Tornado, Flood, Loss of Dardanelle Reservoir, Earthquake</i> The SS will commence notification procedure: <i>ADH - within 15 minutes</i> <i>NRC - immediately thereafter.</i> No protective action recommendation at this time. Shift Engineer will notify selected plant personnel via Computerized Notification System (CNS).
~0815	1C Roger Freeman	If the Shift Superintendent has not made the NUE declaration, issue this message.	Shift Supt.	<i>Declare a NOTIFICATION OF UNUSUAL EVENT (NUE)</i>

TIME	MESSAGE # / Controller	EVENT	MESSAGE FOR	ANTICIPATED RESPONSE MESSAGE
0825	3 AO Controller	Bay level is at 0% bay level (335' elevation)	Control Room Staff	<p><i>The current bay level is 0%.</i></p> <p>AOP 2203.008 for low lake level, Review 1903.010 for EAL.</p>
0825	4 Brian Hurley or AO Controller	Lake level below 335' elevation.	Control Room Staff	<p><i>This is the Dardanelle Dam Operator. The current lake level is 334' 6" and stable. Repairs are ongoing.</i></p> <p>AOP 2203.008 for low lake level, Review 1903.010 for EAL.</p>
~0830		<p><u>ALERT</u> Emergency Class Declared</p> <p>Based on EAL 8.2, lake level <335' elevation.</p>		<p>The Shift Superintendent will declare a ALERT based on the following Emergency Action Level (EAL):</p> <p>8.2 Tornado, High Winds, Floods, Loss of Dardanelle Reservoir, Earthquake</p> <p>The SS will commence notification procedure: <i>ADH – within 15 minutes</i> <i>NRC - immediately thereafter.</i></p> <p>No protective actions recommendation at this time.</p> <p>Control Room Notifications Communicator will activate the Emergency Response Organization (ERO) via CNS.</p>

TIME	MESSAGE # / Controller	EVENT	MESSAGE FOR	ANTICIPATED RESPONSE MESSAGE
0835	5 (Rx. Eng or Brian Hurley)	Reactor Engineering will recommend plant shutdown at 40% per hour.	Control Room Staff	<i>Due to the elevated RCS activity, which the plant is currently experiencing, any power maneuvers should not exceed 40% reactor power change per hour.</i>
~0840		Plant Shutdown		The Shift Superintendent will commence Rx Shutdown @ 40%/hr. per procedure 2102.004, "Power Operations."
~0845	2C Roger Freeman	If the Shift Superintendent has not made the NUE declaration, issue this message.	Shift Supt.	<i>Declare an ALERT.</i>
0930		The TSC and OSC are fully staffed and operational. The EOF may be fully staffed and operational.		The EOF will assume the responsibility for Emergency Direction and Control from the SS, if ready. Otherwise the TSC Director will assume this responsibility within 1 hour of the ALERT declaration.
~0930		Arkansas Department of Health will be staffed at the EOF.		
~1030		<u>Plant Trip</u>		Operations crew will trip the plant at ≈20% reactor power per procedure 2202.004, "Power Operations."
~1030		Failed Fuel Failed fuel will increase to ≈2% Clad Failure due to plant trip.		Operations crew will refer to Abnormal Operating Procedure (AOP) 2203.020, "High RCS Activity."
~1030		RCS Leak A 75 gpm RCS leak into the Component Cooling Water (CCW) system due to failure of 2P32A Seal Cooler.		Operations crew will refer to procedure AOP 2203.016, "Excessive RCS Leakage."

TIME	MESSAGE # / Controller	EVENT	MESSAGE FOR	ANTICIPATED RESPONSE MESSAGE
~1030		<p>Failed Fuel Monitor increase</p> <p>2RI4806A = Offscale High 2RI4806B = Offscale High</p>		<p>Operations will recognize that the Failed Fuel Monitors are offscale high which would indicate at least 1% failed fuel.</p>
~1030		<p>CCW Alarm</p> <p>CCW Loop 2 Radiation Monitor 2RITS-5202 will increase above alarm setpoint.</p>		<p>Operations crew will refer to procedure AOP 2203.016, "Excessive RCS Leakage."</p>
		<p>The Operations Staff will not be able to isolate the leak due to failure of</p> <p>RCP CCW Return Valve 2CV-5255-1 (breaker 2B53G4 will trip when valve is operated from hand switch due to internal binding of valve.)</p> <p><u>AND</u></p> <p>RCP CCW Return Manual Isolation 2CCW-150 (stem is sheared and the hand wheel is laying on floor)</p> <p><u>AND</u></p> <p>CCW Containment Isolation Valve 2CV-5254-2 will not operate from hand switch.</p>		
~1050		<p>Offsite Release</p> <p><i>RDACS indicates a release from SPING 6 RWA - release is from the CCW vent to Auxiliary Building gas collection header.</i></p>		<p>EOF, TSC, OSC and Operations will commence activities to stop release.</p>

TIME	MESSAGE # / Controller	EVENT	MESSAGE FOR	ANTICIPATED RESPONSE MESSAGE
	6 Jerrie Hare	Forecast Data		<i>Disregard the forecast you have obtained via procedure. Use the meteorological data provided to you by the Dose Assessment Controller for the duration of the drill.</i>
~1100		GENERAL EMERGENCY EAL review using procedure 1903.011.		The EOF Director will declare a GENERAL EMERGENCY (GE) based on the following EAL: <u><i>1.7 Loss of or challenge to all 3 fission product barriers.</i></u>
		PROTECTIVE ACTION RECOMMENDATIONS		<p>The EOFD will commence notification procedure: <i>ADH – within 15 minutes</i> <i>NRC - immediately thereafter.</i></p> <p>The EOF Director will issue (at a minimum) the following Protective Action Recommendation (PAR) to offsite authorities:</p> <p><i>EVACUATE 2 mile radius</i> <i>5 miles downwind</i></p> <p><i>SHIELTER: Remainder of the 10 mile EPZ</i></p> <p>The Dose Assessment Team (DAT) will project dose rates and integrated doses offsite. Offsite Monitoring Teams will be dispatched to obtain field measurements.</p>

TIME	MESSAGE # / Controller	EVENT	MESSAGE FOR	ANTICIPATED RESPONSE MESSAGE
~1115	7 TSC Controller	PLANT EVACUATION Upon declaration of General Emergency issue message 6.		The TSC Director will determine the need to evacuate non-essential personnel from the plant site using procedure 1903.030. EVACUATION WILL BE SIMULATED. <i>Do not perform a plant evacuation. This event will be simulated. Do not enter four "0000" card reader.</i>
~1115	3C EOF Controller	If the EOF Director has not made the GE declaration, issue this message.	EOFD	<i>Declare a General Emergency.</i>
		To Repair and Damage Control Teams		
	8 Maintenance	When repair team reaches RCP CCW Return Valve 2CV-5255-1 , controller will issue message 8	Repair Team/ Operator	<i>Valve will not stroke from hand switch, Breaker 2B53G4 has tripped.</i>
	9 Maintenance	When repair team reaches RCP CCW Return Manual Isolation Valve 2CCW-150 , controller will issue message 9	Repair Team/ Operator	<i>Shaft has sheared and hand wheel is laying on floor.</i>
	10 Maintenance	When repair team reaches 2P32A RCP Seals Supply Valve 2CCW-39A and 2P32A RCP Seals Return Valve 2CCW-40A , controller will issue message 10	Repair Team/ Operator	<i>Area radiation levels exceed 10 R/hr. Will take approximately 1 hour from the decision to close valves until they are actually closed.</i>
	11 Maintenance	Reset Breaker 2B53G4	Repair Team/ Operator	<i>Breaker is tripped. Breaker will reset but will trip if valve is stroked.</i> Operations will request valve to be repaired

TIME	MESSAGE # / Controller	EVENT	MESSAGE FOR	ANTICIPATED RESPONSE MESSAGE
1230	12 Maintenance	<u>Release Stopped</u> 2CV-5255-1 Repaired	Repair Team/ Operator	<i>"Report to OSC that valve 2CV-5255-1 is repaired."</i>
	13 Maintenance	<u>OR</u> 2CCW-150 Repaired	Repair Team/ Operator	<i>"Report to OSC that valve 2CCW-150 is repaired."</i>
	14 Operator	Containment entry to isolate 2CCW-39A and 40A	Repair Team/ Operator	<i>"Report to OSC that 2CCW-39A and 40A are closed."</i>
		<u>OR</u> Cooldown to SDC		Plant switches to Shutdown Cooling
~1300	15 Lead Drill Controller	Drill Termination – after all objectives have been completed	All Facilities	<i>The Exercise has been terminated. Prepare for critique.</i>
~1310	All Facilities	All ERO facilities will participate in a post drill critique.		
~1330	All Lead Facility Controllers	Perform post drill activities.		

REX-2000

LIST OF SIMULATED ON-SITE ACTIVITIES

1. Field Monitoring Teams (HP)

- a. Due to the expense of silver zeolite cartridges, charcoal cartridges will be used as a substitute.
- b. To prevent undue public concern, neither respiratory protection nor anti-contamination clothing will be worn in the field. Teams will, however, be expected to take anti-contamination clothing with them.

2. Repair and Damage Control Teams

- a. Manipulation and repair of plant equipment will be simulated (with the exception of any mock-ups that may be staged for the drill).
- b. Repair and Damage Control Team access to plant areas will occur to the extent allowed by actual in-plant radiation levels.
- c. Teams will not wear actual anti-contamination clothing. Simulated anti-contamination clothing will be provided for teams entering the plant.
- d. If required, respiratory protection will be worn. Teams will demonstrate donning respiratory protection, then remove the mask.

3. Chemistry Sampling

- a. If a reactor coolant sample is requested during the exercise, all sampling will be simulated. The controller will issue the chemistry data approximately 45 minutes after the request is made for a sample.
- b. If the scenario requires a post accident sampling, post accident sampling will be simulated. The controller will issue post accident chemistry data approximately 1 hour after team is dispatched.
- c. All other chemistry sampling will be simulated. Controllers will issue sample data 15 to 30 minutes after request depending on sample requested.
- d. Due to the various and numerous samples that can be requested, only data for the most probable sample requests are contained in this manual. For sample data not contained in Appendix C of the manual, sample results should be issued from a Chemistry controller. This controller will ensure the sample results will not affect the direction of the scenario.

Chemistry controller. This controller will ensure the sample results will not affect the direction of the scenario.

4. Plant Evacuation and Accountability

If during the exercise it is determined that a plant evacuation is required, the evacuation, initial and continuous accountability will be simulated.

5. Offsite Communication

- a. Offsite communication to the NRC will be simulated.
- b. Requests for offsite assistance whether through ANO or Corporate will be simulated.

APPENDIX 5

NATIONAL WEATHER SERVICE FORECAST CENTER AND EBS/EAS STATION OBSERVATIONS

NATIONAL WEATHER SERVICE FORECAST CENTER

The National Weather Service (NWS) Forecast Center is located at the North Little Rock Airport. It is a recently remodeled facility that is operational 24-hours a day and contains state-of-the-art equipment. Employees are experienced Commerce Department weather personnel.

The function of the NWS in an emergency is to broadcast messages over their NOAA Weather Radio System as instructed. The **ALERT** Emergency Classification (EC) message was received over the dedicated fax line at 9:50 a.m. At 9:53 a.m., the message was broadcast (simulated) over the NOAA frequency. This message would be continuously broadcast until an updated message was received or the emergency terminated.

EBS/EAS STATION

Radio station KCJC is located at 2705 E. Parkway in Russellville. The station operates a fully automated EBS/EAS, SAGE Alerting System, which receives weather information from the National Weather Service 24-hours a day. KCJC's Operations Manager and Engineer are on call 24-hours a day should the station experience a system failure.

KCJC is responsible for the primary notification of the public, who have been alerted by sirens, of an incident at ANO. Commercial telephone is the primary system for receipt of emergency information. The Operations Manager and all "on-air" station operators receive training on "Broadcast Station Procedures" conducted by the Arkansas Department of Health and review the Emergency Operating Procedures once a year.

At 9:54 a.m., the Operations Manager received a telephone call with an **ALERT** notification (Message "E" – Evacuation, Message Number 1). Authenticators supplied by the Arkansas Department of Emergency Management are used to verify that a message received by telephone is from an official source. Once the message was authenticated, the Operations Manager quickly recorded the pre-scripted message and began the simulated broadcast of the message at 9:57 a.m. The message was simultaneously broadcast to KCJC (FM), KWKK (FM), KRRD (FM), and KCAB (AM).

Radio Station KCJC successfully demonstrated its ability to alert the public within the 10-mile EPZ by the prompt dissemination of the instructional message within 15 minutes of the decision by appropriate officials.

APPENDIX 6

AREAS RECOMMENDED FOR IMPROVEMENT

Johnson County:

Description: The unannounced off-hours drill was successfully demonstrated, however notification to EOC staff was initiated before notification was received from the utility.

Recommendation: Provide additional training for the County Warning Point personnel on their roles and responsibilities regarding receipt of ANO notifications.

Johnson and Yell Counties:

Description: NERN radio transmissions were difficult to hear and/or understand.

Recommendation: Improve the transmission quality of the NERN system.

Logan County:

Description: Dispatch personnel at the County Warning Point were initially confused about the notification procedures, and their personnel roster was not as current as the roster used by the Coordinator.

Recommendation: Provide Dispatch personnel at the Warning Point with additional training in notification procedures and keep the rosters up-to-date at both the Warning Point and the EOC.

Yell County:

Description: Event logs were posted on the walls of the EOC. Labeling of each of the logs with the name of the jurisdiction would help everyone in the room easily identify the events for that jurisdiction.

Recommendation: Label the event logs with the name of the applicable jurisdiction.

Description: Obtain a large map of the county that displays the cities, zone boundaries, and major highways. This map could be used to post traffic control points, reception centers/shelters, and would be a helpful visual aid to all representatives in the EOC.

Recommendation: Obtain, display, and use the map.

Description: The County Judge or designee needs to hold more frequent briefings. This would ensure all staff in the EOC are kept up-to-date on the incident and response activities.

Recommendation: Hold more frequent briefings, at least every hour or as dictated by changing events, in order to keep the staff informed.

Conway County:

Description: The unannounced off-hours drill was demonstrated, but the County Warning Point Dispatchers did not possess an updated calldown roster nor did they appear cognizant of their roles and responsibilities.

Recommendation: Update the calldown roster to include the cellular telephone number and pager number for the Coordinator and the telephone number for the newly relocated EOC. Provide additional training to the Dispatchers on their roles and responsibilities.

Conway County DCC:

Description: Although the High School is handicapped accessible, improvements could be made to make access for people with disabilities more convenient.

Recommendation: Providing a portable decontamination station setup in a handicapped accessible area would be a great asset to this facility.

Description: While there are plenty of volunteers to provide for 24-hour operations, staffing rosters for all operations would simplify the mobilization process for both shifts and make it clear who would work which shift.

Recommendation: Staff and prepare rosters for 24-hour operations.

Atkins Emergency Worker Center:

Description: The County Health Unit personnel at the Atkins EWC indicated they would provide basic first aid to emergency workers including those individuals with fixed contamination (contamination that could not be removed at the EWC). Later, the on-site technical advisor indicated that contaminated individuals would not be allowed in the building where the nurses worked.

Recommendation: Provide additional training for County Health Unit personnel on their roles and responsibilities.

Description: When an emergency worker was found to be contaminated, the staff recorded all contaminated readings and instructed the emergency worker to step off the portal monitor and proceed around the building to the decontamination area. There was not a clear differentiation between the clean and contaminated areas near the entrance to the portal monitor, thus creating the potential for cross contamination.

Recommendation: Make a clear differentiation between the clean and contaminated areas near the entrance to the portal monitor (which leads back to the decontamination area). Use a physical barrier or some type of marking on the ground to make a clear separation between the two areas.

Description: The location of a secure parking area for vehicles with fixed contamination was not known by fire department personnel performing vehicle decontamination at the Atkins EWC.

Recommendation: Fire department personnel should be familiar with the location of all vehicle parking areas at the EWC.

APPENDIX 7

PLANNING ISSUES

SEOF:

Description: Following the initial notification of the TOCD located at the NP&RP by ANO's Control Room, the TOCD could not regain communications with the Control Room for approximately 30 minutes. The Control Room telephone was busy. Because of this, the TOCD could not obtain plant status updates.

Recommendation: Modify the Plan to require that a dedicated telephone line be established for communications between the Control Room and the TOCD. Alternatively, during a possible emergency situation, once the Control Room makes contact with the TOCD, maintain an open line.

FRMTs:

Description: The current procedures independently discuss open and closed window survey measurements and radioiodine air sampling. As a result, FRMTs #2 and #3 only took closed window survey measurements while the air samples were being collected. Open and closed window survey measurements were made before the start of the air sample collection. There is a need to take open and closed window measurements while the air sample is being collected to assure that the air sample is validly collected from within the plume for the full duration of the air sample.

Recommendation: Add some discussion to the radioiodine sampling procedure that emphasizes the need to take open and closed window measurements while the air sample is being collected.

Atkins Emergency Worker Center and Conway County DCC:

Description: Action levels for vehicle decontamination are inconsistent in DCC procedures. Chapter 7 of *Operation of Designated Care Center and Emergency Workers Center*, page 7-7 (rev. 4/98) states: "Vehicle registering readings in excess of 300 cpm when using a CDV-700 will be considered contaminated." Chapter 8, page 8-2 of the same document states: "If survey meter readings are equal to or greater than two times background, the vehicle shall be resurveyed. Following decontamination the vehicle shall be decontaminated. If a surface reading equal to or greater than two times background is again found, surface wipes shall be taken."

Recommendation: Revise Chapter 8 to confirm with the correct action level of 300 cpm.