



FEMA

Final Exercise Report

Browns Ferry Nuclear Power Plant

Licensee: Tennessee Valley Authority

Exercise Date: September 24, 2003

Report Date: December 23, 2003

**FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION IV
3003 Chamblee Tucker Road
Atlanta, Georgia 30341**



FEMA

December 23, 2003

Mr. Luis A. Reyes
Regional Administrator - RII
Nuclear Regulatory Commission
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303

Dear Mr. Reyes:

Enclosed is a copy of the final exercise report for the September 24, 2003, full participation plume exposure pathway exercise of the offsite radiological emergency plans site specific to the Brown Ferry Nuclear Power Plant. The Browns Ferry exercise was originally scheduled on June 4, 2003, however, severe weather in the vicinity of the plant just before the exercise date led to its postponement. This report addresses the evaluation of the plans and preparedness for the State of Alabama and Lauderdale, Lawrence, Limestone and Morgan Counties within the 10-mile Emergency Planning Zone (EPZ) and Madison County, a host county. In addition to State and County personnel, many volunteers, and numerous elected officials also participated in this exercise. The Federal Emergency Management Agency Region IV staff prepared the final exercise report. Copies of this report will be forwarded to the State of Alabama, FEMA and NRC Headquarters by my staff.

FEMA identified a Deficiency during this exercise concerning the length of time between the issuance of Health Orders by the Alabama Radiation Control Agency (RCA) concerning the evacuation and sheltering-in-place of part of the EPZ and the notification of the public through siren activation and EAS message broadcast. FEMA evaluated the remedial drill conducted on October 20, 2003. The State and the counties successfully demonstrated their ability to promptly alert and notify the public after receiving the Health Orders from the RCA.

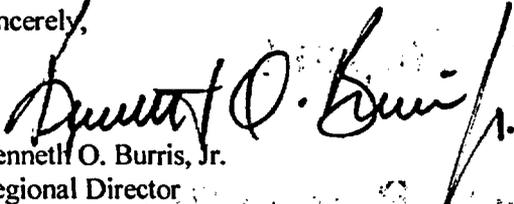
FEMA identified an Area Requiring Corrective Action (ARCA) during the Priceville Volunteer Fire Department's demonstration of monitoring and decontamination of vehicles. This demonstration was conducted on April 11, 2003. During a July 8, 2003 drill, the Priceville Volunteer Fire Department successfully demonstrated the correction of the ARCA.

Based on the results of the out-of-sequence demonstrations, the September 24, 2003 exercise, the October 20, 2003, remedial drill and FEMA's review of Alabama's Annual letters of Certification for 2002 and 2003, the offsite radiological emergency response plans and preparedness for the State of Alabama and the affected local jurisdictions site-specific to the Browns Ferry Nuclear Power Plant can be implemented and are

adequate to provide a reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site. Therefore, the Title 44 CFR, Part 350, approval of the State of Alabama's offsite radiological emergency response plans and preparedness site-specific to the Browns Ferry Nuclear Power Plant granted on July 6, 1990, will remain in effect.

Should you have questions, please contact Robert E. Perdue at 770/220-5464.

Sincerely,



Kenneth O. Burris, Jr.
Regional Director

Enclosure

cc: Ms. Vanessa E. Quinn, Chief
Department of Homeland Security Headquarters
Radiological and Emergency Preparedness
Branch - PT-CR-RP
500 C Street, SW, Room 202
Washington, D. C. 20472

✓ Ms. Debra A. Schneck, Chief
Emergency Preparedness and Health Physics Section
Operator Licensing, Human Performance and Plant
Support Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-0001

U.S. Department of Homeland Security
Region IV
3003 Chamblee Tucker Road
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I. EXECUTIVE SUMMARY

On September 24, 2003, a full participation exercise was conducted for the plume exposure emergency planning zone (EPZ) around the Browns Ferry Nuclear Power Plant (BFNPP) by the Federal Emergency Management Agency (FEMA) Region IV. The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures. The Browns Ferry exercise was originally scheduled on June 4, 2003. Severe weather events in the vicinity of the plant just before the exercise led to its postponement until September 24, 2003.

The previous evaluated exercise at this site was conducted on June 6, 2001. The qualifying emergency preparedness exercises were conducted on September 10, 1981 and November 4, 1987.

FEMA wishes to acknowledge the efforts of the many individuals from the State of Alabama, and Lauderdale, Lawrence, Limestone, Madison and Morgan Counties, who participated in this exercise. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. FEMA wishes to recognize the special contribution volunteers made to the success of this exercise and their commitment to protect the health and safety of the public in their communities. Cooperation and teamwork of all the participants was evident during this exercise.

This report contains the evaluation of the biennial exercise as well as of out-of-sequence activities during the week of April 11-14, 2003. The out of-sequence activities included: traffic control points (TCP), emergency worker decontamination, protective action for schools, river warning, reception and congregate care and a medical services drill.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and implemented them. A Deficiency was identified during this exercise regarding the length of time between the issuance of Health Orders concerning evacuation and shelter-in-place of part of the EPZ and the notification of the public through siren activation and Emergency Alert System (EAS) broadcast. A remedial drill was conducted on October 20, 2003. During the remedial drill the State and the counties demonstrated their ability to promptly alert and notify the public after receiving the Health Orders from the Radiation Control Agency (RCA). An Area Requiring Corrective Action (ARCA) was identified during the demonstration of monitoring and decontamination of vehicles by the Priceville Volunteer Fire Department. The Priceville Volunteer Fire Department demonstrated the correction of the ARCA during a July 8, 2003 drill.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear planning and response. FEMA's activities are conducted pursuant to Title 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

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

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- Taking the lead in off-site emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (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 Federal agencies with responsibilities in the radiological emergency planning process:
 - Department of Agriculture (USDA)
 - Department of Commerce (DOC)
 - Department of Energy (DOE)
 - Department of Health and Human Services (DHHS)
 - Department of the Interior (DOI)
 - Department of Transportation (DOT)
 - Environmental Protection Agency (EPA)
 - Food and Drug Administration (FDA)
 - Nuclear Regulatory Commission (NRC)

Representatives of these agencies serve on the FEMA Region IV Regional Assistance Committee (RAC) which is chaired by FEMA.

Formal submission of the RERPs for the BFNPP to FEMA Region IV by the State of Alabama and involved local jurisdictions occurred on August 30, 1982. A revised plan was submitted to FEMA on February 10, 1989. Formal approval of the RERP was granted by FEMA on July 6, 1990, under 44 CFR 350.

A REP exercise was conducted on September 24, 2003, by FEMA Region IV to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the BFNPP. The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (ORO) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the federal evaluator team, with final determinations made by the Chief Evaluator and the Region IV RAC Co-Chairperson, and approved by the Regional Director.

The criteria utilized in the FEMA evaluation process are contained in:

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of RERPs and Preparedness in Support of Nuclear Power Plants," November 1980;
- "Radiological Emergency Preparedness: Exercise Evaluation Methodology," April 25, 2002.

Section III of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section of the report contains a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities which were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

Section IV of this report, entitled "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise criteria at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains: (1) descriptions of all Deficiencies and ARCAs assessed during this exercise, recommended corrective actions, and the State and local governments' schedule of corrective actions for each identified exercise issue and (2) descriptions of unresolved ARCAs assessed during previous exercises and the status of the ORO's efforts to resolve them.

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the September 24, 2003 exercise to test the offsite emergency response capabilities in the area surrounding the BFNPP.

A. Plume Exposure Pathway EPZ Description

The BFNPP is located approximately 10 miles north west of the City of Decatur, Alabama, on the bank of the Tennessee River. Parts of the Counties of Lauderdale, Lawrence, Limestone and Morgan are within the 10-mile EPZ. Although the EPZ is largely rural and agricultural in use, parts of the EPZ are a mix of industrial, business and residential use. The population of the 10-mile EPZ is approximately 40,100.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the BFNPP exercise on September 24, 2003.

STATE OF ALABAMA

Department of Agriculture and Industries
Department of Conservation
Department of Environmental Management
Department of Human Resources
Department of Public Health
Department of Public Safety
Department of Transportation
Emergency Management Agency
Forestry Commission
Governor's Office
National Guard

RISK JURISDICTIONS

Lauderdale County
Lawrence County
Limestone County
Morgan County

SUPPORT JURISDICTION

Madison County

PRIVATE/VOLUNTEER ORGANIZATIONS

- American Red Cross
- Decatur Amateur Radio Club
- Radio Amateur Civil Emergency Service
- Salvation Army
- Amateur Radio Emergency Services

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the BFNPP exercise on September 24, 2003. Included are times notifications were made or actions taken by the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: September 24, 2003 - Browns Ferry Nuclear Power Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken									
		SEOC	FEOC	SRMAC	STATE RCA	JIC	LAUDERDALE COUNTY	LAWRENCE COUNTY	LIMESTONE COUNTY	MORGAN COUNTY	MADISON COUNTY - HOST
Unusual Event											
Alert	0810	0824	0830	0810	0818		0831	0832	0830	0832	0830
Site Area Emergency	0931	0954	0950	0931	0937		0956	0957	0956	0956	0955
General Emergency	1105	1115	1116	1105		1115	1135	1135	1134	1138	1135
Simulated Rad. Release Started	0935		0935	1105	Puff 1025 End 1035	1015	1135	1236	1025	0956	0955
Simulated Rad. Release Terminated	1257			1257			End Ex		End Ex	1006	
Facility Declared Operational		0842	0930			0950	1022	1100	1020	0904	0830
Declaration of State of Emergency											
State		1013	1105								1013
Local								1111	1015	1030	1136
Exercise Terminated		1307	1305	1300	1030	1305		1305	1305	1305	
Early Precautionary Actions:											
Restricted Access within 2 miles/TCPs							None	0957	1020	1018/1030	
School/daycare relocation								0957	1030	1007	
River clearance								0957	1020	1030	
Special needs notification/evacuation								0957	1020	1007	
Evacuate Mallard Creek Campground								0957			
Evacuate Mallard Fox Creek Wildlife Park								0957			
Limestone area health facility relocation									1020		
Health Orders 1 & 2 -											
Public Notification & Restricted Access				0952							
1st Protective Action Decision											
Public Warning							1011	1011	1011	1011	
1st Siren Activation											
1st Siren Activation							1022	1021	1021	1021	
1st EAS Message											
1st EAS Message							1023	1023	1022	1021	
Implementation of Health Orders 3 & 4											
Evacuate Zones: A2, B2, F2, G2, A5 and B5											
Shelter In-Place Zones: A10, B10 and City of Athens											
Public Notification & Restricted Access											
Evacuate & Shelter-in-place				1120							
2nd Public Notification											
General Emergency Notification by Counties							1146	1146	1146	1146	
2nd Siren Activation:											
2nd Siren Activation:							1150	1150	1150	1150	
2nd EAS Message											
2nd EAS Message							1153	1152	1155	1156	
Implementation of Health Orders 3 & 4											
Evacuate Zones: A2, B2, F2, G2, A5 and B5							1209	1209	1209	1209	
Shelter In-Place Zones: A10, B10 and City of Athens											
3rd Siren Activation											
3rd Siren Activation							1219	1219	1219	1219	
3rd EAS Message											
3rd EAS Message							1222	1221	1221	1221	
KI Decision Issue to Field Team, do not ingest				1137							

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 September 24, 2003, exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the BFNPP.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in Exercise Evaluation Methodology, April 2002. Detailed information on the exercise criteria 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 criteria which were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status of those objectives is indicated by the use of the following letters:

- M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)
- D - Deficiency assessed
- A - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)
- N - Not Demonstrated (Reason explained in Subsection B)
- C - Credit Granted for response to emergencies

Table 2. Summary Results of Exercise Evaluation

DATE AND SITE: September 24, 2003 – Browns Ferry Nuclear Power Plant

ELEMENT/Sub-Element	SEOC	FEOC	Dose Assmt.	FMT	SRMAC	JIC	Lauderdale	Lawrence	Limestone	Morgan	Madison
1. EMERGENCY OPERATIONS MANAGEMENT											
1.a.1. Mobilization	M	M	M		M	M	M	M	M	M	M
1.b.1. Facilities	M	M	M		M	M	M	M	M	M	M
1.c.1. Direction and Control	D/M		M				M	M	M	M	M
1.d.1. Communications Equipment	M		M	M	M		M	M	M	M	M
1.e.1. Equipment & Supplies to Support Operations		M	M	M	M	M	M	M	M	M	M
2. PROTECTIVE ACTION DECISION MAKING											
2.a.1. Emergency Worker Exposure Control							M	M	M	M	M
2.b.1. Rad Assessment & PARs & PADs Based on Available Info	M		M				M	M	M	M	
2.b.2. Rad Assessment and PARs and PADs for the General Public	M	M	M				M	M	M	M	
2.c.1. Protective Action Decisions for Special Populations							M	M	M	M	
2.d.1. Rad Assessment & Decision Making for Ingestion Exposure											
2.e.1. Rad Assessment & Decision Making for Relocation, Re-entry & Return											
3. PROTECTIVE ACTION IMPLEMENTATION											
3.a.1. Implementation of Emergency Worker Control			M	M	M		M	M	M	M	M
3.b.1. Implementation of KI Decisions				M			M	M	M	M	M
3.c.1. Implementation of PADs for Special Populations							M	M	M	M	
3.c.2. Implementation of PADs for Schools								M	M	M	
3.d.1. Implementation of Traffic and Access Control							M	M	M	M	M
3.d.2. Impediments to Evacuation and Traffic and Access Control							M	M	M	M	M
3.e.1. Implementation of Ingestion Decisions Using Adequate Info											
3.e.2. Implementation of IP Decisions Showing Strategies and Instructional Materials											
3.f.1. Implementation of Relocation, Re-entry and Return Decisions											
4. FIELD MEASUREMENT and ANALYSIS											
4.a.1. Plume Phase Field Measurement & Analysis Equipment											
4.a.2. Plume Phase Field Measurement & Analysis Management			M	M							
4.a.3. Plume Phase Field Measurements & Analysis Procedures			M	M							
4.b.1. Post Plume Field Measurement & Analysis				M							
4.b.2. Laboratory Operations											
5. EMERGENCY NOTIFICATION & PUBLIC INFO											
5.a.1. Activation of Prompt Alert and Notification	D/M						M	M	M	M	
5.a.2. Activation of Prompt Alert and Notification 15-Minute (Fast Breaker)											
5.a.3. Activation of Prompt Alert and Notification Backup Alert and Notification	M								M	M	
5.b.1. Emergency Info and Instructions for the Public and the Media	M					M	M	M	M	M	
6. SUPPORT OPERATIONS/FACILITIES											
6.a.1. Monitoring and Decon of Evacuees and EWs and Registration of Evacuees							M	M	M	A/M	
6.b.1. Monitoring and Decon of Emergency Worker Equipment							M	M			
6.c.1. Temporary Care of Evacuees							M	M	M	M	M
6.d.1. Transport and Treatment of Contaminated Injured Individuals										M	

LEGEND: M = Met A = ARCA D = Deficiency N = Not Demonstrated

NOTE: Deficiency corrected October 20, 2003

B. Status of Jurisdictions Evaluated

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

- **Met** - Listing of the demonstrated exercise criteria 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 criteria under which one or more Deficiencies was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Area Requiring Corrective Actions** - Listing of the demonstrated exercise criteria under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises 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 criteria which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.
- **Prior ARCAs - Resolved** - Descriptions of ARCAs assessed during previous exercises which were resolved in this exercise and the corrective actions demonstrated.
- **Prior ARCAs - Unresolved** - Descriptions of ARCAs assessed during prior exercises which were not resolved in this exercise. Included is the reason the ARCA remains unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

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

- A **Deficiency** is defined in FEMA-REP-14 as "...an observed or identified inadequacy organizational performance in an exercise that could cause a finding that offsite 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 reports within each Region. It is also used to expedite tracking of 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.
- **Criterion Number** – An alpha-numerical-alpha designation corresponding to the criterion number in the Exercise Evaluation Methodology.
- **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 ALABAMA

1.1 State Emergency Operations Center

The State Emergency Operations Center (SEOC) is co-located with the State Emergency Management Agency (EMA) in Clanton, Alabama. The SEOC effectively responded to requests for assistance from the counties. Additionally, the SEOC issued a State Declaration of Emergency from the Governor. The Operations Branch controlled emergency reponse operations. The Health Orders issued for the evacuation and shelter-in-place protective action decision (PAD) were not promptly communicated to the counties.

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.b.1, 2.b.2, 5.a.3 and 5.b.1
- b. **DEFICIENCY:**

Issue No.: 07-03-1.c.1, 5.a.1-D-01

Condition: The public was not notified of the evacuation and shelter-in-place orders until an hour after the decision was made. The RCA issued Health Orders 3 and 4 at 1120. The two Health Orders encompassed the Health Department's decision to order the evacuation of Sectors, A-2, B-2, F-2, G-2, A-5 and B-5 and the shelter-in-place of Sectors A-10, B-10 and the City of Athens. At 1155, the counties were notified on the Tennessee Valley Authority (TVA) Hotline that the Health Orders were on the EM 2000 computer system. Following coordination, the counties activated their sirens at 1219 and broadcast the EAS messages between 1221 and 1222.

Possible Cause: The Alabama Emergency Management Agency (AEMA) and the RCA did not consistently coordinate with the counties to ensure that they had received Health Orders 3 and 4. The Standard Operating Guide (SOG), August 2003, did not contain specific instructions on actions, to take at the General Emergency (GE) or what to do with the health orders issued by RCA. This lack of specificity was compounded by inexperienced personnel in the SEOC.

Reference: Alabama RERP for Nuclear Power Plants, pages A-1, A-2, A-3, A-19 and BFNPP Standard Operating Guide (SOG) pages 5, 8-9, 11, 33 and 37. The references indicate that once AEMA receives Health Orders, it has the responsibility to promptly convey this information to the affected counties with a sense of urgency and importance, and further delineates the variety of means that the State has at its disposal for communicating with the counties. Evaluation area criteria 1.c.1 and 5.a.1 (NUREG-0654, A.1.d; A.2.a, b and E.6.).

Effect: The public was not notified of the PADs in a timely manner and therefore, increased its risk of unnecessary exposure to the radioactive plume.

Recommendations: Review and revise procedures as necessary to ensure prompt transmission of PADs to the counties and subsequent alert and notification of the public. One possible solution would be to conduct a conference call over the TVA hotline with AEMA, RCA and the counties to discuss the Health Orders and to determine the time for siren activation and EAS broadcast. Train appropriate staff in the procedures.

Remedial Action Demonstrated: The SOG was revised in October 2003, and included specific actions to accomplish after a GE declaration. On October 20, 2003, the State conducted a remedial drill. At 1530, the Counties were notified by the SEOC that Health Orders 3 and 4 had been issued by RCA and that a GE had been declared at the BFNPP. Health Orders 3 and 4 called for the evacuation of zones A-2, B-2, G-2, F-2, A-5 and B-5 and the shelter-in-place of zones A-10, B-10 and the City of Athens. Immediately, after this call, Limestone County notified all the counties and arranged for them to get back on the "Hoot and Holler" at 1544 for the coordination of siren activation and EAS message broadcast. At 1544, the Counties decided to activate the sirens at 1550 and broadcast their EAS messages at the same time. The sirens were activated and the EAS messages were broadcast at the agreed upon times. The SEOC was notified of the Counties' decision at 1545. The remedial drill terminated at 1559. The State and Counties successfully demonstrated their ability to promptly notify the public of PADs.

- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

1.2 Forward Emergency Operations Center

The Forward Emergency Operations Center (FEOC) is co-located with the Morgan County EOC and serves as the liaison between the AEMA and RCA. Staff were professional and performed their duties conscientiously. The Public Information Officers (PIO) faxed Health Orders to the SEOC. The State Liaison Officer initiated the 1155 "TVA Hotline" call to the counties to inform them of the PADs once he realized that the counties had not received them.

- a. **MET: Criteria 1.a.1, 1.b.1, 1.e.1 and 2.b.2**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**

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

1.3 Dose Assessment - Montgomery

RCA's State Radiological Monitoring Assessment Center (SRMAC) was established by emergency response personnel in a dedicated area of their Montgomery Headquarters and provided the initial State radiological response to the exercise event. The SRMAC Director and staff were well trained, organized and prepared. All necessary actions were performed in a highly effective and timely manner. Communications within the SRMAC and external entities were effective. SRMAC facilities were sufficient to accommodate the necessary staff and appropriate displays. The SRMAC Director effectively managed all operations. Control of the SRMAC was subsequently transferred to the Decatur SRMAC.

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

1.4 State Radiological Monitoring Assessment Center - Decatur

The SRMAC effectively allowed all participating organizations to accomplish their tasks during this emergency operation.

Communications, coordination, and the flow of technical information among the utility operator and State officials were outstanding. The State staff performed independent accident analyses, to include radiological dose assessment, the participation of radiological monitoring teams, and the implementation of appropriate protective actions.

State officials deployed to the SRMAC were well trained and performed their respective responsibilities in a professional and efficient manner.

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.d.1, 1.e.1 and 3.a.1
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.5 Radiological Field Monitoring Teams

Two State field teams were deployed and successfully demonstrated their capabilities. The teams demonstrated appropriate use of instrumentation in conducting monitoring and sampling at their respective locations. Both ambient radiation measurements and air sampling for radioiodines and particulates were demonstrated. Communications were excellent. Both teams demonstrated their capabilities to monitor and control their radiation exposure. They were well equipped, well organized, motivated, and exhibited a cooperative attitude and willingness to improve their skills.

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

1.6 Joint Information Center

The State staff at the Joint Information Center (JIC) demonstrated the capability to coordinate the development and dissemination of clear and accurate information to the news media. The very knowledgeable and professional public information team at the JIC coordinated news releases and information from the BFNPP, SEOC, and EOCs of the four affected counties. The JIC is well equipped and participants were very well trained. News conferences were very well organized and timely. The public inquiry team was proactive and effective in coordinating with the State PIO in identifying and resolving potentially critical trends and issues. The staffs of the various agencies functioned smoothly and professionally to accomplish all required demonstration criteria.

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.e.1 and 5.b.1
- b. **DEFICIENCY:** NONE
- c. **AREA REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2. RISK JURISDICTIONS

2.1 LAUDERDALE COUNTY

2.1.1 Emergency Operations Center

The EOC is equipped to perform 24-hour operations in support of an emergency at the BFNPP. The staff is comprised of full-time county personnel. Personnel understood their responsibilities, were included in decision-making and successfully demonstrated their ability to respond to an emergency. The EOC used the EM 2000 Tracker system to receive messages from the AEMA and the TVA Hotline to coordinate protective actions. The Emergency Management Director coordinated EOC staff efforts, provided current information and requested agency updates. EOC staff performed their assigned duties professionally. The Rogersville Emergency Medical Services (EMS) had an updated list of the special needs population. The county had sufficient resources to evacuate the special needs populations.

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.b.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 5.a.1 and 5.b.1
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.2 Traffic Control Points

TCPs were successfully demonstrated out-of-sequence, on April 7, 2003 through interview with representatives of the Rogersville Police Department and the Lauderdale County Sheriff's Office. Representatives interviewed were familiar with the use of individual dosimetry, potassium iodide (KI), record keeping requirements and turnback values. All the proper equipment was available, such as barriers, signs, cones, tape and police cars. Personnel were knowledgeable of the procedures for removing road impediments.

- a. **MET: Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 3.d.2**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs -- RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.1.3 Reception and Congregate Care

Monitoring, decontamination and registration of evacuees was demonstrated on April 7, 2003, at Lauderdale County High School. Separate areas were available for parking clean and contaminated vehicles. Amateur Radio Emergency Services (ARES) monitored evacuees and vehicles as they entered the reception center. Emergency workers were knowledgeable of monitoring procedures, exposure control, KI and dosimetry, and how to limit cross-contamination. The Rogersville Volunteer Fire Department personnel decontaminated the vehicles that were contaminated. The Department of Human Resources (DHR) provided personnel to register evacuees into the reception center once they were cleared for entry. Personnel were knowledgeable of and followed their Standard Operating Guide (SOG) in registering and tracking evacuees.

Congregate care was professionally demonstrated with a walkthrough by the Northwest Alabama Chapter of the American Red Cross (ARC) at Bradshaw High School through interview and walkthrough. The shelter manager was knowledgeable of shelter operations and used a diagram showing the location of essential services in the facility. Personnel responsible for health, food, mental health counseling and sleeping services were knowledgeable of their duties and conscientious in their performance. The facility used a capacity to care for 1500 evacuees. The Florence Police Department provided security and performed traffic control duties.

- a. MET: Criteria 3.a.1, 3.b.1, 6.a.1 and 6.c.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.4 Emergency Worker Decontamination

Emergency worker and vehicle monitoring and decontamination were demonstrated at Lauderdale High School on April 7, 2003. Lauderdale County ARES personnel surveyed the emergency workers and the Rogersville Volunteer Fire Department monitored and decontaminated vehicles. Personnel were knowledgeable of exposure limits and wore appropriate direct-reading and permanent-record dosimetry.

- a. MET: Criteria 1.e.1, 3.a.1, 3.b.1, 6.a.1 and 6.b.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2 LAWRENCE COUNTY

2.2.1 Emergency Operations Center

The EOC was fully staffed by paid workers, volunteers and elected officials. The EOC Director effectively managed the County's response and gave frequent briefings, including receiving feedback from the EOC staff. Sirens were sounded (simulated) after coordinating with the other counties and the State. All decisions were consistently coordinated with the appropriate individuals. The staff was efficient, decisive and professional.

Protective actions for special populations were satisfactorily demonstrated on April 8, 2003, by interview with the Director of the County Department of Public Transportation. Ambulances are available through the County Rescue Squad. The County has ample resources to care for and evacuate the special needs population.

- a. **MET:** Criteria 1.a.1, 1.c.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.b.2, 3.a.1, 3.b.1, 3.c.1, 5.a.1 and 5.b.1
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2.2 Protective Actions For Schools

Protective actions for schools were successfully demonstrated on April 8, 2003, through interviews with principals from R.A. Hubbard Elementary School, East Lawrence Elementary School, East Lawrence High School, Courtland High School; East Lawrence Middle School and the Tennessee Valley Learning Center. A representative from the Superintendents' office was present and called his office when the decision was made to relocate the students. Students are relocated on a precautionary basis at the Site Area Emergency (SAE). Private schools have tone-alert radios and their own transportation, and will receive support from Lawrence County if needed.

Bus drivers are contacted by cell phone and school personnel are trained as backup bus drivers. Buses are escorted by safety resource officers. All personnel were professional, very knowledgeable and conscientious about the implementation of school relocation procedures.

- a. **MET:** Criterion 3.c.2
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2.3 Traffic Control Points/River Evacuation

Traffic control and access points were demonstrated through interview with officers from the Moulton City Police and the Lawrence County Sheriff's Office on April 8, 2003. Officers were knowledgeable of their responsibilities associated with TCPs. The officers had maps and procedures prepared by Lawrence County EMA. They indicated where they would set up TCPs. Officers explained how they are issued personal dosimetry and KI. They were knowledgeable of the use of dosimetry, KI and exposure limits.

Out-of sequence river evacuation procedures were demonstrated through interview with representatives of Lawrence County Rescue Squad on April 8, 2003. All rescue personnel report to the EOC for dosimetry, KI, instructions and SOPs. Representatives interviewed were knowledgeable of the use of individual dosimetry, record keeping and turn back values. They were also familiar with procedures for warning individuals on the river by using the public address systems on their boats.

- a. **MET: Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2 and 5.a.3**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.2.4 Reception and Congregate Care

Monitoring, decontamination and registration of evacuees and emergency workers were successfully demonstrated on April 8, 2003 at the Moulton Recreation Center. The Moulton Fire Department personnel followed established procedures in monitoring and decontaminating vehicles. This facility has ample space for both parking clean and contaminated vehicles. Arriving individuals were directed to an entrance that prevents contamination of the entire area. Individuals were registered at the reception center after they were appropriately monitored and decontaminated. Clean evacuees were stamped on their hand to indicate that they were clean and ready to be registered into the reception center. Monitors were provided direct-reading and permanent-record dosimetry. They also received KI and were familiar with its use.

At the congregate care center, evacuees and emergency workers had to show that they had been stamped on the hand. They also carried the registration from the reception center. The Morgan-Lawrence County Chapter of the ARC effectively managed the congregate care center and appropriately registered evacuees into the facility on ARC forms. During

an informative walkthrough, personnel in charge of sleeping, health services and mental health counseling manifested a clear knowledge of their duties.

- a. **MET:** Criteria 3.a.1, 3.b.1, 6.a.1, 6.b.1 and 6.c.1
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2.5 Emergency Worker Decontamination

Emergency worker and vehicle monitoring were successfully conducted on April 8, 2003, at the Moulton Recreational Center. The Moulton County Volunteer Fire Department monitored emergency workers and vehicles. The Lawrence County rescue squad surveyed emergency workers after they were decontaminated to ensure they were clean. There was ample space to separate and park clean and contaminated vehicles. All personnel were knowledgeable of exposure limits, wore appropriate direct-reading and permanent-record dosimetry and used appropriate monitoring and decontamination methods.

- a. **MET:** Criteria 1.e.1, 3.a.1, 3.b.1, 6.a.1 and 6.b.1
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.3 LIMESTONE COUNTY

2.3.1 Emergency Operations Center

Activation of the EOC was prompt. Upon attaining an operational status, agency representatives were briefed on their roles and the resources available to assist them in the decision-making process. While several elected officials were present and added to the realism of the exercise, the Emergency Management Director established a positive atmosphere. In addition to recurring and timely briefings, he led thought provoking discussions, discussed the timing of critical tasks, and focused EOC representatives on the required tasks. Members of the EOC staff displayed a positive attitude.

Protective actions for special populations were satisfactorily demonstrated on April 9, 2003, by interview with the Director of the Limestone County Aging Program and Limestone County EMA. The County used SOGs. Ample resources were available from the Athens/Limestone Hospital Ambulance Service to care for and evacuate the special population.

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 5.a.1, 5.a.3 and 5.b.1
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.3.2 Protective Actions For Schools

Protective actions for schools in Limestone County were successfully demonstrated through interview on April 9, 2003. Clements High School participated during the interview. The county's transportation coordinator and the Principal of Clements High School indicated that schools are relocated at SAE. Bus drivers are contacted by cell phone or two-way radios. Tone-alert radios are located at the seven public schools in the EPZ. The school buses are escorted by the Limestone County Sheriff's Department personnel who carry dosimetry and KI. Limestone County has enough resources and capable personnel to relocate schools.

- a. **MET:** Criterion 3.c.2
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:**
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.3.3 Traffic Control Points

TCPs were demonstrated through interview with representatives of the Limestone County Sheriff's Department on April 9, 2003. All TCP personnel report to the Athens/Limestone Rescue Squad building to pick up dosimetry, KI and ingestion instructions. Representatives interviewed were knowledgeable of the use of individual dosimetry, record keeping, turn back value and KI. Law enforcement representatives were familiar with procedures for removing road impediments.

- a. **MET:** Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 3.d.2
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.3.4 Reception and Congregate Care

Monitoring, decontamination and registration of evacuees was demonstrated on April 9, 2003, at West Limestone County High School, which serves as the reception and congregate care center. The reception center is equipped with a portal monitor. Limestone emergency management personnel who staffed the reception center were knowledgeable of their responsibilities and used appropriate monitoring, contamination control and decontamination procedures. Decontaminated evacuees, with stamps on their hands, were registered into the reception center. Department of Public Health staff were present and prepared to issue KI to the public, if directed by the State Health Department.

Congregate care was successfully demonstrated by conducting a walkthrough. The Limestone Chapter of the ARC appropriately registered individuals into the shelter. The Shelter Manager indicated the 800-person capacity facility provides sleeping, health and mental health counseling.

- a. **MET: Criteria 1.e.1, 3.a.1, 3.b.1, 6.a.1 and 6.c.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.4 MORGAN COUNTY

2.4.1 Emergency Operations Center

The EOC was effectively activated and reflected comprehensive planning by the Director of Operations and EMA planning officer. The EOC was well arranged and setup with excellent equipment as well as status boards, logs, emergency plans, procedures and rosters. The EOC is linked to the State and other relevant counties by multiple radio and telephone systems. The EOC is equipped and staffed to support 24-hour operations during an emergency situation. Discussions were consistent on the safest and most effective measures to be taken to protect both emergency workers and the public. EOC staff, including volunteers, were professional and displayed a positive attitude.

Protective actions for special populations were successfully demonstrated on April 11, 2003, by interview with the representatives from Hospice of the Valley, Area Transportation Commission/Council on Aging, Salvation Army, North Alabama Regional Hospital, Decatur EMS and Morgan County EMA. Each organization is responsible for providing different services to meet the needs of special population. The County has the necessary resources to care for and evacuate the special needs population.

- a. **MET: Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 5.a.1, 5.a.3 and 5.b.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**

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

2.4.2 Protective Actions For Schools

Morgan County demonstrated protective actions for schools, out-of-sequence, on April 11, 2003. Schools participating in the interview included Woodward Elementary School and Austin High School, both located in Decatur. The two principals, the pupil personnel director from the Superintendents' Office, and the Assistant Superintendent for Transportation Technology Safety participated in the interview. Once the decision is made to relocate the schools, the school representative in the EOC notifies the schools by telephone. The principals then alert and mobilize the bus drivers by cell phones. All of the schools have tone-alert radios. All personnel were knowledgeable of their duties and enthusiastic. The County had enough personnel and resources to effectively relocate students.

- a. **MET: Criterion 3.c.2**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.4.3 Traffic Control Points

TCPs were demonstrated by interview, April 11, 2003. A representative from the Decatur City Police Department displayed knowledge of the plans and procedures. He successfully demonstrated knowledge of dosimetry use, turn back values, KI and other important information including the removal of impediments to traffic.

- a. **MET: Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 3.d.2**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**

- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.4.4 River Evacuation

River evacuation was demonstrated by interview with representatives from the Morgan County Rescue Squad, Alabama Marine Police and Morgan County EMA at the EOC on April 11, 2003. Representatives were knowledgeable of current plans and procedures for river evacuation. They described procedures they follow in blockading the river to preclude entry into the 10-mile EPZ and alerting those on and along the river of a potential emergency situation. Sufficient personnel and equipment are available to promptly implement river alerting and evacuation procedures. Officers were knowledgeable of direct-reading and permanent-record dosimetry and KI that they carry. They were also aware of exposure limits and maintaining records of dosimetry readings.

- a. **MET: Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 5.a.3**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.4.5 Reception and Congregate Care

Reception and congregate care was demonstrated at Priceville High School on April 11, 2003. The Brindlee Mountain Volunteer Fire Department monitored the evacuees and emergency workers. The Priceville Volunteer Fire Department surveyed the vehicles. The reception center was set up with signs indicating the location of the registration, monitoring and decontamination stations, and the registration desk. Clean evacuees were sent to the registration desk. Contaminated evacuees were appropriately monitored at the entrance to the reception center, sent to the showers and re-monitored. The process would be repeated until they were clean. The DHR appropriately registered individuals into the reception center. The monitoring personnel had a working knowledge of KI and direct-reading and permanent-record dosimetry that they wore. The Priceville Volunteer Fire Department personnel did not practice good contamination control and did not properly monitor vehicles.

The Morgan-Lawrence Chapter of the ARC appropriately registered six individuals into the shelter. Only the gym was available because school was in session. The shelter

manager thoroughly discussed feeding health, mental health, counseling and other services that ARC provides for evacuees.

- a. **MET:** Criteria 1.e.1, 3.a.1, 3.b.1, 6.a.1 and 6.c.1
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** YES

Issue No.: 07-03-6.a.1-A-01

Condition: The Priceville Volunteer Fire Department used inappropriate monitoring methods, exposed themselves to contaminated water and did not practice good contamination control. During the monitoring of the vehicle, the firemen continuously touched the tires and body of the vehicle, seemingly unaware that the probe cover needed to be changed. While surveying the vehicle tires, two of the firemen crawled on the ground in the contaminated water unaware that they were contaminating themselves, their protective clothing, and probably received false radiation readings.

Possible Cause: The staff who were trained to do the monitoring and decontamination were not present for the demonstration. Hence, the untrained second shift personnel had to conduct the monitoring, but did not have the depth of knowledge to use appropriate survey and contamination avoidance methods.

Reference: Criteria 6.a.1; Morgan County EMA Browns Ferry SOP, Vehicle Decontamination, March, 2003.

Effect: The Priceville Volunteer Fire Department personnel spread contamination by using inappropriate monitoring methods. The probe cover was never changed even though the monitor continuously touched the tires and the bottom of the automobile. Contamination spread and gave the monitor a false reading. The monitor who continuously crawled around in the contaminated water on the ground contaminated himself and his protective clothing. The probe was dragged in the contaminated solution on the ground continuously. This further spread contamination.

Recommendation: The Priceville Volunteer Fire Department should be provided training in monitoring, contamination control and decontamination.

Corrective Action Demonstrated: The Priceville Volunteer Fire Department received additional training in the monitoring and decontamination of vehicles. During a July 8, 2003 demonstration at the Priceville Fire Station, the firemen used appropriate monitoring, contamination control and decontamination methods in cleaning a contaminated vehicle. The probes were covered with plastic and the

firemen moved the probe at the right speed and held it at the correct distance while surveying the vehicle. The firemen avoided splashing water and did not allow themselves to be exposed to contaminated solutions. They wore full protective clothing, regularly read and recorded their dosimetry, knew their exposure limits, and washed and monitored the vehicle continuously until it had the lowest possible level of contamination. The firemen had a working knowledge of KI, and knew about the spaces where clean and contaminated vehicles were separately parked. The Priceville Volunteer Fire Department personnel properly demonstrated the monitoring and decontamination of public vehicles arriving at the reception center and corrected the ARCA identified during the April 11, 2003 demonstration.

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

2.4.6 Medical Drill

The BFNPP medical drill was conducted on December 2, 2003. Organizations involved in the medical drill included Decatur EMS and the Parkway Medical Center, both located in Decatur, Alabama. The drill was initiated when the Decatur EMS was dispatched to care for a patient who was involved in a roadside accident. The EMS crewmembers were told of possible radiation contamination in the area because the BFNPP had declared a GE and radioactive materials were released into the environment.

The EMS personnel did a quick assessment of the patient who had a contaminated laceration over his left eye. The EMS personnel placed a sheet beside the patient. Medical supplies were appropriately placed on this sheet. The EMS staff cut off the patients' contaminated outer clothing and removed his shoes. They placed him on a backboard, wrapped him in a sheet, and rolled him to the ambulance to be transported to Parkway Medical Center. Appropriate contamination control was demonstrated before, and during transport and transfer of the patient from the EMS crew to the Parkway Medical Center staff.

The Parkway Medical Center staff was well prepared for the arrival of the patient. A protective covering had been placed on the walkway and extended up to the entrance of the Emergency Room (ER). The hallway and the ER floors were covered with a protective plastic. The medical facility monitor surveyed the patient on his arrival. The patient was appropriately transferred to the Parkway Medical Center staff after being placed on a clean gurney. Inside of the ER, the staff followed appropriate monitoring, contamination control and decontamination methods. Drapes were placed around the eye laceration and the nurse controlled the splashing of water while using a syringe to remove contamination. Swabs were used to clean and dry the area. The drapes were removed

and residual water was dried before the laceration was surveyed. This process was repeated until the contamination level had gone from 1400 counts per minute (cpm) down to 100 cpm. Eye, nasal and ear swabs were taken to determine if the patient had internal contamination. Clean paper was placed on the ER floor for the gurney to roll on as the patient was carried out of the ER. The ER staff followed appropriate ER exit procedures as they left the ER and the Decatur EMS staff and their ambulance were appropriately surveyed and released.

The ER staff wore protective clothing. They also carried appropriate direct and permanent record dosimetry. The Parkway Medical Center staff worked well as a team and successfully demonstrated all criteria.

- a. **MET: Criteria 1.e.1, 2.a.1, 3.a.1 and 6.d.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

3. SUPPORT JURISDICTION

3.1 MADISON COUNTY

3.1.1 Emergency Operations Center

The new EOC is well equipped and has the capability to support a sustained 24-hour operation. The EOC Director effectively exercised direction and control over staff that included full-time and volunteer personnel from various agencies. EOC personnel understood and performed their responsibilities successfully. The EOC Director periodically briefed personnel on the emergency at the BFNPP. Redundancy in the EOC's communications capabilities was demonstrated as the Director coordinated response activities with the State and other counties. The EOC Director and staff were highly professional and displayed the ability to respond to an emergency at the BFNPP.

- a. **MET: Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1 and 1.e.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**

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

3.1.2 Traffic Control Points

TCPs were demonstrated out-of-sequence through interview with representatives of the Huntsville City Police, Alabama A&M University Police, Huntsville City Traffic Operations and the Alabama Department of Transportation (DOT) on April 10, 2003. City Traffic Operations and Alabama DOT are responsible for erecting signs along routes to direct traffic to reception centers. The City and University Police are stationed at intersections to facilitate the flow of traffic. Madison County had sufficient personnel and equipment to maintain the traffic flow and remove any traffic impediments. Personnel were familiar with dosimetry use, exposure limits, KI and road impediment removal.

- a. **MET: Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 3.d.2**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

3.1.3 Reception and Congregate Care

Monitoring, decontamination and registration of evacuees was successfully demonstrated at the Alabama A&M University Reception Center (Field House) on April 10, 2003. Evacuees come from Limestone and Morgan Counties to this reception center. Evacuees were interviewed by DHR personnel to ensure that they had been processed through the monitoring center. Evacuees were appropriately surveyed with portable survey instruments by the Madison County Department of Public Health. Contaminated individuals were sent to shower and were re-monitored until contamination was at its lowest level.

Congregate care was successfully demonstrated at the First Baptist Church Christian Life Center by the ARC. The shelter manager conducted a walk-through of the facility. Health, family services and mental health counseling were provided to evacuees.

- a. **MET: Criteria 1.e.1, 3.a.1, 3.b.1, 6.a.1 and 6.c.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

4. SUMMARY OF DEFICIENCIES AND AREAS REQUIRING CORRECTIVE ACTION

4.1 2003 DEFICIENCY

4.1.1 07-03-1.c.1, 5.a.1-D-01
State of Alabama
SEOC

Condition: The Public was not notified of the evacuation and shelter-in-place orders until an hour after the decision was made. The RCA issued Health Orders 3 and 4 at 1120. The two Health Orders encompassed the Health Department's decision to order the evacuation of Sectors, A-2, B-2, F-2, G-2, A-5 and B-5 and the shelter-in-place of Sectors A-10, B-10 and the City of Athens. At 1155, the counties were notified on the Tennessee Valley Authority (TVA) Hotline that the Health Orders were on the EM 2000 computer system. Following coordination, the counties activated their sirens at 1219 and broadcast the EAS messages between 1221 and 1222.

Possible Cause: The Alabama Emergency Management Agency (AEMA) and the RCA did not consistently coordinate with the counties to ensure that they had received Health Orders 3 and 4. The Standard Operating Guide (SOG), August 2003, did not contain specific instructions on actions, to take at the General Emergency (GE) or what to do with the Health Orders issued by RCA. This lack of specificity was compounded by inexperienced personnel in the SEOC.

Reference: Alabama RERP for Nuclear Power Plants, pages A-1, A-2, A-3, A-19 and BFNPP Standard Operating Guide (SOG) pages 5, 8-9, 11, 33 and 37. The references indicate that once AEMA receives Health Orders, it has the responsibility to promptly convey this information to the affected counties with a sense of urgency and importance, and further

delineates the variety of means that the State has at its disposal for communicating with the counties. Evaluation area criteria 1.c.1 and 5.a.1 (NUREG-0654, A.1.d; A.2.a, b and E.6.).

Effect: The public was not notified of the PADs in a timely manner and therefore, increased their risk of unnecessary exposure to the radioactive plume.

Recommendations: Review and revise procedures as necessary to ensure prompt transmission of PADs to the counties and subsequent alert and notification of the public. One possible solution would be to conduct a conference call over the TVA hotline with AEMA, RCA and the counties to discuss the Health Orders and to determine the time for siren activation and EAS broadcast. Train appropriate staff in the procedures.

Remedial Action Demonstrated: The SOG was revised in October 2003, and included specific actions to accomplish after a GE declaration. On October 20, 2003, the State conducted a remedial drill. At 1530, the Counties were notified by the SEOC that Health Orders 3 and 4 had been issued by RCA and that a GE had been declared at the BFNPP. Health Orders 3 and 4 called for the evacuation of zones A-2, B-2, G-2, F-2, A-5 and B-5 and the shelter-in-place of zones A-10, B-10 and the City of Athens. Immediately, after this call, Limestone County notified all the counties and arranged for them to get back on the "Hoot and Holler" at 1544 for the coordination of EAS and the Public Notification System (PNS). At 1544, the Counties decided to activate the sirens at 1550 and broadcast their EAS messages at the same time. The sirens were activated and the EAS messages were broadcast at the agreed upon times. The

SEOC was notified of the Counties' decision at 1545. The remedial drill terminated at 1559. The State and Counties successfully demonstrated their ability to promptly notify the public of PADs.

4.2 2003 ARCA

4.2.1 07-03-6.a.1-A-01 Morgan County Reception and Congregate Care

Condition: The Priceville Volunteer Fire Department used inappropriate monitoring methods, exposed themselves to contaminated water and did not practice good contamination control. During the monitoring of the vehicle, the firemen continuously touched the tires and body of the vehicle, seemingly unaware that the probe cover needed to be changed. While surveying the vehicle tires, two of the firemen crawled on the ground in the contaminated water unaware that they were contaminating themselves, their protective clothing, and probably received false radiation readings.

Possible Cause: The staff who were trained to do the monitoring and decontamination were not present for the demonstration. Hence, the untrained second shift personnel had to conduct the monitoring, but did not have the depth of knowledge to use appropriate survey and contamination avoidance methods.

Reference: Criteria 6.a.1; Morgan County EMA Browns Ferry SOP, Vehicle Decontamination, March, 2003.

Effect: The Priceville Volunteer Fire Department personnel spread contamination by using inappropriate monitoring methods. The probe cover was never changed even though the monitor continuously touched the tires and the bottom of the automobile. Contamination spread and gave the monitor a false reading. The monitor who

continuously crawled around in the contaminated water on the ground contaminated himself and his protective clothing. The probe was dragged in the contaminated solution on the ground continuously. This further spread contamination.

Recommendation: The Priceville Volunteer Fire Department should be provided training in monitoring, contamination control and decontamination.

Corrective Action Demonstrated: The Priceville Volunteer Fire Department received additional training in the monitoring and decontamination of vehicles. During a July 8, 2003 demonstration at the Priceville Fire Station, the firemen used appropriate monitoring, contamination control and decontamination methods in cleaning a contaminated vehicle. The probes were covered with plastic and the firemen moved the probe at the right speed and held it at the correct distance while surveying the vehicle. The firemen avoided splashing water and did not allow themselves to be exposed to contaminated solutions. They wore full protective clothing, regularly read and recorded their dosimetry, knew their exposure limits, and washed and monitored the vehicle continuously until it had the lowest possible level of contamination. The firemen had a working knowledge of KI, and knew about the spaces where clean and contaminated vehicles were separately parked. The Priceville Volunteer Fire Department personnel properly demonstrated the monitoring and decontamination of public vehicles arriving at the reception center and corrected the ARCA identified during the April 11, 2003 demonstration.

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

The following is a list of the acronyms and abbreviations, which may have been used in this report.

AEMA	Alabama Emergency Management Agency
ADEM	Alabama Department of Environmental Management
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Services
BFNPP	Browns Ferry Nuclear Power Plant
CFR	Code of Federal Regulations
DHR	Department of Human Resources
DHS	Department of Homeland Security
DHHS	Department of Health and Human Services
DOT	Department of Transportation
DRD	Direct-Reading Dosimeter
EAS	Emergency Alert System
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
ER	Emergency Room
FEMA	Federal Emergency Management Agency
FEOC	Forward Emergency Operations Center
FMT	Field Monitoring Team
GE	General Emergency
JIC	Joint Information Center
KI	Potassium Iodide
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, <i>"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980</i>
ORO	Offsite Response Organization

PAD	Protective Action Decision
PIO	Public Information Officer
PNS	Public Notification System
RAC	Regional Assistance Committee
RCA	Radiation Control Agency
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
SOG	Standard Operating Guides
SRMAC	State Radiological Monitoring and Assessment Center
TCP	Traffic Control Point
TVA	Tennessee Valley Authority
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS

The following is a list of the personnel who evaluated the BFNPP exercise on September 24, 2003. The organization represented by each evaluator is indicated by the following abbreviations:

CDC - Center for Disease Control
DHS/FEMA - Department of Homeland Security
Federal Emergency Management Agency
ICF - ICF Consulting, Incorporated
NRC - Nuclear Regulatory Commission

Lawrence A. Robertson

RAC Chairman

EVALUATION SITE

EVALUATOR

ORGANIZATION

Robert Perdue

Chief Evaluator

FEMA

STATE OF ALABAMA

State Emergency Operations Center

Obhie Robinson

FEMA

Forward Emergency Operations
Center (Decatur, AL)

Robert Perdue

FEMA

State Radiological Monitoring &
Assessment Center (SRMAC)

Robert Trojanowski

NRC

Dose Assessment (Montgomery)

Chuck Phillips

ICF

Radiological Field Monitoring Teams

Carol Herzenburg
Stan Maingi

ICF

ICF

Joint Information Center
(Calhoun Community College)

Brett Kriger
Beth Massey

ICF

FEMA

LAUDERDALE COUNTY

Emergency Operations Center

Ed Wojnas

ICF

LAWRENCE COUNTY

Emergency Operations Center	Helen Wilgus Paul Neid	FEMA ICF
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LIMESTONE COUNTY

Emergency Operations Center	Bill Larrabee Tommy Brown	ICF ICF
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MORGAN COUNTY

Emergency Operations Center	Doug Stutz Josh Moore Dr. Chris Bradshaw (Observer) Dr. Barbara Braunskarha (Observer)	ICF ICF CDC CDC
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MADISON COUNTY

Emergency Operations Center	Charles Zepperfield	ICF
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APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise criteria which were scheduled for demonstration in the BFNPP exercise on September 24, 2003, and the extent-of-play agreement approved by FEMA Region IV.

A. Exercise Criteria

On the following pages are the specific REP criteria scheduled for demonstration during this exercise.

B. Extent-of-Play Agreement

The extent-of-play agreement on the following pages was submitted by the State of Alabama, and was approved by FEMA Region IV in preparation for the BFNPP exercise on September 24, 2003. The extent-of-play agreement includes any significant modification or change in the level of demonstration of each exercise objective listed in Subsection A of this appendix.



STATE OF ALABAMA
EMERGENCY MANAGEMENT AGENCY

5898 COUNTY ROAD 41 • P.O. DRAWER 2160 • CLANTON, ALABAMA 35046-2160
(205) 280-2200 FAX # (205) 280-2495



BOB RILEY
GOVERNOR

April 22, 2003

Dr. Robert Perdue, EMPS
FEMA Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia, 30341

Robert
Dear Dr. Perdue:

Enclosed you will find the Revised Extent of Play based on some of your recommendations. Those areas that have been evaluated as part of the Staff Assistance Visits or Out-of Sequence Exercise were not addressed. I understand that the Office of Radiation Control has already responded to your letter.

Please contact me if you have any questions at (205) 280-2474.

Sincerely,

Sam
Sam Guerrero
Acting Exercise Branch Chief

Enclosure

The State of Alabama
Alabama Emergency Management Agency
Alabama Department of Public Health, Office of Radiation Control
Lauderdale County EMA
Lawrence County EMA
Limestone County EMA
Morgan County EMA
Madison County EMA

EXTENT OF PLAY
BROWNS FERRY NUCLEAR POWER PLANT
February 27, 2003

Other than the exceptions noted in the Extent of Play Agreement, all exercise areas will be demonstrated for evaluation in accordance with the Alabama Radiological Emergency Plan, the respective site-specific plan and appropriate Standard Operating Procedures or Guides

It is requested that any issue or discrepancy arising during exercise play be corrected immediately, at all player locations, if it isn't disruptive to exercise play and if it is mutually agreeable to both the controller and evaluator. These areas would primarily be Out-of Sequence or Staff Assistance Visit objectives that require demonstration. Other areas would be at the discretion of FEMA with the concurrence of the State Controller. This is a very useful and valuable option and offers the opportunity to expand the training benefits available in an "exercise environment."

EVALUATION AREA: 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.a- Mobilization

Criterion 1.a.1 OROs use effective procedures to alert, notify, and mobilize emergency personnel, and activate facilities in a timely manner.
(NUREG-0654, A.4, D.3, 4,E.1, 2,II.4)

EXTENT OF PLAY:

- **AEMA (Alabama Emergency Management Agency)**
AEMA will simulate alerting, notifying and mobilizing emergency personnel. State EMA Personnel will be pre-positioned at the Alabama Emergency Operations Center (AEOC), Forward Emergency Operations Center (FEOC), Joint Information Center (JIC) and other locations. AEMA will demonstrate ability to receive notification from the licensee (IAW the REP Plan) and verify the notification. The facilities will demonstrate activation in a timely manner scenario dependent. Personnel may be pre-positioned.
- **ORC (Alabama Office Of Radiation Control)**

The Office of Radiation Control will simulate alerting, notifying and mobilizing emergency personnel. Personnel will be pre-positioned at the Montgomery Emergency Room in the RSA Tower, the Decatur SRMAC room in the Morgan County EMA Office, and the Joint Information Center (JIC) at Calhoun Community College. Radiation Control will demonstrate the ability to receive notification from the licensee and verify the notification. The facilities will demonstrate activation in a timely manner scenario dependent.

- **Lauderdale County EMA** The Florence/Lauderdale EMA Staff will be pre-positioned at 8:00 a.m. at which time normal duty hours begin.

The Florence-Lauderdale EMA Staff is comprised of Director, Deputy Director, Planner, and Secretary. A few administrative volunteers will also be pre-positioned with the Lauderdale County EMA staff. A call list will be utilized to ensure all required personnel are alerted, notified, and mobilized.

- **Lawrence County EMA**

Lawrence County EMA will be pre-positioned at the beginning of the workday. Staffing will consist of the Director, TVA Planner and Deputy Director. Part of the administrative support personnel may be pre-positioned. A complete Staffing Pattern Call List will be utilized to ensure all required personnel are notified.

- **Limestone County EMA** staff will be pre-positioned at 8:00 a.m. on June 4, 2003, which is the beginning of regular working hours. EMA staff consists of Director, Planner and PIO. Some administrative support personnel will also be pre-positioned. LCEMA will demonstrate the ability to notify/mobilize the appropriate personnel and to activate the EOC; scenario dependent.

- **Morgan County EMA (MCEMA)**

The Morgan County EMA staff will be pre-positioned at 8:00 am, at which time normal duty hours begin.

Staff consists of Director, Secretary, TVA Planner, Hazmat Planner. Some administrative volunteer support personnel will also be pre-positioned along with the Morgan County staff. A call list will be utilized to ensure all required personnel are notified.

- **Madison County EMA**

The Madison County EMA staff will be propositioned at 8:00 a.m., at which time normal duty hours begin. The Huntsville-Madison County EMA staff consists of Director, Planners, PIO and Secretary. A call list will be utilized to ensure all required personnel are notified.

EMERGENCY OPERATIONAL STAFFING BROWNS FERRY NPP PRACTICE EXERCISE

April 30, 2003

Command Group:	Senior EM Advisor:	Bruce Baughman	(205) 280-2201
	Executive Secretary:	Norma Driver	(205) 280-2210
	Operations Division Chief:	Art Faulkner	(205) 280-2208
	24-Hour Emergency:		1-800-843-0699

ASSIGNMENT TO EOC				
POSITION	1 ST SHIFT	PHONE	FAX	2 ND SHIFT
EMERGENCY MANAGEMENT TEAM				
EM Team Chief	Charles Williams	280-2302		As assigned
ADMIN. SUPPORT PUBLIC INFORMATION				
EM Team Chief's Admin	Phyllis Hardee	280-2301		As assigned
Public Information Officer (PIO)	Robert Sutton	280-2476	280-2442	As assigned
OPERATIONS SECTION				
Operations Officer (OPI)	Jeff Byard	280-2307		As assigned
Assistant Operations Officer (RES)	LaTonya Bazemore	280-2300		As assigned
EMERGENCY SERVICES BRANCH				
State Forestry	Doug Smith	280-2341		As assigned
Dept. of Public Health (Rad. Health)	Ray Sheter	280-2333		As assigned
Department of Public Safety	Lt. Robert Goolner	280-2323		As assigned
Environmental Management	John Bibb	280-2342		As assigned
HUMAN SERVICES BRANCH				
Department of Education	James Nuckles	280-2330		As assigned
Department of Human Resources	Charles Johnson	280-2332		As assigned
Department of Mental Health	Eric Johnson	280-2334		As assigned
American Red Cross	Alan Ball	280-2331		As assigned
Agriculture and Industries	Chris Bishop	280-2344		As assigned
INFRASTRUCTURE & SUPPORT BRANCH				
Military	Major Dennis Butters	280-2325		As assigned
Department of Corrections	Tony Patterson	280-2321		As assigned
Conservation and Natural Resources	Lt. Donald Brooks	280-2343		As assigned

ASSIGNMENT TO EOC					
ESF #	POSITION	1 ST SHIFT	PHONE	FAX	2 ND SHIFT
	OPERATIONS SUPPORT BRANCH				
1	Department of Transportation	George Conner	280-2322		As assigned
2	Operations Center Admin.	Pat Tatum	280-2310		As assigned
2	Commo. Tech.	Fred Springall	280-2311		As assigned
					As assigned
2	RACES				
2	Operations Center Fax Copy Machine	Gail Coburn	280-2310	280-2495	As assigned
	INFORMATION & PLANNING SECTION				
5	Planning Officer	Chris Newton	280-2308		As assigned
5	Hazard Analyst- TVA	Jeff Condra	280-2305		As assigned
	DPH Office of Radiation Control		280-2304		
	SITUATIONS STATUS BRANCH				
13	PIO Admin.	Nell Dennis	280-2254		As assigned
	DOCUMENTATION BRANCH				
	Fax Runner Fax Copy Machine	Sandra Cornell	280-2336	280-2495	As assigned
	LOGISTICS SECTION				
7	Logistics Chief Security Entry Control	Joe Maddox	280-2292		As assigned
	LOGISTIC SUPPORT BRANCH				
7	Logistic Support	Jim Carroll	280-2292		
	INFORMATION SYSTEMS BRANCH				
	IT Automation	Jerry McRay	280-2440		As assigned
	IT Automation Support Pod Facilitator	Nick Schofield	280-2403		As assigned
	FINANCE AND ADMIN. SECTION				
	Financial Support	Jimmy Lee	280-2231		
	FINANCE BRANCH				
	Accountant	Leigh McKee	280-2227		
	ADMIN. BRANCH				
	Admin. Support	Diane Maddox	280-2232		
	PERSONNEL BRANCH				
	Personnel Officer	Renee Helms	280-2206		

ASSIGNMENT TO JIC

ESF #	POSITION	1 ST SHIFT	PHONE	FAX	2 ND SHIFT
13	Public Information Officer (PIO)	Scott Adcock	256-355-6129		As assigned
13	PIO Assistant Fax/Admin	Rhonda Stange	256-355-6129	256-847-3140	As assigned
13	Media Inquiry	Richard Cartwright	256-350-6121		
13	Public Inquiry	Dan Isley	256-350-6124		
13	Public Inquiry	Nancy Golson	256-350-6125		

COUNTY LIAISONS IN JIC

ESF #	POSITION	1 ST SHIFT	PHONE	FAX	2 ND SHIFT
13	Lauderdale County	Bert Collison		256-350-6128	As assigned
13	Lawrence County	Nelson Bates		256-350-6129	As assigned
13	Limestone County	Stephanie Gibson		256-355-0713	As assigned
13	Madison County	Steve Swafford		256-355-0714	As assigned
13	Morgan County	Ellen Haynes		256-355-0705	As assigned

Forward Operation Center

5	State Liaison Officer	Pete McGough	256-350-9362	256-353-2747 jimm@ema.alabama.gov	As assigned
3	PIO	Norman Arnold	256-350-7783	256-353-2747	As assigned
3	PIO Admin.	Sherry Cleckler	256-350-7742	256-353-2747	
5	TVA CECC Representative	Joe Clark	423-751-1635		

REGIONAL COORDINATORS TO COUNTIES

ESF #	POSITION	1 ST SHIFT	PHONE	FAX	2 ND SHIFT
5	Lauderdale County	Dave Poundstone	256-766-4201		As assigned
5	Lawrence County	David Coggins	256-974-7641		As assigned
5	Limestone County	Jimmy Jones	256-232-2631		As assigned
5	Madison County		256-427-5130		As assigned
5	Morgan County	Pete McGough	256-351-4620		As assigned

Controller: Sam Guerrero: 1-888-820-1904

Sub-element 1.b –Facilities

**Criterion 1.b.1: Facilities are sufficient to support the emergency response.
(NUREG-0654, II)**

EXTENT OF PLAY:

- **AEMA**
The Alabama Emergency Operations Center, Forward Emergency Operations Center, and Joint Information Center (JIC) will demonstrate facility capabilities, scenario dependent.
- **ORC**
The Montgomery Emergency Room, the Decatur SRMAC, and the Joint Information Center (JIC) will demonstrate facility capabilities, scenario dependent.
- **Lauderdale County EMA.** A tour, analysis, and discussion of the Florence-Lauderdale County Emergency Operations Center (EOC) will be conducted from 1:00 p.m. – 2:00 p.m. on Monday, April 7, 2003 during the Staff Assistance Visit with the Lauderdale EMA staff.
- **Lawrence County EMA**
The Lawrence County EOC will demonstrate facility capabilities, during the evaluated exercise, scenario dependent. The EOC will be looked at and discussed, during the Staff Assistance visit. This will be done at 3:00PM, April 8, 2003.
- **Limestone County EMA** The Limestone County EMA will demonstrate the Emergency Operations Center facility capabilities during the exercise on June 4, 2003, scenario dependent. A tour and discussion of the EOC will be conducted during the Staff Assistance Visit on April 9, 2003 at 9:00 a.m.
- **Morgan County EMA**
The Morgan County EOC and the Joint Information Center (JIC) will demonstrate facility capabilities during the exercise, scenario dependent.
A tour and discussion of the EOC will be conducted from 11:00 to 12:00 during the staff assisted visit April 11, 2003.
- **Madison County**
The Madison County EMA EOC will demonstrate facility capabilities, scenario dependent.

Sub-element 1.c-Direction and Control

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654, A.1.d.2.a.b.)

EXTENT OF PLAY

- **AEMA**
In accordance with the Alabama Radiological Response Plan and the BFNPP Standard Operating Guide, direction and control will be demonstrated by AEMA, only at the Alabama Emergency Operations Center, scenario dependent.
- **ORC**
Radiation Control will demonstrate direction and control from the Montgomery Emergency Room and the Decatur SRMAC, scenario dependent.
- **Lauderdale County EMA** – The Florence/Lauderdale EMA will demonstrate direction and control from the Lauderdale County EOC during the exercise. Scenario dependent.
- **Lawrence County EMA**
The Lawrence County EMA will demonstrate Direction and Control, from the Lawrence Co. EOC, during the evaluated exercise. This will be conducted Scenario Dependent.
- **Limestone County EMA** The Limestone County EMA will demonstrate direction and control from the EOC during the exercise on June 4, 2003, scenario dependent.
- **Morgan County EMA**
MCEMA will demonstrate direction and control from the Morgan County EOC during the exercise, scenario dependent.
- **Madison County EMA**- The Madison County EMA will demonstrate direction and control from the Madison County EOC, scenario dependent.

Sub-Element 1.d- Communications Equipment

Criterion 1.d.1: At least two communications systems are available, at least one operates properly, and communications links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1.2.)

EXTENT OF PLAY

- **AEMA**
The Alabama Emergency Management Agency will demonstrate communication capabilities at appropriate locations (AEOC, FEOC, and JIC), and between governmental agencies, scenario dependent.
- **ORC**
Radiation Control will demonstrate communication capabilities at the appropriate locations (Montgomery Emergency Room, the SRMAC, and the JIC), and between governmental agencies, scenario dependent.
- **Lauderdale County EMA**– The Lauderdale County EMA will discuss communications capabilities from the Lauderdale County EOC during the Staff Assistance Visit on Monday, April 7, 2003 from 2:00 p.m.-2:15 p.m. Some of the equipment will be used during the exercise. Scenario Dependant. Communications between the Emergency Worker Self Protection station and the reception center to the EOC will be demonstrated during the Out of Sequence on Monday, April 7, 2003 from 6:00 p.m. - 6:15 p.m. All communications will be demonstrated scenario dependent.
- **Lawrence County EMA**
Communications equipment will be demonstrated, scenario dependent, on June 4, 2003.
- **Limestone County EMA** will discuss the communication capabilities from the EOC during the Staff Assistance Visit on April 9, 2003 at 9:00 a.m. The communications equipment will be demonstrated during the exercise, scenario dependent on June 4, 2003.
- **Morgan County EMA**
MCCEMA will discuss the communication capabilities from the Morgan County EOC out of sequence during the 2003 FEMA staff assistance visit on April 11, 2003 at 11:00. The equipment will be utilized during the exercise, scenario dependent.
Communications between Pricville reception center and the EOC will be demonstrated out-of sequence 2:30 to 3:30 April 11, 2003.
- **Madison County EMA** will demonstrate communication capabilities at appropriate locations (EOC) and between governmental agencies, out of sequence on April 10, 2003 at 9:30 a.m. All communications will be demonstrated scenario dependent.

Sub-element 1.e- Equipment and Supplies to Support Operations

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI) and other supplies are sufficient to support emergency operations. (NUREG-0654, H., J., 10a.b.c.e.f.j.k.11,K.3.a.)

EXTENT OF PLAY

- **AEMA**
AEMA will have available equipment, maps, and displays that would be necessary to support emergency operations at the AEOC, FEOC and JIC, scenario dependent. Dosimetry and KI are not applicable.
- **ORC**
Radiation Control will have available equipment, maps, and displays, that would be necessary to support emergency operations at the Montgomery Emergency Room, Decatur SRMAC, and JIC, scenario dependent. Dosimetry and KI will be available for field teams, scenario dependent.
- **Lauderdale County EMA**– Equipment, maps, displays, and dosimetry will be discussed during the Staff Assistance Visit on Monday, April 7, 2003 at the Field Operations Building between 2:15 p.m. – 2:30 p.m. Discussion of KI will be performed during the Out of Sequence on Monday, April 7, 2003 from 5:00 p.m. – 6:00 p.m. with an Alabama Department of Public Health official.
- **Lawrence County EMA**
An adequate supply of TLDs and dosimetry available for the emergency workers is available. This will be discussed at the Lawrence Co. EOC, during the Staff Assistance visit, on April 8, 2003, at 3:00 pm. No events will be demonstrated during the June 4th exercise, which will require the use of personnel monitoring devices.
- **Limestone County EMA** An adequate supply of TLDs and dosimetry are available for the emergency workers. This evaluation area will be discussed in the EOC during the FEMA Staff Assistance Visit at 9:00 a.m. on April 9, 2003.
- **Morgan County EMA**
An adequate supply of TLDs and dosimetry are available for the emergency workers. This Evaluation area will be discussed at the Morgan County EOC during the 2003 FEMA staff assistance visit from 11:00 to 12:00 am April 11. No events will be demonstrated during the June 4, exercise that will require the use of personnel monitoring devices.

- **Madison County EMA**

The Madison County EMA will have available equipment, maps and displays that would be necessary to support emergency operations at the Madison County EOC, out of sequence. Dosimetry will be available for Radiological Monitors April 10, 2003 at 10:30 a.m. at Lewis Crews Stadium, out of sequence.

KI availability will be demonstrated at the Madison County Health Department at 304 Eustis Ave., April 10, 2003 at 3:00 p.m. out of sequence.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION MAKING

Sub-element 2.a-Emergency Worker Exposure Control

Criterion 2.a.1: OROs use a decision making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides.(NUREG-0654,K.4.)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Radiation Control will demonstrate emergency worker exposure control decision-making, for the State Radiological Monitoring Field Teams only, scenario dependent.
- **Lauderdale County EMA** has an exposure control system in place to include KI
- **Lawrence County EMA** has an exposure control system in place to include KI
- **Limestone County EMA** has an exposure control system in place to include KI
- **Morgan County EMA** has an exposure control system in place to include KI
- **Madison County EMA**
Not Applicable.

Sub- element 2.b Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Criterion 2.b.1: Appropriate protective action recommendations are based On available information on plant conditions, field monitoring, data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (NUREG-0654, I.8., 10., 11. and Supplement 3.)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Radiation Control will demonstrate radiological assessment for the plume phase of the emergency, scenario dependent.
- **Lauderdale County EMA**
Not Applicable
- **Lawrence County EMA**
Not Applicable
- **Limestone County EMA**
Not Applicable
- **Morgan County EMA**
Not Applicable
- **Madison County EMA**
Not Applicable

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9., 10.m)

EXTENT OF PLAY

- **AEMA**
In Accordance with the Alabama REP Plan, Pages A-2, A-3, B-1, B-10, B-16. The ORC is responsible for issuing the PADs. However after a PAD is issued, AEMA reserves the right to review, and or recommend the PAD be changed due to any mitigating circumstances (road conditions, weather condition, etc.)
- **ORC**
Radiation Control will demonstrate the decision-making process to make protective action decisions for the general public, scenario dependent.
- **Lauderdale County EMA**
In Accordance with the Alabama REP Plan, Pages A-2, A-3, B-1, B-10, B-16. The ORC is responsible for issuing the PADs. However after a PAD is issued, The County EMA reserves the right to review, and or recommend the PAD be changed due to any mitigating circumstances (road conditions, weather condition, etc.)
- **Lawrence County EMA**
In Accordance with the Alabama REP Plan, Pages A-2, A-3, B-1, B-10, B-16. The ORC is responsible for issuing the PADs. However after a PAD is issued, The County EMA reserves the right to review, and or recommend the PAD be changed due to any mitigating circumstances (road conditions, weather condition, etc.)
- **Limestone County EMA**
In Accordance with the Alabama REP Plan, Pages A-2, A-3, B-1, B-10, B-16. The ORC is responsible for issuing the PADs. However after a PAD is issued, The County EMA reserves the right to review, and or recommend the PAD be changed due to any mitigating circumstances (road conditions, weather condition, etc.)
- **Morgan County EMA**
In Accordance with the Alabama REP Plan, Pages A-2, A-3, B-1, B-10, B-16. The ORC is responsible for issuing the PADs. However after a PAD is issued, The County EMA reserves the right to review, and or recommend the PAD be changed due to any mitigating circumstances (road conditions, weather condition, etc.)
- **Madison County EMA**
Not Applicable

Sub-element 2.c-Protective Action Decisions Consideration for the Protection of Special Populations

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9., 10.c.d.e.g)

EXTENT OF PLAY

- **AEMA**
Not Applicable

- **ORC**
Not Applicable

- **Lauderdale County EMA**
Will demonstrate from the EOC, scenario dependent.

- **Lawrence County EMA**
Will demonstrate from the EOC, scenario dependent.

- **Limestone County EMA**
Will demonstrate from the EOC, scenario dependent.

- **Morgan County EMA**
Will demonstrate from the EOC, scenario dependent.

- **Madison County EMA**
Not Applicable

Sub-element 2.d-Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway

This Sub-element will not be evaluated this exercise (ingestion element).

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria. (NUREG-0654, I.8, J.11)

Sub-element 2.e- Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return

This Sub-element will not be evaluated this exercise (ingestion element).

Criterion 2.e.1: Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological

conditions and criteria in the OROs

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.a- Implementation of Emergency Worker Exposure Control

Criterion 3.a.1; The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Radiation Control will demonstrate the implementation of emergency worker exposure control, scenario dependent.
- **Lauderdale County EMA**– Emergency worker exposure control will be discussed Out of Sequence on Monday, April 7, 2003 from 5:00 – 6:00 p.m. at the Lauderdale County EOC and the Lauderdale County High School Reception center. (Traffic Control, River Access Control and Evacuation, personnel monitoring and decontamination, vehicle decontamination at Lauderdale County High School)
- **Lawrence County EMA**
Emergency worker exposure control will be discussed, out of sequence, on April 8, 2003, at the county EOC, at 8:30 am. Traffic Control and River Access Control will be discussed at the county EOC, on April 8, 2003, at 9:00 am and 9:30am. Personnel monitoring and decontamination and vehicle decontamination will be demonstrated at the Moulton Recreation Center, on April 8, 2003, at 11:00 am
- **Limestone County EMA**
Emergency workers will discuss usage of equipment during the Staff Assistance Visit on April 9, 2003 at 1:00 p.m. at the Athens-Limestone Rescue Squad Building.
- **Morgan County EMA**
Emergency worker exposure control will be discussed, out of sequence, on April 11, 2003 at the County EOC and at the Priceville reception center. (Traffic control and river Access control at EOC; personnel monitoring and decontamination, vehicle decontamination at Priceville reception center)
- **Madison County EMA**
The Madison County EMA will discuss exposure control management for Radiological Monitors at the Madison County EOC on April 10, 2003 at 4:00 p.m.

Sub-element 3.b- Implementation of KI Decision

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made appropriate record keeping of the administration of KI to emergency workers and institutionalized individuals is maintained. (NUREG-0654, E.7., J.10.e.,f.)

EXTENT OF PLAY

- **AEMA**
Not Applicable. AEMA does not issue KI or make decisions pertaining to issuance of KI.
- **ORC** This element will not be demonstrated.
- **Lauderdale County EMA**– Will be conducted during the Out of Sequence at Lauderdale County High School with the Alabama Department of Public Health. April 7, 2003 between 5:00 p.m. and 6:00 p.m.
- **Lawrence County EMA**
The issuance of KI will be discussed at the time of Traffic Control and River Warning, out of sequence on April 8,2003.
- **Limestone County EMA.** Personnel from the Limestone County Health Department will discuss this element during the Staff Assistance Visit on April 9, 2003 at 1:30 p.m. at the Athens-Limestone Rescue Squad Building.
- **Morgan County EMA** A representative from the Morgan County Health Department will be at the EOC at noon on April 11, 2003 to discuss issuance of KI. A trip to see the stockpile of KI is scheduled to follow.
- **Madison County EMA**
Personnel from the Madison County Health Department will discuss KI distribution at the Madison County Health Department on April 10, 2003 at 3:00 p.m., out of sequence.

Sub-element 3.c.1- Implementation of Protective Actions for Special Populations

Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions. (NUREG-0654, E.7. J.9. 10.c.d.e.g.)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Not Applicable
- **Lauderdale County EMA- Will be discussed with applicable personnel from the Lauderdale County EOC during Out of Sequence Event on Monday, April 7, 2003, from 6:00 p.m. – 6:15 p.m. Scenario dependent. Contact with special populations, reception facilities, and transportation providers will be simulated.**
- **Lawrence County EMA**
Will be discussed with applicable personnel at the County EOC. Transportation Providers will be available for discussion, on April 8, 2003, at 10:30 am. Contact with special populations, reception facilities, and transportation providers will be simulated.
- **Limestone County EMA**
Will be discussed with applicable personnel at the County EOC, at 11:00 a.m. Contact with special populations, reception facilities, and transportation providers will be simulated.
- **Morgan County EMA**
This criterion will be discussed with applicable personnel who provide support for the Special needs plan out of sequence at 10:30 – 11:00 am on April 11, 2003 at the County EOC. (Morgan County Area Transportation, Hospice of the Valley, Salvation Army, Alabama Regional Hospital, Decatur Emergency Medical Service)
Contact with special populations, reception facilities, and transportation providers will be simulated during the exercise, scenario dependent.
- **Madison County EMA**
Not Applicable

Criterion 3.c.2: OROs/School officials decide to implement protective actions for schools. (NUREG-0654, J.10.c.d., g.)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Not Applicable
- **Lauderdale County EMA**– Not Applicable. No schools are located within the 10-mile Emergency Planning Zone.
- **Lawrence County EMA**
This Evaluation Area will be discussed out of sequence, with applicable personnel, in the County EOC, at 10:00 am.
- **Limestone County EMA**
This evaluation area will be discussed with representatives of the Limestone County Board of Education at the Limestone County EOC during the Staff Assistance Visit on April 9, 2003 at 10:30 a.m.
- **Morgan County EMA**
This Evaluation Area will be discussed out of sequence, with representatives from the Morgan County School and Decatur City school systems in the County EOC, out of sequence on April 11, 2003.
- **Madison County EMA**
Not Applicable

Sub-element 3.d- Implementation of Traffic and Access Control

**Criterion 3.d.1: Appropriate traffic and access control is established.
Accurate instructions are provided to traffic and access control personnel.
(NUREG- 0654, J.10.g, j., k.)**

EXTENT OF PLAY

- **AEMA**

Will simulate contacting applicable rail and air traffic authorities, scenario dependent at the AEOC.

- **ORC**

Not Applicable

- **Lauderdale County EMA**– This criterion will be discussed with applicable personnel from the Lauderdale County Sheriff's Department or Rogersville Police Department at Lauderdale County High School during the Out of Sequence Event on Monday, April 7, 2003 from 6:15 p.m. – 6:30 p.m.

The Florence-Lauderdale Search & Rescue Designee will discuss River Evacuation and Access Control on Monday, April 7, 2003 at the Lauderdale County High School from 6:30 p.m. – 6:45 p.m. during the Out of Sequence Event. The need for traffic and river access control will be simulated on the June 4, 2003 exercise. Scenario Dependent

- **Lawrence County EMA**

This criterion will be discussed out of sequence with applicable personnel, in our EOC. The County Sheriff's Department and Moulton Police Department will participate. on April 8, 2003, at 8:30 AM. The Lawrence County Rescue Squad will discuss River Access Control, in the EOC, on April 8, 2003, at 9:00AM.

- **Limestone County EMA**

The Athens-Limestone Rescue Squad will discuss river access control on April 9, 2003 at 2:00 p.m. during the Staff Assistance Visit at the Athens-Limestone Rescue Squad Building. The Limestone County Sheriff's Department will discuss traffic and access control on April 9, 2003 during the Staff Assistance Visit at 2:30 p.m.

- **Morgan County EMA**

This criterion will be discussed with applicable personnel from the Decatur City Police Department in our EOC from 8:30 – 9:00 am, on April 11, 2003 during the FEMA staff assistance visit.

The Morgan County Rescue Squad will discuss River access control in our EOC from 9:00 - 9:30 am on April 11, 2003 during the FEMA staff assistance visit.

The need for traffic control and river access control will be simulated during the June 4 exercise scenario dependant.

- Madison County EMA This criterion will be discussed out of sequence on April 10, 2003 at 8:30 a.m. with applicable personnel in the Madison County EOC. Huntsville Police Department, Alabama Department of Transportation, Huntsville Traffic Engineering and Madison Police Department (if available) and Madison County Sheriff's Office (if available) will participate.

Criterion 3.d.2: Impediments to evacuation are identified and resolved.
(NUREG-0654, J.10. k.)

EXTENT OF PLAY

- **AEMA**
AEMA will demonstrate coordination of state resources assistance as needed by the County at the AEOC, scenario dependent.
- **ORC**
Not Applicable
- **Lauderdale County EMA-** The director of EMA or his designee will discuss applicable procedures at the Lauderdale County High School during the Out of Sequence Event on Monday, April 7, 2003 between 6:45 – 7:00 p.m. Actual demonstrations will not be performed.
- **Lawrence County EMA**
The director of EMA or her designee will discuss applicable procedures at the County EOC, during the Staff Assistance Visit at 9:00 a.m. Actual demonstrations will not be performed.
- **Limestone County EMA**
The Limestone County Sheriff's Department will discuss impediments to evacuation on April 9, 2003 during the Staff Assistance Visit at 2:30 p.m.
- **Morgan County EMA**
Representatives from the Decatur City Police Department will discuss applicable procedures at the County EOC from 8:30 to 9:00 am during the FEMA staff assistance visit April 11, 2003.
Actual demonstrations will not be performed.
- **Madison County EMA**
Not Applicable

Sub-element 3.e. - Implementation of Ingestion Pathway Decisions

This Sub-element will not be evaluated this exercise (ingestion element).

Criterion 3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk, and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions.

Criterion 3.e.2: Appropriate measures, strategies, and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk and agricultural production.

Sub-element 3.f. - Implementation of Relocation, Re-entry and Return Decisions

This Sub-element will not be evaluated this exercise (ingestion element).

Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG-0654, M.1, 3.)

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

Sub-element 4.a- Plume Phase Field Measurements and Analyses

Criterion 4.a.1 The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, II.10, I.8., 9., 11)

EXTENT OF PLAY

- **AEMA**
Not Applicable

- **ORC**
Radiation Control will demonstrate plume phase field measurements and analyses, scenario dependent. Two field teams will be evaluated. Field teams will simulate using booties and gloves for contamination control. Field teams will be pre-positioned at the Morgan County Health Department parking lot.

- **Lauderdale County EMA**
Not Applicable

- **Lawrence County EMA**
Not Applicable

- **Limestone County EMA**
Not Applicable

- **Morgan County EMA**
Not Applicable

- **Madison County EMA**
Not Applicable

Criterion 4.a.2: Field measurement teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, I.8. 11. J.10.a)

EXTENT OF PLAY

- **AEMA**
Not Applicable

- **ORC**
Radiation Control will demonstrate plume phase field measurements and analyses, scenario dependent. Two field teams will be evaluated. Field teams will simulate using booties and gloves for contamination control.

- **Lauderdale County EMA**
Not Applicable

- **Lawrence County EMA**
Not Applicable

- **Limestone County EMA**
Not Applicable

- **Morgan County EMA**
Not Applicable

- **Madison County EMA**
Not Applicable

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulates samples are collected. Teams will move to an appropriate low background location to determine whether significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I.8., 9., 11.)

EXTENT OF PLAY

- **AEMA**
Not Applicable

- **ORC**
Radiation Control will demonstrate plume phase field measurements and analysis procedures, scenario dependent. Radioiodine sample procedures will be demonstrated in the parking lot of the Morgan County Health Department before being deployed into the

field. Radioiodine sampling will be simulated in the field during the exercise, scenario dependent. Field teams will simulate using booties and gloves for contamination control.

- Lauderdale County EMA
Not Applicable
- Lawrence County EMA
Not Applicable
- Limestone County EMA
Not Applicable
- Morgan County EMA
Not Applicable
- Madison County EMA
Not Applicable

Sub-element 4.b-Post Plume Phase Field Measurement and Sampling

This Sub-element will not be evaluated this exercise (ingestion element).

Criterion 4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g. food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making. (NUREG-0654, I.8. J.11.)

Sub-element 4.c-Laboratory Operations

This Sub-element will not be evaluated this exercise (ingestion element).

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654, C.3., I.8., 9., J.11)

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

Sub-element 5.a- Activation of the Prompt Alert and Notification System

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message must include the elements required by current FEMA REP guidance. (10 CFR part 50, Appendix E & NUREG-0654, E.1., 4., 5., 6., 7.)

EXTENT OF PLAY

- **AEMA**
AEMA will monitor the coordination of the PNS and EAS by the counties scenario dependent.
- **ORC**
Not Applicable
- **Lauderdale County EMA**
Sirens will be simulated for all PNS activations scenario dependent. EAS message distribution to applicable EAS station(WLAY) will be provided to applicable stations. Reading of the message will be simulated at the County EOC.
- **Lawrence County EMA**
Sirens will be simulated for all PNS activations scenario dependent. EAS message distribution to the applicable EAS station, (WLAY 100.3 FM), will be provided to the station by telefax. Reading of the message will be simulated at the County EOC.
- **Limestone County EMA**
Sirens will be simulated for all PNS activations scenario dependent. EAS message distribution to applicable EAS station (WZYP) will be provided to applicable stations. Reading of the message will be simulated at the County EOC.
- **Morgan County EMA**
Sirens will be simulated for all PNS activations scenario dependent. The initial EAS message will be faxed to a local EAS station(WZYP) for simulated broadcast. The transfer of any subsequent messages offsite will be simulated.
- **Madison County EMA**
Not Applicable

Sub-element 5.a.2-RESERVED

Sub-element 5.a.3

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654, E.6., Appendix 3.b.2.c)

- **AEMA**
Not Applicable
- **ORC**
Not Applicable
- **Lauderdale County EMA**
This criterion will be demonstrated by a discussion between the evaluator and the County EMA Director or his designee only in case of PNS failure on Monday, April 7, 2003 during the Staff Assistance Visit between 2:00 p.m. – 3:00 p.m. as a discussion as part of 1.d.1 discussion.
- **Lawrence County EMA**
This Evaluation Area will be demonstrated by a discussion between the evaluator and the County EMA Director or his designee only in case of PNS failure. This will be done out of sequence, during the Staff Assistance visit, on April 8, 2003.
- **Limestone County EMA**
This criterion will be discussed as part of the 1.d.1 discussion during the Staff Assistance Visit on April 9, 2003 at 9:00 a.m. at the EOC.
- **Morgan County EMA**
This criterion will be discussed as part of the 1.d.1 discussion out of sequence from 11:00 am to 12:00 during the FEMA staff assistance visit on April 11, 2003.
- **Madison County EMA**
Not Applicable

Element 5.b.1- Emergency Information and Instructions for the Public and the Media

Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654, E.5., 7., G.3.a., G.4, a., b., c.)

EXTENT OF PLAY

- **AEMA**

Criterion 5, 5.b.1, will be demonstrated. Actual message distribution to the public and media will be simulated, scenario dependent.

- **ORC**

Criterion 5, 5.b.1, will be demonstrated. Actual message distribution to the public and media will be simulated, scenario dependent.

- **Lauderdale County EMA**

Criterion 5, 5.b.1, will be demonstrated. Actual message distribution to the public and media will be simulated, scenario dependent.

- **Lawrence County EMA**

Criterion 5, 5.b.1, will be demonstrated. Actual message distribution to the public and media will be simulated, scenario dependent.

- **Limestone County EMA**

Criterion 5, 5.b.1, will be demonstrated. Actual message distribution to the public and media will be simulated, scenario dependent.

- **Morgan County EMA**

Criterion 5, 5.b.1, will be demonstrated. Actual message distribution to the public and media will be simulated, scenario dependent.

- **Madison County EMA**

Evaluation Area 5, 5.b.1, will be demonstrated. Actual message distribution to the public and media will be simulated, scenario dependent.

EVALUATION AREA 6: SUPPORT OPERATIONS/ FACILITIES

Sub-element 6.a- Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees

Criterion 6.a.1: The reception center/emergency worker facility appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654. J.10.h.; K.5.b)

EXTENT OF PLAY

- AEMA
Not Applicable
- ORC
Not Applicable
- Lauderdale County EMA- The Lauderdale County High School Reception will be set-up Out of Sequence on Monday, April 7, 2003 from 5:00 p.m. – 6:30 p.m. The use of the reception center will be simulated on the June 4, 2003 exercise, scenario dependant.
- Lawrence County EMA
The Moulton Recreation Center will be set up out of sequence at 11:00 AM, April 8, 2003, to demonstrate Criterion 6.a.1. Use of the reception center will be simulated, scenario dependent, during the June 4, evaluated exercise.
- Limestone County EMA
This element will be demonstrated during the Staff Assistance Visit on April 9, 2003 at 4:00 p.m. at the Reception Center at West Limestone High School.
- Morgan County EMA
The Priceville Reception Center will be set up out of sequence at 2:30 - 3:30 pm April 11, 2003 at the Priceville High School.
Use of reception centers will be simulated during the June 4 exercise, scenario dependant.
- Madison County EMA
This criterion will be demonstrated out of sequence on April 10, 2003 at 10:00 a.m. at Lewis Crews Stadium reception center (if not available an alternate will be used). The use of reception centers will be simulated, scenario dependent, during the June 4, evaluated exercise.

Sub-element 6.b- Monitoring and Decontamination of Emergency Worker Equipment

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. (NUREG-0654, K.5.b)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Not Applicable
- **Lauderdale County EMA**– This criterion will be demonstrated Out of Sequence on Monday, April 7, 2003 at the Lauderdale County High School reception center from 7:00 – 7:30 p.m.
- **Lawrence County EMA**
This criterion will be demonstrated out of sequence at the Moulton Recreation Center, on April 8, 2003, at the same time of demonstration of radiological monitoring and decontamination of evacuees
- **Limestone County EMA**
This element will be demonstrated during the Staff Assistance Visit on April 9, 2003 at 4:00 p.m. at the Reception Center at West Limestone High School.
- **Morgan County EMA**
This criterion will be demonstrated out of sequence at Pricville High School at 3:30 pm on April 11, 2003.
- **Madison County EMA**
Not Applicable

Sub-element 6.c- Temporary Care of Evacuees

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines (found in MASS CARE-Preparation Operations, ARC 3031). Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h., 12.)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Not Applicable
- **Lauderdale County EMA**– This criterion will be discussed Out of Sequence with the Lauderdale County American Red Cross Representatives on Monday, April 7, 2003 at 3:00 p.m. at Bradshaw High School.
- **Lawrence County EMA**
This criterion will be discussed out of sequence with representatives of the Lawrence/Morgan Chapter of the American Red Cross. There will be a walk through of the congregate care facility at the Moulton Church of Christ, on April 8, 2003, at 12:00 noon.
- **Limestone County EMA**
This element will be discussed during the Staff Assistance Visit at the Mass Care Center at West Limestone High School on April 9, 2003 at 5:00 p.m.
- **Morgan County EMA**
This criterion will be discussed out of sequence with Morgan County Red Cross representative(s) at 4:00 pm on April 11, 2003. A walk through of their facility in the Priceville area will be provided.
- **Madison County EMA**
This criterion will be demonstrated by the American Red Cross, out of sequence on April 10, 2003 at First Baptist Church at 1:30 p.m.

**Sub-element 6.d-Transportation and Treatment of Contaminated injured
Individuals**

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2., H.10., K.5.a.b., L.1., 4.)

EXTENT OF PLAY

- **AEMA**
Not Applicable
- **ORC**
Not Applicable
- **Lauderdale County EMA**
Not Applicable
- **Lawrence County EMA**
Not Applicable
- **Limestone County EMA**
Not Applicable
- **Morgan County EMA**
To be determined for out of sequence at a future date.
- **Madison County EMA**
Not Applicable

**Table 1
Lauderdale County
Out of Sequence/**

Staff

Monday

	Lauderdale Co.	REF	REF
1:00	EOC	1.b.1 Facilities 1.d.1 Communications	
2:00			
2:15	Field Operations Building	1.e.1 Equipment	Travel to Bradshaw High School
3:00	Bradshaw High School	6.c.1 Congregate Care	
4:00	TRAVEL		
5:00			
6:00	Lauderdale Co. High School	3.b.1 K.I. 3.c.1 Special Populations	
7:00	Lauderdale Co. High School	3.d.1 Traffic Control 3.d.2 Impediments	
7:30	Lauderdale Co. High School	6.a.1 Reception Center	
8:15	Lauderdale Co. High School	6.b.1 Monitoring and Decon	
9:00			

**Assistance Visit
April 7,2003**

Table 2
Lawrence County
**Out Of Sequence/
Staff Assistance Visit**
April 8, 2003

Tuesday

April 8, 2003

	Lawrence.	REF	REF
8:30	EOC	3.a.1 Exposure Control	
9:00	EOC	3.d.1 Traffic Control 3.d.2 Impediments	3.b.1 KI
9:30	EOC	3.d.1 River Control	5.a.3 Route Alerting
10:00	EOC	3.c.2 Schools	
10:30	EOC	3.b.1 Special Populations	
11:00	Moulton Recreation Center	6.a.1 Reception Center	6.b.1 EM Worker Decon
11:30			
12:00	Moulton Church of Christ	6.c.1 Congregate Care	
12:30			
1:00	Lunch		
1:30			
2:00			
2:30			
3:00	EOC	1.b.1 Facilities	1.e.1 Equipment
3:30			
4:00			
4:30			

Table 3

**Limestone County
Out of Sequence/
Staff Assistance Visit
April 9, 2003**

Wednesday

	Limestone Co.	REF	REF
8:30			
9:00	EOC	1.b.1 Facilities	
	EOC	1.d.1 Communications	5.a.3 Exception Areas
	EOC	1.e.1 Equipment	
10:30	EOC	3.c.2 Schools	
11:00	EOC	3.c.1 Special Populations	
11:30			
12:00	Lunch		
12:30	Lunch		
1:00	Athens-Limestone Rescue Squad Building	3.a.1 Emergency Worker Exposure Control	
1:30	Athens-Limestone Rescue Squad Building	3.b.1 KI	
2:00	Athens-Limestone Rescue Squad Building	3.d.1 Traffic and Access Control-River	
2:30	Athens-Limestone Rescue Squad Building	3.d.1 Traffic and Access Control	
3:00	Athens-Limestone Rescue Squad Building	3.d.2 Impediments	
3:30			
4:00	West Limestone High School	6.a.1 Reception Centers	
5:00	West Limestone High School	6.c.1 Congregate Care	

**Table 4
Madison County
Out of Sequence/
Staff Assistance Visit
April 10,2003**

Thursday

	Madison Co.	REF	REF
8:30	Traffic Control EOC	3.d.1 Traffic Control	
9:00			
9:30	EOC	1.d.1 Communications	
10:00	Lewis Crews Stadium	1.e.1 Equipment 6.a.1 Registration Centers	
10:30			
11:00			
11:30			
12:00	Lunch		
12:30			
1:00			
1:30	1 st Baptist Church	6.c.1 Congregate Care	
2:00			
2:30			
3:00	Health Department	3.b.1 K.I.	
3:30			
4:00	EOC	3.a.1 Exposure Control	
4:30			

**Table 5
Morgan County
Out of Sequence/
Staff Assistance Visit
April 11,2003**

Friday

	Morgan Co.	REF	REF
8:30	EOC	3.d.1 Traffic Control	3.d.2 Impediments
9:00	EOC	3.a.1 River Access Control	3.a.1 E W Exposure Control
9:30	EOC	3.c.2 School Protective Actions	
10:00	EOC	3.c.2 Special Populations (Schools)	
10:30	EOC	3.c.1 Special Populations (Other)	
11:00	EOC	1.b.1 Facilities	1.d.1 Communications
11:30	EOC	5.a.3 Back-up siren plan	1.e.1 Equipment and Supplies
12:00	EOC	3.b.1 KI	
12:30	Health Dept.	3.b.1 KI supply and distribution	
1:00	LUNCH		
1:30	LUNCH/TRAVEL		
2:00	TRAVEL		
2:30	Priceville High School	1.d.1 Communications 1.b.1 Facilities	3.a.1 E W exposure control
3:00	Priceville High School	6.a.1 Reception Centers	
3:30	Priceville High School	6.b.1 Vehicle Decon	3.a.1 E W exposure control
4:00	Priceville High School	6.c.1 Congregate Care	
4:30			



STATE OF ALABAMA DEPARTMENT OF
PUBLIC HEALTH

Donald E. Williamson, MD
State Health Officer

April 15, 2003

*Dr. Robert Perdue
Federal Emergency Management Agency
Region IV
3003 Chamblee-Tucker Road
Atlanta, GA 30341*

Dear Dr. Perdue:

Enclosed you will find the Radiation Control revisions for the Extent-of-Play for the 2003 Browns Ferry Nuclear Power Plant Exercise that you had requested. We have included the text that you had recommended. In addition, we have given our responses in bold italicized type so that it will make for easier viewing.

If you have any question or concerns about this report, I trust you will contact me and let me know of any changes that you feel are needed.

Sincerely,

A handwritten signature in cursive script that reads "Tonya".

*Tonya Appleyard
Senior Radiation Physicist
Office of Radiation Control*

Enclosures

Browns Ferry Nuclear Power Plant
June 4, 2003
FEMA Extent-of-Play recommendations

Mobilization (Sub-Element 1.a.1)

Please be specific as to what State positions will be pre-positioned for the exercise. We anticipate that other workers will actually be alerted and mobilized to report to the EOCs. This is applicable for AEMA, the 10-mile EPZ counties and Madison County.

The Office of Radiation Control will simulate alerting, notifying and mobilizing emergency personnel (Radiation Control personnel). Personnel will be pre-positioned at the Montgomery Emergency Room in the RSA Tower, the Decatur SRMAC room in the Morgan County EMA Office (Basement of Morgan County Courthouse), and the Joint Information Center (JIC) at Calhoun Community College. Radiation Control will demonstrate the ability to receive notification from the licensee and verify the notification. The facilities will demonstrate activation in a timely manner, scenario dependent.

Emergency Worker Exposure Control (Sub-Element 2.a.1)

A decision-making process must be in place so that if or when an emergency worker reaches his or her exposure limit, it can be determined whether or not to authorize exposure and for the situations that will allow for additional exposure in excess of the administrative limits. If this not done by County management, who do they need to contact for information? Please clarify in revised EOP or provide this information during the Federal evaluators meeting.

Authorization to exceed emergency worker exposure guidelines defined in Alabama Radiation Emergency Response Plan for Nuclear Power Plants must be obtained from the State Health Officer prior to any exposure limit being exceeded.

Implementation of KI Decision (Sub-Element 3.b)

Under the EOP, it is indicated that ORC will not demonstrate KI decision-making. However, two field monitoring teams will be evaluated and either through demonstration or discussion their knowledge of the use of KI will be ascertained. Please clarify this in the EOP. Also on this same page 13, under Limestone County, the SAV cannot be used to demonstrate the KI decision-making process. This should be done during the exercise.

KI (Potassium Iodide) is apart of the field monitoring teams equipment. KI is kept in the field monitoring kits at all times. The field monitoring teams are fully knowledgeable of the purpose of KI. And if the time arises for the need to take KI, field monitoring teams will fill out the content form which is in their field monitoring instruction manual and turn back into SRMAC/Health Department when they return from the field. Field monitoring teams will not demonstrate taking the KI, they will simulate only if the scenario calls for the need to take KI.

Plume Phase Field Measurements and Analyses (Sub-Element 4.a)

Please provide us with the time that field teams will be assembled.

Radiation Control will demonstrate plume phase field measurements and analyses, scenario dependent. Two field teams will be evaluated. Field teams will simulate using booties and gloves for contamination control. Field teams will be pre-positioned at the Morgan County Health Department Parking Lot (510 Cherry Street. N.E., Decatur, AL 35602). Time of field team assembly will be provided at the evaluators in-briefing meeting on Tuesday, June 3rd.

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events (Exercise Scenario) which was used as the basis for invoking emergency response actions by OROs in the BFNPP exercise on September 24, 2003.

This exercise scenario was submitted by the State of Alabama, Alabama RCA and TVA and approved by FEMA Region IV.

BFN 2003 NRC/FEMA GRADED EXERCISE NARRATIVE SUMMARY
CONFIDENTIAL
Rev. Date: 3/11/03

INITIAL CONDITIONS:

Unit 1 as is.

Unit 2 is at 100% power.

Diesel Generator "B" is running for its annual SI (?).

Unit 3 as is.

EVENTS: Note: Times are in scenario elapsed time (hr:min). While the Scenario has certain EALs listed which the SED is expected to make declaration of the emergency classifications (ALERT, SAE), it is possible that the SED may declare an emergency based on judgment or some other set of EALs which the Scenario did not expect. If any of these situations arise the Controllers must be ready to evaluate the accuracy and timeliness of any unexpected emergency declarations.

At five minutes (T=00:05) into the exercise a fire begins on the "B" Diesel Generator in the U-2 Diesel Generator Building.

At about twenty minutes (T=00:20) into the exercise an ALERT should be declared based on EAL 6.4-A (Fire in any area in Table 6.4-A [Diesel Generator Building] affecting safety system performance ["B" Diesel Generator]).

At one hour (T=01:00) into the exercise control Rod 02-27 drifts in. A leak of RCS begins to fill the East Scram discharge header and volume. The drain line for the East Scram discharge volume has become blocked and consequently does not drain very well. The control room is unaware of the rising discharge volume due to a failure of the level instruments for the East Scram discharge volume.

At one hour thirty minutes (T=01:30) into the exercise the "B" steam line develops a leak in the Reactor building steam tunnel. The Reactor building ventilation monitors alarm. The MSIVs close due to high steam tunnel temperature. The reactor gets a Scram signal but an ATWS occurs on the east scram header. HPCI fails to start due to a 120 Volt AC power failure.

At one hour forty minutes (T=01:40) into the exercise, some fuel clad fails due to stresses during the ATWS. Enough fuel clad fails to result in RCS DEI 131 > 300 $\mu\text{C}/\text{gm}$. The accident monitors in the U-2 Drywell alarm. EAL 2.3-A (Drywell radiation levels at or above the values listed in Table 2.3-A/2.3-S2, with the RCS barrier intact) conditions are met. Operations may begin SLC injection.

At one hour forty five minutes (T=01:45) into the exercise A SAE should be declared based on EAL 1.2-S (Failure of automatic scram, manual scram, and ARJ to bring the Reactor subcritical).

At three hours (T=03:00) into the exercise the RCIC steam line has a 25% break in the 519' NW Quad upstream of 2-FCV-71-8 and can not be isolated. This primary system is discharging into the Reactor Building. As the radioactivity begins to increase in the reactor building an area radiation monitor near the leak point increases above its maximum safe limit.

At three hours fifteen minutes (T=03:15) into the exercise a GE should be declared based on EAL 3.2-G (An unisolable Primary System is discharging into Secondary Containment AND Any area radiation level at or above the Maximum Safe Operating area Radiation Limit in Table 3.2 [1000 mR/hr] AND Any indication of potential or significant fuel failure exists [2-RE-90-272A = 345 R/hr; 2-RE-90-273A = 164 R/hr]).

The exercise terminates at about six hours (T=06:00) into the exercise.

BFN 2003 NRC/FEMA GRADED EXERCISE NARRATIVE SUMMARY
CONFIDENTIAL
Rev. Date: 3/11/03

EXPLANATION OF EVENTS:

A fire begins on the "B" Diesel Generator.

Provides a reason for the ALERT.

Control Rod 02-27 drifts in.

Provides some indication as to why a hydraulic ATWS occurs later.

"B" steam line develops a leak.

Provides a reason for the Reactor to scram.

ATWS occurs on the east scram header.

Provides a reason for the SAE and for failing fuel clad.

HPCI fails to start.

Provides an OSC task and reduces the RCS makeup capability while Unit 2 RCS is at high pressure.

Clad fails resulting in RCS DEI 131 > 300 $\mu\text{C/gm}$

Allows increased release rates for the offsite plume requirements and results in $\geq 300 \mu\text{C/gm}$ DEI RCS activity needed in the GE declaration.

RCIC steam line has a break.

This leak provides the reason for the GE and a release path outside of containment.

SCENARIO TIMELINE

REV. DATE 3-11-03

EMERGENCY PREPAREDNESS

2003

NRC/FEMA GRADED EXERCISE

08:00(CDT)

00:00 00:30 01:00 01:30 02:00 02:30 03:00 03:30 04:00 04:30 05:00 05:30 06:00 06:30

ALERT(EAL 6.4-A)

SAE(EAL 1.2-S)

GE(EAL 3.2-G)

T= I.C. DG "B" SI in progress.

T= 00:15 Fire begins on DG "B"

T= 00:45 Fire is out on DG "B".

T= 01:00 Control Rod 02-27 drifts in.

T= 01:30 U-2 "B" steam line leak develops.

T= 05:00 U-2 "B" steam line leak may be repaired if worked.

T= 01:31 U-2 MSIVs shut.

T= 01:31 An ATWS occurs in U-2 Reactor. T= 01:50 U-2 Reactor is scrammed.

T= 01:32 U-2 HPCI will not start

T= 04:00 U-2 HPCI may be returned to service.

T= 01:40 Fuel Clad failures occur due to ATWS stresses.

T= 03:00 RCIC steam supply line leaks onto elev 519 NW quad

T= 01:30 short pull release of airborne radioactivity from the broken steam line occurs until isolated.

T= 03:00 airborne radioactivity release begins due to RCIC steam leak

T= 03:01 RCIC steam supply isolation valve 2-FCV-73-2 fails to close.

T= 03:01 RCIC steam supply isolation valve 2-FCV-73-3 fails to close.

T= 05:00 RCIC steam supply isolation valve 2-FCV-73-3 may be closed if repaired.

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T= ? The Exercise ends when the release to the environment ends, when 2-FCV-73-3 is closed, or when T=06:00