Final Exercise Report

Grand Gulf Nuclear Station

Licensee: **Entergy Operations, Inc.**

Exercise Date: **September 17, 2003**

Report Date: **December 15, 2003**

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

Federal Emergency Management Agency
Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341

December 15, 2003

Mr. Ellis W. Merschoff
Regional Administrator - RIV
Nuclear Regulatory Commission
Harris Tower
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064

Dear Mr. Merschoff:

Enclosed is a copy of the Grand Gulf Nuclear Station final exercise report for the September 17, 2003, full participation plume exposure pathway exercise of the offsite radiological emergency response plans and procedures site-specific to the Grand Gulf Nuclear Station. This report addresses the evaluation of the plans and preparedness for the State of Mississippi and Claiborne County, located within the 10-mile emergency planning zone, and the host counties of Copiah and Warren. The Federal Emergency Management Agency Region IV staff prepared the final exercise report for the State of Mississippi and its affected counties. Copies of this report will be forwarded to the State of Mississippi, FEMA and NRC Headquarters by my staff. FEMA Region VI prepares the exercise report for the State of Louisiana and its affected local governments.

All agreed upon evaluation criteria for this exercise were demonstrated. No Deficiencies and only two Areas Requiring Corrective Action (ARCA) were identified during the exercise. The ARCAs involved the SEOC and Claiborne County concerning Alert and Notification of the public. The corrective action plan for the ARCAs is forthcoming from the State of Mississippi.

Based on the results of the September 17, 2003 exercise, and FEMA's review of Mississippi's Annual Letter of Certification for 2001 and 2002, the offsite radiological emergency response plans and preparedness for the State of Mississippi and the appropriate local jurisdictions site-specific to the Grand Gulf Nuclear Station can be implemented and are adequate to provide reasonable assurance that appropriate measures

can be taken to protect the health and safety of the public in the event of a radiological emergency at the site. The 44 CFR Part 350 approval of the State of Mississippi's offsite radiological emergency response plans and preparedness site-specific to Grand Gulf Nuclear Station granted on June 23, 1983, will remain in effect.

Should you have questions, please contact Eddie Hickman at 770/220-5370.

Sincerely,

Kenneth O. Burris, Jr.
Regional Director

Enclosure

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I. EXECUTIVE SUMMARY

On September 17, 2003, the Federal Emergency Management Agency (FEMA), Region IV and VI, conducted a full participation plume exposure pathway exercise in the emergency-planning zone (EPZ) around the Grand Gulf Nuclear Station (GGNS). A separate report is prepared by Region VI concerning the evaluation of the State of Louisiana and Tensas Parish. 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 most recent exercise at this site was conducted on March 6, 2002. The qualifying emergency preparedness exercise was conducted November 4-5, 1981 at the GGNS.

The State of Mississippi, the risk County of Claiborne County and the host Counties of Copiah and Warren participated in this exercise. FEMA Region IV wishes to acknowledge the exceptional efforts of the many individuals who planned, prepared for and participated in this exercise. Protecting the public health and safety is the full-time job of some of the exercise participants and an assigned responsibility for others. Others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. The cooperation and teamwork of all participants demonstrated the quality of training and preparation.

This report contains the evaluation of the exercise on September 17, 2003, as well as out-of-sequence activities conducted in June 2003, which included: traffic and access control, protective action for schools, registration and temporary care of evacuees and a medical service drill.

The State and local organizations demonstrated knowledge of, and the ability to implement, their emergency response plans and procedures. No Deficiency was identified, however, two Areas Requiring Corrective Action (ARCA) were identified at the SEOC and Claiborne County concerning Alert and Notification of the public. One ARCA previously identified at the Emergency News Media Center was corrected.

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 (FNF) include the following:

- Taking the lead in offsite emergency planning and in the review and evaluation of radiological emergency response plans (RERP) 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 Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA (Federal Register, Vol. 58, No. 176, September 14, 1993).

- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:

    - Department of Agriculture
    - Department of Commerce
    - Department of Energy
    - Department of Health and Human Services
    - Department of the Interior
    - Department of Transportation
    - Environmental Protection Agency
    - Food and Drug Administration and
    - Nuclear Regulatory Commission.

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 GGNS to FEMA Region IV by the State of Mississippi was made on May 22, 1981. Formal approval of these RERPs was granted on June 29, 1983, under Title 44 CFR 350.

A REP exercise was conducted on September 17, 2003, by FEMA Regions IV and VI 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 GGNS. This report presents the exercise results and findings for the State of Mississippi and its counties on the performance of the offsite 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 being made by the FEMA Region IV RAC Co-Chair and Chief Evaluator with final approval 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 Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;

- FEMA-REP Exercise Evaluation Methodology, April 25, 2002.

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

Section IV, entitled "Exercise Evaluation and Results," presents summary information on the demonstration of applicable exercise criterion at each jurisdiction or functional entity evaluated in a results only format.

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the September 17, 2003 exercise to test the offsite emergency response capabilities in the area surrounding the GGNS, in the State of Mississippi.

A. Plume Emergency Planning Zone Description

The GGNS is owned and operated by Entergy Operations Inc. It is located near the City of Port Gibson in Claiborne County, Mississippi. Portions of Claiborne County, Mississippi and Tensas Parish, Louisiana, are located in the 10-mile emergency planning zone (EPZ). The land in the Mississippi EPZ is primarily agricultural in nature. The only major recreation area in the 10-mile EPZ is Grand Gulf State Park, located one mile east of the plant. The major transportation facilities in the EPZ include the Mississippi River, US Highway 61, State Highways 27, 18 and 547 and the Natchez Trace Parkway. The 10-mile EPZ includes 11 protective action areas.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the GGNS exercise on September 17, 2003.

STATE OF MISSISSIPPI

Board of Animal Health
Department of Agriculture and Commerce
Department of Environmental Quality
Department of Extension Service
Department of Humans Services
Department of Mental Health
Department of Transportation
Department of Wildlife, Fisheries and Parks
Development Authority/Energy Division
Division of Radiological Health
Emergency Management Agency
Forestry Commission
Highway Patrol
Military Department

RISK JURISDICTION

Claiborne County

HOST JURISDICTIONS

Copiah County
Warren County

PRIVATE/VOLUNTEER ORGANIZATIONS

American Red Cross
Salvation Army

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the GGNS exercise on September 17, 2003.

Table 1. Exercise Timeline

DATE AND SITE: September 17, 2003 – Grand Gulf Nuclear Station – Mississippi – (Louisiana Timeline)

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken					
		SEOC	MDRH	ENMC	CLAIBORNE COUNTY	LA STATE	TENASAS PARISH
Unusual Event	0811	0835	0835		0835	0830	0827
Alert	0919	0937	0937	0937	0930	0925	0025
Site Area Emergency	1045	1108	1108	1104	1125	1110	1130
General Emergency	1126	1149	1149	1129	1152	1148	1150
Simulated Rad. Release Started	1155	1220	1220	1200	1215		1218
Simulated Rad. Release Terminated	On-going	On-going	On-going	On-going	On-going		
Facility Declared Operational		1026	1026	1020	0930	0945	1055
Declaration of State of Emergency		1105	1105	1139	1130	1025	0944
Exercise Terminated		1408	1408	1403	1410		1406
Early Precautionary Actions: Close Air Space and Mississippi River Relocate students and Specials needs population, establish TCPs		1126 1110			1122		1121
1st Siren Activation					1143		1210
Media Briefing					1150		
1st Protective Action Decision Evacuate PPAs: 2 mile radius, areas 1 & 7 to 5 miles Shelter PPAs: Rest of 10-mile EPZ		1147			1158		1158
2nd Siren Activation		1200			1200		1210
EAS Message		1205			1205		1210
2nd Protective Action Decision Evacuate PPAs: 1, 2a, 2b & 7 Shelter PPAs: Remaining 10-mile		1309			1312		
3rd Siren Activation		1315			1315		
EAS Message		1315			1315		
KI Decision: Emergency workers ingest			1225		1229		

PPA – Protective Action Area

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of Mississippi Jurisdictions and functional entities, which participated in the September 17, 2003, exercise to test the offsite emergency response capabilities of State and local governments within the 10-mile EPZ around the GGNS.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in REP Exercise Evaluation Methodology, dated April 25, 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 that were scheduled for demonstration during this exercise, by all participating jurisdictions and functional entities. Exercise criteria are listed by number. The demonstration status of those criteria 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)

Table 2. Summary of Exercise Evaluation

DATE AND SITE: September 17, 2003 – Grand Gulf Nuclear Station

ELEMENT/Sub-Element	MEMA	MSDH/DRH	EOF	ENMC	CLAIBORNE	COPIAH	WARREN
1. EMERGENCY OPERATIONS MANAGEMENT							
1.a.1. Mobilization	M	M			M		
1.b.1. Facilities	M	M	M	M	M		
1.c.1. Direction and Control	M	M	M	M	M		
1.d.1. Communications Equipment	M	M	M	M	M		
1.e.1. Equipment & Supplies to Support Operations	M	M	M	M	M	M	M
2. PROTECTIVE ACTION DECISION MAKING							
2.a.1. Emergency Worker Exposure Control	M	M		M	M		
2.b.1. Rad Assessment and PARs Based on Available Info		M	M				
2.b.2. Rad Assessment and PADs for the General Public	M	M			M		
2.c.1. Protective Action Decisions for Special Populations					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
3.b.1. Implementation of KI Decisions		M			M		
3.c.1. Implementation of PADs for Special Populations					M		
3.c.2. Implementation of PADs for Schools					M		
3.d.1. Implementation of Traffic and Access Control	M				M		
3.d.2. Impediments to Evacuation and Traffic and Access Control	M				M		
3.e.1. Implementation of Ingestion Decisions Using Adequate Info					M		
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		M					
4.a.2. Plume Phase Field Measurement & Analysis Management		M					
4.a.3. Plume Phase Field Measurements & Analysis Procedures		M					
4.b.1. Post Plume Field Measurement & Analysis							
4.b.2. Laboratory Operations							
5. EMERGENCY NOTIFICATION & PUBLIC INFO							
5.a.1. Activation of Prompt Alert and Notification	A				A		
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							
5.b.1. Emergency Info and Instructions for the Public and the Media	M			M	M		
6. SUPPORT OPERATIONS/FACILITIES							
6.a.1. Monitoring and Decon of Evacuees and EWs and Registration of Evacuees					M	M	M
6.b.1. Monitoring and Decon of Emergency Worker Equipment					M		
6.c.1. Temporary Care of Evacuees						M	M
6.d.1. Transport and Treatment of Contaminated Injured Individuals					M		

LEGEND: **M = Met Criterion** **A = ARCA**

B. Status of Jurisdictions Evaluated

This subsection provides information on the evaluation of each participating jurisdiction and functional entity in a results based 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 were 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 that remain unresolved. Included is a description of the ARCA 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** – Description(s) of ARCA(s) assessed during previous exercises, which were resolved in this exercise and the corrective actions demonstrated.

- **Prior ARCAs - Unresolved** – Description(s) of ARCA(s) 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 may be discussed in this report.

- A **Deficiency** is defined in FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that 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."

1. STATE OF MISSISSIPPI

1.1 State Emergency Operations Center

The State Emergency Operations Center (SEOC) staff worked well as a team. The Chief of Operations effectively managed the exercise providing periodic briefings and direction and control to all participants. Staff briefings including updates from the utility representative were timely and informative. All Emergency Support Functions (ESF) were actively involved in respective responsibilities and encouraged to provide feedback. The Director and deputy participated in the decision making process. The Public Information Officer (PIO) and staff were actively involved in the exercise. When the primary communication circuit with the nuclear plant was disabled, the SEOC staff used the backup system to obtain critical information.

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

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:**

Issue No.: 028-03-5.a.1-A-01

Condition: The State of Mississippi did not follow its procedures to verify that Claiborne County had received the notification of the Site Area Emergency (SAE) classification. The State also released information on the protective action for schools prior to the time that Claiborne County implemented the relocation of the schools.

At 1109, the State called Claiborne County over the "operational hotline." Although, GGNS declared a SAE at 1045, Claiborne County had not received the information and the State did not verify with the County that they were aware of the change in Emergency Classification Level (ECL). The discussion between the Claiborne County Civil Defense Director (CCCDD) and the Director of the Mississippi Department of Radiological Health concerned the actions that would be taken in the event of an escalation to a General Emergency (GE). The State stated that they would order the evacuation of protective action areas (PPA)l and 7 and shelter the remainder of the Mississippi EPZ if the plant declared a GE.

The State issued an Emergency Alert System (EAS) message at 1110 stating that the "precautionary transfer of special needs citizens and school children" had been directed. However, Claiborne County did not initiate the actions until 1122. A news release concerning the SAE that gave the similar information to the EAS message, was also released at 1110.

Possible Cause: State personnel did not follow procedures to verify that Claiborne County had received ECL information and initiated actions.

Reference: NUREG-O654, E.5; 6 and 7. Mississippi Radiological Emergency Preparedness Plan (MREPP), Annex C, pages C-2 and C-3, paragraph C-2.

Effect: The County government's ability to take appropriate action to support the response to the accident is limited to the information it has received. Without verifying that the county has received the change in ECL the State may be unaware that the county has not implemented actions dictated by the ECL.

Recommendations: Review notification procedures and revise as necessary to ensure that State verifies that Claiborne County has received ECL information and that the county has taken appropriate actions at each ECL. Provide training to appropriate staff.

Schedule of Corrective Actions: On the date this report was published, the State Schedule of Corrective Actions was not available.

d. **NOT DEMONSTRATED:** NONE

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

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

1.2 Emergency Operations Facility/Dose Assessment

The Grand Gulf Emergency Operations Facility (EOF) is an excellent facility from which all participating response organizations can effectively manage emergency operations. Communications and coordination among the State officials deployed to the EOF and the utility were exemplary. The State staff deployed to the EOF effectively performed independent accident analyses, to include radiological dose assessment; developed and recommended appropriate protective actions, provided direction and control for the State's radiological field monitoring teams, and kept the SEOC in Mississippi, fully informed of all technical developments.

a. **MET:** Criteria 1.b.1, 1.c.1, 1.d.1, 1.e.1 and 2.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

1.3 Emergency News Media Center

The Emergency News Media Center (ENMC) staff demonstrated a high degree of training and preparedness in their operation. Improvements in several areas, and the incorporation of numerous recommendations from the last evaluated exercise, were very evident. Most notable was the increased interaction between utility, State and local personnel, and the amount of coordination occurring between the ENMC's Mississippi Deputy Lead PIO and the Lead PIO in the SEOC. Activation of the ENMC was timely. Material presented in the three media briefings was consistent with news releases and focused on the protection of the public. The Emergency Information Center (EIC) within the ENMC fielded over 400 inquiries, identified trends, and alerted the utility spokesperson to rumors so he and the State representatives could clarify and correct incorrect information.

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

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:**

Issue No.: 028-02-5.b.1-A-03

Description: The 1140 protective action decision (PAD) was to evacuate Protective Action Areas (PAAs) 1 and 5a and to shelter-in-place the remainder of the EPZ. The information provided to the public was inconsistent with this decision. The 1150 EAS message stated:

> **Government authorities have directed the following action for residents of the Claiborne County area;**
>
> - **Evacuation in the following Protective Action Areas: 2 miles within Area 1 – Between Big Black River and Bayou Pierre west of Old Grand Gulf Road 5 miles within Area 5a – Between Bayou Pierre and Russum Westside Road, east to Widow's Creek.**
> - **Shelter-in place the remaining 10 mile EPZ is sectors K, L and M.**

The accompanying New Release included the information above and in the following sentence stated: "The remaining 10-mile EPZ is directed to shelter-in-place." The Mississippi spokesperson during the 1210 news conference stated that the shelter-in-place instruction was for the remaining EPZ not just sectors K, L and M. The reference to sectors K, L and M is not consistent with the information

provided to the public in the 2002 GGNS Emergency Public Information Brochure, which only identifies the PAAs.

Corrective Action Demonstrated: All EAS messages, news releases, and media briefings addressed geographical areas as described in the 2003 GGNS Emergency Public Information Brochure, (i.e., as PAAs). During the media briefings the State and County/Parish spokespersons correctly provided information to the media that was consistent with the PADs using the appropriate terminology. When referring to the PAAs, spokespersons also provided a description of the PAAs consistent with literature.

f. **PRIOR ARCAs – UNRESOLVED:** NONE

1.4 Radiological Health

The Mississippi Division of Radiological Health (DRH) Accident Assessment Team was co-located with MEMA in the SEOC. The Accident Assessment Team was comprised of the DRH Director, two physicists from DRH, and a utility liaison. They were professional and well trained. They developed protective action recommendations (PAR) in a timely and professional manner based upon available information and were proactive in keeping abreast of a changing situation. The DRH Director gave excellent briefings to the SEOC on plant conditions and the rational for the PARs.

a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.a.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

1.5 Radiological Field Monitoring Teams

Both field monitoring teams (FMT) did an excellent job conducting pre-operational checks to assure a complete inventory of equipment and supplies, including appropriate dosimetry and potassium iodide (KI), and the operability of radiological instrumentation. The FMTs demonstrated proper exposure control techniques including knowledge of turn back values. They also successfully demonstrated the appropriate use of equipment and procedures to determine field radiation measurements. The measurements included ambient radiological readings, measurements of airborne radioiodine concentrations in the presence of noble gasses and obtaining samples of particulate activity in the airborne

plume. Both teams displayed a sense of purpose and professionalism throughout the conduct of the exercise.

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 State Traffic Control Points

The Mississippi Highway Patrol and Mississippi Department of Transportation demonstrated traffic control points (TCP) and traffic support through interviews at the Claiborne County Emergency Operations Center (EOC). Both law enforcement officers and transportation personnel were knowledgeable of duties to include traffic impediments, dosimetry use, turn back values, exposure record and evacuation routes.

a. **MET:** Criteria 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. RISK JURISDICTION

2.1 CLAIBORNE COUNTY

2.1.1 Emergency Operations Center

The EOC is an effective operation. All ESFs were on-site for excellent coordination and cooperation during the exercise. Communications were received and distributed in a timely manner. Elected officials were present in the EOC for early and coordinated decision making. Public information was disseminated by the PIO upon decision by the EOC Director. At 1229, it was announced in the EOC that KI had been recommended for emergency workers and that the information should be relayed to those in the field.

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

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:**

Issue No.: 28-03-5.a.1-A-03

Condition: Sirens were sounded prior to a media press conference at 1150 without coordination with any of the required parties for decision-making, including any elected officials at the EOC, and without discussion of information to be disseminated to the public.

Possible Cause: The County PIO notified the Director of a press conference at 1150 and they needed to sound the sirens. The communicator was instructed to sound the sirens at 1143, prior to the press conference. Coordination with the State for sounding of the sirens at 1143 was not done. There was also no conversation pertaining to the content of information being presented to the media or public.

Reference: Claiborne County Basic Plan Sections D and E; Annex C Section II-A page C-1., paragraph 2.

Effect: The public would have heard the sirens without the benefit of any instructions for them to follow. This has the potential to cause public panic and overload the 911 system with calls from local citizens.

Recommendation: That, if present, elected officials should be included in all calls on the Alert Notification System (ANS), in addition to the operations manager of the EOC. Sirens should never be sounded without prior coordination with required parties, i.e. MEMA and Mississippi State Department of Health/DRH.

Schedule of Corrective Actions: The decision-makers present in the Claiborne County EOC at the time of the ANS phone message will hear the message along with the Director over a speaker phone. Sirens will not be sounded without prior coordination with required parties.

d. **NOT DEMONSTRATED:** NONE

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

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.1.2 Traffic and Access Control

Port Gibson provided two police officers and personnel from the city road maintenance department to demonstrate traffic and access control. Police officers and maintenance personnel were knowledgeable of their duties to include traffic impediments and the use of dosimetry, KI and monitoring equipment.

a. **MET:** Criteria 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 Protective Action for Schools

Five bus drivers were interviewed at the EOC. They were knowledgeable of their duties and responsibilities to include dosimetry and KI. Buses are escorted by police officers. Students are transported to Hazelhurst High School. Pagers with a special code are used to alert bus drivers to report to the school in the event of an emergency.

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

2.1.4 Emergency Worker Monitoring & Decontamination

The emergency worker monitoring and decontamination station was demonstrated by the Claiborne County Fire Department at the Pattison Fire Station. Two vehicles and four emergency workers were monitored. One vehicle and two workers were found to have contamination. The contaminated individuals were decontaminated and provided alternate clothing. The monitors were extremely knowledge about their responsibilities, including monitoring of vehicles and people, and providing several alternate methods for decontamination. They were aware of their dosimeters, and exposure limits and if required, the use of KI.

a. **MET:** Criteria 1.e.1, 3.a.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

3. HOST JURISDICTIONS

3.1 COPIAH COUNTY

3.1.1 Reception and Congregate Care

The demonstration of monitoring and registration of evacuees was conducted at Hazelhurst High School. The facility affords sufficient space to accomplish the monitoring, decontamination and registration of evacuees arriving from affected areas surrounding the GGNS. Volunteers from the Copiah County Emergency Management Agency (EMA) and Hazelhurst Fire Department staff this operation. The training, dedication and proficiency of the volunteers resulted in an excellent demonstration of their capabilities. The staff was very knowledgeable about dosimetry, contamination control, and the care of evacuees. Volunteers from the fire department and EMA are to be commended for this excellent operation.

The capability to care for up to 1000 evacuees was successfully demonstrated at Hazelhurst High School in Copiah County. Facilities, supplies and equipment are sufficient, as is staffing by American Red Cross (ARC) volunteers. Procedures are in place to obtain and maintain pertinent evacuee information, and to insure contaminated evacuees do not enter the shelter. All personnel were highly professional and motivated.

a. **MET:** Criteria 1.e.1, 3.a.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

3.2 WARREN COUNTY

3.2.1 Temporary Care

ARC, Department of Social Services (DSS) and a host of volunteers effectively demonstrated registration of six evacuees into the shelter. The shelter was equipped to accommodate the needs of individuals to include family members. The shelter manager was knowledgeable of ARC policy and procedures. Volunteers are to be commended for their outstanding participation during this exercise.

a. **MET:** Criteria 1.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

3.2.2 Emergency Worker Equipment Monitoring and Decontamination

The Warren County Emergency Management Agency, Vicksburg Fire Department, ARC, DSS, Warren Yazoo Mental Health Services and a host of volunteers effectively demonstrated monitoring and decontamination of emergency workers, equipment, and registration of evacuees. Emergency workers demonstrated proper monitoring techniques and registration of evacuees. Individuals were knowledgeable regarding dosimetry and KI. Two vehicles and six individuals were monitored and decontaminated. A special recognition should be given to all of the volunteers for the excellent job they did during the exercise.

a. **MET:** Criteria 1.e.1, 3.a.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

3.2.3 Medical Service Drill (MS-1)

On June 12, 2003, a medical services drill was conducted to evaluate the response of the River Region Medical Center emergency room (ER) staff and the Vicksburg Fire Department Emergency Medical Service (EMS). The medical center was prepared to receive, monitor, decontaminate and treat the patient. The transfer of the patient was proper and prompt, with all appropriate information given to ER staff. The doctor assisted by two nurses assessed the patient's condition and established priorities for treatment of injuries and decontamination. Monitoring and decontamination procedures were appropriate, samples were taken and recorded. The ER staff performed well as a team. Exit procedures were appropriately demonstrated. The EMS crew was monitored, demonstrated appropriate exit procedures, and discussed where they would go to be decontaminated. All individuals from the EMS and medical center knew their duties and responsibilities, and performed them in a professional manner.

a. **MET:** Criteria 1.e.l, 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

4. SUMMARY OF AREAS REQUIRING CORRECTIVE ACTION

4.1 2003 ARCAs

4.1.1 28-03-5.a.1-A-01 SEOC

Condition: The State of Mississippi did not follow its procedures to verify that Claiborne County had received the notification of the Site Area Emergency (SAE) classification. The State also released information on the protective action for schools prior to the time that Claiborne County implemented the relocation of the schools.

At 1109, the State called Claiborne County over the "operational hotline." Although, GGNS declared a SAE at 1045, Claiborne County had not received the information and the State did not verify with the County that they were aware of the change in Emergency Classification Level (ECL). The discussion between the Claiborne County Civil Defense Director (CCCDD) and the Director of the Mississippi Department of Radiological Health concerned the actions that would be taken in the event of an escalation to a General Emergency (GE). The State stated that they would order the evacuation of protective action areas (PPA) 1 and 7 and shelter the remainder of the Mississippi EPZ if the plant declared a GE.

The State issued an Emergency Alert System (EAS) message at 1110 stating that the "precautionary transfer of special needs citizens and school children" had been directed. However, Claiborne County did not initiate the actions until 1122. A news release concerning the SAE that gave the similar information to the EAS message, was also released at 1110.

Possible Cause: State personnel did not follow procedures to verify that Claiborne County had received ECL information and initiated actions.

Reference: NUREG-O654, E.5; 6 and 7. Mississippi Radiological Emergency Preparedness Plan (MREPP), Annex C, pages C-2 and C-3, paragraph C-2.

Effect: The County government's ability to take appropriate action to support the response to the accident is limited to the information it has received. Without verifying that the county has received the change in ECL the State may be unaware that the county has not implemented actions dictated by the ECL.

Recommendations: Review notification procedures and revise as necessary to ensure that State verifies that Claiborne County has received ECL information and that the county has taken appropriate actions at each ECL. Provide training to appropriate staff.

Schedule of Corrective Actions: On the date this report was published, the State Schedule of Corrective Actions was not available.

4.1.2 28-03-5.a.1-A-02 Claiborne County EOC

Condition: Sirens were sounded prior to a media press conference at 1150 without coordination with any of the required parties for decision-making, including any elected officials at the EOC, and without discussion of information to be disseminated to the public.

Possible Cause: The County PIO notified the Director a press conference at 1150 and they needed to sound the sirens. The communicator was instructed to sound the sirens at 1143, prior to the press conference. Coordination with the State for sounding of the sirens at 1143 was not done. There was also no conversation pertaining to the content of information being presented to the media or public.

Reference: Claiborne County Basic Plan Sections D and E; Annex C Section II-A page C-1., paragraph 2

Effect: The public would have heard the sirens without the benefit of any instructions for them to follow. This has the potential to cause public panic and overload the 911 system with calls from local citizens.

Recommendation: That, if present, elected officials should be included in all calls on the Alert Notification System (ANS), in addition to the operations manager of the EOC. Sirens should never be sounded without prior coordination with required parties, i.e. MEMA and Mississippi State Department of Health/DRH.

Schedule of Corrective Actions: The decision-makers present in the Claiborne County EOC at the time of the ANS phone message will hear the message along with the Director over a speaker phone. Sirens will not be sounded without prior coordination with required parties.

4.2 PRIOR ARCAS - RESOLVED

4.2.1 28-02-5.b.1-A-03 ENMC

Description: The 1140 protective action decision (PAD) was to evacuate Protective Action Areas (PAAs) 1 and 5a and to shelter-in-place the remainder of the EPZ. The information provided to the public was inconsistent with this decision. The 1150 EAS message stated:

Government authorities have directed the following action for residents of the Claiborne County area;

- **Evacuation in the following Protective Action Areas:**
  2 miles within Area 1 – Between Big Black River and Bayou Pierre west of Old Grand Gulf

Road 5 miles within Area 5a – Between Bayou Pierre and Russum Westside Road, east to Widow's Creek.

- **Shelter in place the remaining 10 mile EPZ is sectors K, L and M.**

The accompanying New Release included the information above and in the following sentence stated: "The remaining 10-mile EPZ is directed to shelter-in-place." The Mississippi spokesperson during the 1210 news conference stated that the shelter-in-place instruction was for the remaining EPZ not just sectors K, L and M. The reference to sectors K, L and M is not consistent with the information provided to the public in the 2002 GGNS Emergency Public Information Brochure, which only identifies the PAAs.

Corrective Action Demonstrated: All EAS messages, news releases, and media briefings addressed geographical areas as described in the 2003 GGNS Emergency Public Information Brochure, (i.e., as PAAs). During the media briefings the State and County/Parish spokespersons correctly provided information to the media that was consistent with the PADs using the appropriate terminology. When referring to the PAAs, spokespersons also provided a description of the PAAs consistent with literature.

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

ARC	American Red Cross
ARCA	Area Requiring Corrective Action
CCCDD	Claiborne County Civil Defense Director
CFR	Code of Federal Regulations
DHS	Department of Homeland Security
DHHS	Department of Health and Human Services
DOC	Department of Commerce
DOE	Department of Energy
DOI	Department of the Interior
DOT	Department of Transportation
DPIO	Deputy Public Information Officer
DRH	Division of Radiological Health
EIC	Emergency Information Center
EAS	Emergency Alert System
ECL	Emergency Classification Level
EEM	Exercise Evaluation Methodology
EMA	Emergency Management Agency
EMS	Emergency Medical Service
ENMC	Emergency News Media Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ER	Emergency Room
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FR	Federal Register
FRERP	Federal Radiological Emergency Response Plan
FRMAC	Federal Radiological Monitoring and Assessment Center
GE	General Emergency
GGNS	Grand Gulf Nuclear Station

KI	Potassium Iodide
MEMA	Mississippi Emergency Management Agency
MREPP	Mississippi Radiological Emergency Preparedness Plan
NRC	Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, November 1980*
OHL	Operation Hot Line
ORO	Offsite Response Organization
PAA	Protective Action Area
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIO	Public Information Officer
PPA	Protective Action Area
RAC	Regional Assistance Committee
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
TCP	Traffic Control Point
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS

The following is a list of the personnel who evaluated the GGNS pilot exercise on September 17, 2003. The organization represented by each evaluator is indicated below.

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

Lawrence Robertson — **Co-RAC Chairman**

EVALUATION SITE	EVALUATOR	ORGANIZATION
Chief Evaluator	Eddie Hickman	DHS/FEMA
STATE OF MISSISSIPPI		
State Emergency Operations Center	Eddie Hickman	DHS/FEMA
	Bill Maier	NRC
SEOC - PIO	Bill Maier	NRC
Radiological Health	Bernie Hannah	ICF
Radiological Field Monitoring Teams	Harry Harrison	ICF
	Jim Hickey	ICF
Dose Assessment/EOF	Robert Trojanowski	NRC
Emergency News Media	Robert Perdue	DHS/FEMA
	Bill Larrabee	ICF
CLAIBORNE COUNTY		
Emergency Operations Center	Helen Wilgus	DHS/FEMA
	Beth Massey	DHS/FEMA
Schools (A.W. Watson Elementary School)	Jane Young	DHS/FEMA
EW Decon	Jane Young	DHS/FEMA
WARREN COUNTY		

Medical Services Drill (MS-1)	Eddie Hickman	DHS/FEMA
(June 12, 2003 - Completed)	Larry Robertson	DHS/FEMA

COPIAH COUNTY

Evacuee Monitoring & Registration (September 16, 2003 -1830 hours)	Harry Harrison	ICF
Temporary Care of Evacuees (September 16, 2003 -1900 hours)	Jim Hickey	ICF

APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise criteria scheduled for demonstration in the Grand Gulf Nuclear Station exercise on September 17, 2003 and the extent-of-play agreement approved by FEMA Region IV.

A. Exercise Criteria

The specific radiological emergency preparedness criteria, which were to be demonstrated, have been consolidated with the extent-of-play for this event and are explained in subsection B.

B. Extent-of-Play Agreement

The Extent-of-Play agreement on the following pages was submitted by the State of Mississippi, and was approved by FEMA Region IV.

Mississippi 2003 GGNS Exercise Extent-of Play Agreement

OFFSITE OBJECTIVE
Unless otherwise noted, all demonstrations occur 9/17/03 during exercise time. Some activities will pre-stage personnel in order to conserve time.

1. Emergency Operations Management

Criterion 1.a.1: Mobilization

State EMA — (State Emergency Management)
MSDH/DRH – (MS State Department of Health/Department Radiological Health)
Claiborne County

State EOC and Claiborne County EOC staff will not be pre-staged, except for the MEMA Public Information Officer (PIO) and certain MSDH/DRH staff, i.e., Radiological Emergency Response Team Coordinator (RERTC) @ EOF and Radiological emergency Response Team (RERT). They will pre-stage due to travel times to location, as it will take too long for staff to arrive for the evaluation. Normal day-to-day staff will be present at evaluated locations.

Criterion 1.b.1: Facilities

State EMA
MSDH/DRH
Claiborne County

Criterion 1.c.1: Direction and Control

State EMA
MSDH/DRH
Claiborne County

Criterion 1.d.1: Communications

State EMA
MSDH/DRH
Claiborne County

Criterion 1.e.1: Equipment and Supplies to Support Operations

State EMA
MSDH/DRH
Claiborne County
Copiah County (To be demonstrated 9/16/03 beginning at 6:30 pm.)
Warren County (Demonstrated out of sequence on 6/12/03) Complete.

Room accommodations will be set up beforehand to facilitate the exercise activities.

2. Protective Action Decision Making

Criterion 2.a.1: Emergency Worker Exposure Control

State EMA
MSDH/DRH – (RERTs during accident assessment activities.)
Claiborne County

Field Radiological Monitoring – Ambient Radiation Monitoring

Criterion 2.b.1: RAD Assessment & PAR & PADs based on Available Information

MSDH/DRH – (Accident Assessment functions at GGNS EOF.)
DRH EOF staff will pre-stage in Claiborne County at the EOF @ 10:00 am.

Criterion 2.b.2: RAD Assessment & PARs and PADs for the General Public

State EMA
MSDH/DRH
Claiborne County

Criterion 2.c.1: Protective Action Decisions for Special Populations

Claiborne County

3. Protective Action Implementation

Criterion 3.a.1: Implementation of Emergency Worker Control

MSDH/DRH – (With RERTs and at EOF)
Claiborne County
Copiah County (To be demonstrated 9/16/03 beginning @ 6:30 pm.)
Warren County (Demonstrated out of sequence on 6/12/03). **Complete**

RERTs and DRH EOF personnel will pre-stage in Claiborne County @ 10:00 am. Staging area will be the Port Gibson area and the EOF respectively.

Criterion 3.b.1: Implementation of KI Decisions

MSDH/DRH – (Field Team Personnel)
Claiborne County - (County Emergency Workers, i.e., school bus drivers)

Physical distribution of KI will be simulated. Distribution logs and stock information will be available for review upon request.

Criterion 3.c.1: Implementation of PADs for Special Populations

Claiborne County

Special populations alert list will be broken down by the kind of assistance needed along with available resources.

Criterion 3.c.2: Implementation of PADs for Schools

Claiborne County – A.W. Watson Elementary School & Claiborne County School Superintendent of Education:

Demonstration consists of interviews with school officials detailing their respective evacuation procedures. The Superintendent of Education was conducted out-of-sequence on 6/10/03. **Complete**

Interview with A. W. Watson principal or representative will be conducted on 9/17/03 at 11:00 am.

Criterion 3.d.1: Implementation of Traffic and Access Control

State EMA – TCPs GE4, SAE1 & SAE2

Demonstration was performed out of sequence on 6/10/03. **Complete**

Claiborne County – ACPs A1 & A3

Demonstration with local law enforcement and city road maintenance department was performed out of sequence on 6/10/03. **Complete**

Criterion 3.d.2: Implementation of Evacuation and Traffic and Access Control

State EMA – Demonstrated out of sequence on 6/10/03. **Complete**
Claiborne County – Demonstrated out of sequence on 6/10/03. **Complete**

4. **Field Measurement and Analysis**

Criterion 4.a.1: Plume Phase Field Measurements & Analysis Equipment

MSDH/DRH – (With RERTs and at EOF)

RERTs and DRH EOF personnel will pre-stage in Claiborne County @ 10:00 am. Staging area will be the Port Gibson area and the EOF respectively.

Criterion 4.a.2: Plume Phase Field Measurements & Analysis management

MSDH/DRH – (2 field teams)

Field Teams will be located in Claiborne County; the different locations will be announced.

Criterion 4.a.3: Plume Phase Field Measurements & Analysis Procedures

MSDH/DRH – (2 field teams)

Field Teams will be located in Claiborne County; the different locations will be announced.

5. **Emergency Notification & Public Information**

Criterion 5.a.1: Activation of Prompt Alert and Notification

State EMA
Claiborne County

Demonstration will consist of simulated siren activation. EAS messages will be developed at the SEOC and disseminated to risk county and EAS stations. There will be no broadcast of message by EAS stations. Actual message will be given to federal evaluator.

Criterion 5.a.3: Activation of Prompt Alert & Notification Backup Alert/Notification

Claiborne County

Demonstration will consist of evaluator interviews with the Claiborne County EOC Personnel and review of applicable Back-up Alert/Notification Plans. Interviews will be conducted during the exercise..

Criterion 5.b.1: Emergency Info and Instructions for the Public and Media

State EMA
Claiborne County

MEMA PIO will pre-stage in Claiborne County @ 9:30 am at the ENMC.

Emergency Information – Rumor Control

State EMA @ SEOC
Claiborne County @ PGCC EOC

Note that utility rumor control activities at ENMC are a utility operation addressing onsite plant issues. Current State/local news releases are used to address offsite questions that the utility rumor control may receive. The utility spokesperson will direct those State/local offsite questions which are unable to be answered from state/local news releases to the responsible party within the ENMC, i.e., MEMA PIO, Claiborne County PIO. The correct response will be routed back to the utility area for response and/or will be disseminated via news release by the responding party. The correct response for offsite questions is the responsibility of the State and local organizations.

6. Support Operations/Facilities

Criterion 6.a.1: Monitoring and Decon of Evacuees and EWs and Registration of Evacuees

Claiborne County – Pattison Fire Station (Pattison, MS)

This location will be fully operational to respond to contaminated emergency workers reporting for monitoring and decon. The use of expendable supplies will be simulated. Only one emergency worker monitor will be fully dressed out. EW Decon station supplies will be available for evaluator inspection upon request. Decontamination of one EW will be simulated – no water will actually be used.

Warren County – (Demonstrated out of sequence on 6/12/03) **Complete**
Copiah County – (Demonstration out of sequence @ 6:30 pm on 9/16/03)

The use of some expendable supplies will be simulated, i.e., floor covering, multiple layers of protective clothing (rubber gloves, booties, etc.) and barricade tape. Evaluators will be advised of simulated items. All resources will be available for evaluator viewing upon request. Two cars with six people will be monitored. Two people will be contaminated and decontaminated (1 female/1 male). The use of shower facilities will be simulated. Vehicles will be parked in a secure area for monitoring and decontamination, as per procedures. Only one emergency worker will be fully dressed out to demonstrate protective clothing. (Affected County is responsible for supplying people and vehicles for exercise play.)

Criterion 6.b.1: Monitoring and Decon of Emergency Worker Equipment

Claiborne County – Pattison Fire Station (Pattison, MS)

This location will be fully operational to respond to contaminated emergency workers reporting for monitoring and decon. The use of expendable supplies will be simulated.

Only one emergency worker monitor will be fully dressed out. EW Decon station supplies will be available for evaluator inspection upon request. Decontamination of one EW will be simulated – no water will actually be used. Decontamination of the vehicle will be demonstrated by actually using water and setting up an EW Monitoring and Decontamination station.

Criterion 6.c.1.: Temporary Care of Evacuees

Warren County – (Demonstrated out of sequence on 6/12/03) **Complete**
Copiah County – (Demonstration out of sequence @ 7:00 pm on 9/16/03)

Demonstration will consist of registering those individuals that pass through the Reception Center by completing Red Cross Shelter Registration Forms. Six Evacuees will be registered. All remaining shelter facility capabilities will be simulated. Listing of shelter staff and resources will be available upon request. Any remaining exercise information will be provided during shelter managers interviews. Walk through of shelter facility building will be provided if needed, using a diagram showing the location of all essential ARC functions.

Criterion 6.d.1: Transport and Treatment of Contaminated Injured Individuals

Demonstrated out of sequence during MS-1 Drill on 6/12/03. **Complete**

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events (exercise scenario) which was used as the basic for involving emergency response actions by OROs in the GGNS exercise on September 17, 2003. This exercise scenario was submitted by the State of Mississippi and approved by FEMA Region IV.

7.0 EXERCISE SCENARIO

INITIAL CONDITIONS

The plant is operating at 100% power 12 months into the current 18 month operating cycle. The weather is cool with generally overcast skies and moderate 10 to 20 mph winds.

A Div. II workweek is in progress.

CRD Pump 'B' is tagged out for PM's. Water was discovered in the last oil sample and mechanical maintenance is leak checking the oil cooler and replacing the oil.

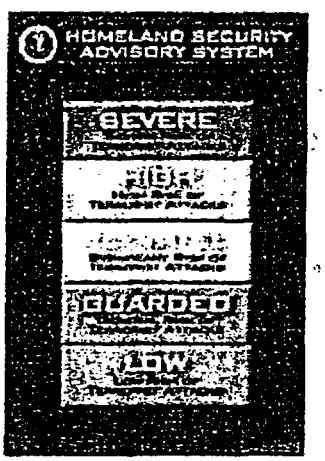
A tag out was hung on mid night shift to allow I&C to work in the back of panel P870 section 7A. The tag out inops several sections of annunicators on the P870, P807, P845, P844, P680 and P854 panels. Work should be complete and the tag out should be cleared by 0930 today. Compensatory Action Plan is in place.

Maintenance on "D" Demin is in progress. Limit switches on 1N22F055D are being returned to service after replacement.

Turbine Building rollup door is open. Radwaste Building rollup door is open. Auxiliary Building rollup door is shut.

Current Homeland Security Advisory Threat Level is: Yellow (Significant Risk of Terrorist Attacks)

- Severe = Red
- High = Orange
- Elevated = Yellow
- Guarded = Blue
- Low = Green



NARRATIVE SUMMARY

The DRILL begins at approximately 0800.

At 0805 unidentified leakage at approximately 8 gpm causes alarm 1H13P60122AF1 "Drywell Sump Discharge Rate High" to initiate. Leakage is due to a crack in the "B" feedwater line in the Drywell. Leakage is from the downstream weld on the valve body of N21F011B. Drywell leakage will be slowly increasing until LOCA occurs.

0805-0820 an **UNUSUAL EVENT** should be declared on EAL 2.1, "Exceeding Primary Coolant System Leak Rate >5 gpm in Modes 1, 2, or 3". The Shift Manager should turn over the control and command function to the Shift Supervisor and announce that he is the Emergency Director.

At 0915 the "A" APRM will fail upscale causing a rod block and a reactor ½ scram. The annunicators for control room panels P680, P601 and P870 will not be operable. The operators should notice the upscale APRM, absence of the associated alarms, the flashing power loss alarms (no audible alarm), and respond to the reactor ½ scram condition.

The control room should investigate the annunciator problem and determine that a complete loss of annunciators on the P680, P870 and P601 panels has occurred.

0915-0930 an **ALERT** should be declared on EAL 17.2, "Loss Of All Annunciators".

By approximately 1000 to 1015 (45 minutes after Alert declared) the TSC, EOF, and the OSC must be manned and control of the emergency transferred to the TSC or the EOF.

When calculating the actual amount of time taken for the TSC to become operational, consideration should be given to the fact that an average of 6 minutes is required for the Emergency Director to travel from the Admin Building to the Simulator and back to the Admin Building. This does not include turnover time. Under actual emergency conditions, the Emergency Director would travel directly from the admin building to the TSC and not detour to the Simulator. Therefore, during drills or exercises, 6 minutes should be subtracted from the total time taken for the TSC to declare itself operational.

At 1020, the problem with the control room annunicators is corrected and the annunicators are returned to service.

At 1025 a malfunction in the condensate pump min flow circuit causes a trip of all of the running condensate pumps, condensate booster pumps and reactor feed pumps. "P171 Panel Trouble" alarm comes in on the P680 panel. All six of the min flow indicating lights come on and stay on until the flow card is replaced. Condensate can not be restored until the card is replaced.

When the reactor scrams, the "B" feedwater line ruptures in the Drywell. Rupture is such that HPCS injection can maintain reactor level greater than –167". Condensate/Feedwater injection through the 'B' feedwater line and RCIC should be secured.

At 1030 Div II Bus 16AB trips and lockouts when a fault occurs in breaker 152-1606, RHR 'B' pump supply breaker. The fault occurs due to the misalignment of the breaker stabs to the bus bar connection. Damage to the bus bars has occurred and the 16 Bus is not recoverable..

The TSC will lose power to the hallway lights, one half of the TSC work area lights, the Communicator cubicle lights, Communicator computer, wireless PA system, Engineering Intercom, Engineering computer, and the HP instruments in the supply cabinet.

Inverter 1Y92 will supply power to the Dose Calculator Computer, the radio, SPDS computer, PDS Computer located on the cabinet in the Engineering Area, and the TSC communication system. Inverter 1Y92 (supplies power to TSC loads) will lose its alternate power supply and will be carried on the 11DL battery bank. This DC supply should last approximately 4 hours. Both battery chargers for 11DL battery will be lost due to being fed from Div II AC power supplies.

HPCS, CRD A, and SLC A are the only operable high pressure injection systems. LPCS and RHR 'A' are available for injection if reactor depressurization occurs. Level is maintained greater than –167".

At approximately 1037-1038, or when the MSIV's close on loss of instrument air, a steam line break occurs on the "D" Main steam line in the Auxiliary Building Steam Tunnel, upstream of the B21-F028D. The inboard MSIV B21-F022D fails to close completely and the leak can not be isolated. Hi Main Steam Tunnel temperature and Hi Main Steam Tunnel Delta T alarms occur. Fire Alarm Zones FZ0243 and FZ0244 come in, indicating that the Aux Steam Tunnel blowout panels have lifted. The shift should verify that the MSIV's, MSL drain valves and RWCU Systems isolate as required.

At 1037-1052 a **SITE AREA EMERGENCY** should be declared on EAL 4.3, "Main Steam Line Break Outside Of Containment Which Can Not Be Isolated". Actual time will depend on the time of the MSIV's drifting shut on loss of air.

A **SITE EVACUATION** should be ordered and personnel accountability initiated.

Personnel accountability should be complete before about 1122 (within 30 minutes from declaration of SAE).

Reactor water level should be maintained above TAF utilizing HPCS.

At 1110 ESF Bus 15AA trips and a bus lock out occurs due to a bus ground overcurrent. An insulator failure resulted in a bus ground causing the lockout. The insulator and a small section of bus must be replaced before 15AA can be restored.

Announcement should be made that personnel accountability is complete and personnel may enter the protected area.

At 1115 the HPCS pump trips due to a fault in the motor windings and the OVERCURRENT TRIP CIRCUIT is actuated for breaker 152-1702. HPCS system is not recoverable.

After the HPCS pump trips, a **GENERAL EMERGENCY** may be declared based on discretionary EAL 18.3, "Conditions Exist That Make The Release Of Large Amounts Of Radioactivity In A Short Time Period Possible". No feed sources will be available to maintain reactor water level above -167".

1125 reactor water level drops to below -167" and cannot be recovered. Reactor water level continues to go down.

1125-1140 **GENERAL EMERGENCY** should be declared on EAL 3.4 "(Loss Of 2 Out Of 3 Fission Product Barriers With A Potential Loss Of The Third" when reactor water level goes below -167" (if a discretionary GE was not previously declared).

Initial wind direction will be into Sectors Q, R and A. These sectors include the EOF and OSC. Activation of the Backup EOF and OSC will not be demonstrated. Radiological conditions are provided that account for EOF shielding factors. The plume will be simulated to rise over the OSC and touchdown outside the Protected Area due to building wake and turbulence affects. If the participants discuss relocating to the backup facilities, Controllers will interject that the backup facilities will not be activated.

1135 Reactor water level goes below -192" and can not be restored.

Emergency depressurization is required.

Severe Accident Procedures are entered.

Radiological Assessment changes to Core Damage Mix.

1140 damage to the fuel cladding begins, indications of an offsite release are seen.

1145 overheating core damage begins and offsite releases increase dramatically.

In the event the Radiological Assessment Staff calculates conditions that would necessitate issuing PARs outside of the 10 mile EPZ, PAR development and PAR notification opportunities for these conditions will not contribute to the NRC Performance Indicators.

Installation of attachment 26 for fire water injection should be requested and lineup commenced

1230-1300 the wind shifts from 150 degrees (sectors Q,R,A) to 225 degrees (sectors B,C,D).

At 1300 the bus bar for bus 15AA is replaced, bus 15AA red tag can be cleared and power can be restored to the bus.

At 1310, the flow card in the condensate pump min flow circuit is replaced and condensate pumps are available for injection.

At 1320 the red tag for bus 15AA is cleared. Div I ECCS systems are available for injection.

At 1325 the injection systems which have been restored will begin to raise reactor water level and level will come on scale.

Reactor pressure will gradually fall to zero psig and the release will cease at 1345.

By 1345 facilities should be into discussions of a re-entry and recovery plan.

At 1400 the drill will be terminated.

0800	00:00	Drill begins.
0805	00:05	H13-P680-8-A1-D7 "Drywell Floor Drain Sump Temperature HI" due to unidentified leakage >5 gpm.
0805-0820	00:05-00:20	**UNUSUAL EVENT** on EAL 2.1, Exceeding Primary Coolant System Leak Rate >5 gpm in Modes 1, 2, or 3. PI Opportunity. Record time of alarm, time of declaration, and time of notification.
0915	01:15	"A" APRM fails upscale, alarms do not annunicate. Loss of all annunicators on 1H13-P680,P870, and P601. Breakers 72-11E68 and 72-11E74 trip.
0915-0930	01:15-01:30	**ALERT** on EAL 17.2, Loss Of All Annunciators. PI Opportunity.. Record time APRM fails upscale, time of declaration, and time of notification.
1000	02:00	72-11E68 and72-11E74 reset and closed, annunication partially restored.
1000-1015	02:00-02:15	TSC,OSC,EOF operational.
1020	02:20	72-11D51 tag cleared, breaker closed, annunication restored.
1025	02:25	Condensate pump min flow failure. Reactor scram. Turbine trip. Feedwater line break in D/W.
1030	02:30	16AB Bus lockout due to bus bar damage from 152-1606 breaker fault.

		The TSC will lose power to the hallway lights, the computer terminal on the engineers' desk, and the HP instruments in the supply cabinet. One half of the lights in the TSC work area will be lost in addition to the hallway lights. Inverter 1Y92 will supply power to the Dose Calculator Computer, the radio, PDS Computer located on the cabinet in the Engineering Area, and the TSC communication system. Inverter 1Y92 (supplies power to TSC loads) will lose its alternate power supply and will be carried on the 11DL battery bank. This DC supply should last approximately 4 hours. Both battery chargers for 11DL battery will be lost due to being feed from Div II AC power supplies.
1037-1038	02:37-02:38	'D' main steam line break in Aux Bldg Steam Tunnel. B21-F022D fails to isolate. Hi Main Steam Tunnel temperature and Hi Main Steam Tunnel Delta T alarms. Fire Alarm Zones FZ0243 and FZ0244 on Aux Steam Tunnel Blowout Shafts.
1037-1052	02:37-02:52	**SITE AREA EMERGENCY** on EAL 4.3 "Main steam line break outside of containment which can not be isolated". SITE EVACUATION and personnel accountability should be ordered. PI Opportunity. Record time of break, time of declaration, and time of notification.
1107-1122	03:07-03:22	Personnel accountability complete (30 min. from declaration of SAE). Announce personnel accountability is complete.
1110	03:10	15AA bus lockout.

1115	03:15	HPCS pump trip, no high pressure systems available for reactor water makeup. After the HPCS pump trips, a **GENERAL EMERGENCY** may be declared based on discretionary EAL 18.3 "Conditions exist that make the release of large amounts of radioactivity in a short time period possible". If Discretionary GE declared, record indications available to the participant that would support the determination of GE. PI Opportunity. Record time of HPCS pump trip, time of declaration, vessel level and trend, and notification time. Verify Steam Cycle Mix used for Dose Projections. Verify PARs include appropriate sectors and distances for the Dose Projection calculations.
1125	03:25	Reactor water level drops below –167".
1125-1140	03:25-03:40	**GENERAL EMERGENCY** declared due to "Loss of 2 of 3 fission product barriers with a potential loss of the third barrier". PI Opportunity. Record time of HPCS pump trip, time of declaration, vessel level and trend, and notification time. Verify Steam Cycle Mix used for Dose Projections. Verify PARs include appropriate sectors and distances for the Dose Projection calculations.
1135	03:35	Reactor water level drops to below –192". Emergency Depressurization required. Severe Accident Procedures entered. Radiological Assessment changes to Core Damage Mix.

1140	03:40	Clad damage begins.

Offsite release begins.

1145	03:45	Overheating core damage begins. Offsite release rates increase dramatically. Activation of the Backup EOF and OSC will not be demonstrated. Initial wind direction will be into Sectors Q,R, and A. These sectors include the EOF and OSC. Activation of the Backup EOF and OSC will not be demonstrated. Radiological conditions are provided that account for EOF shielding factors. The plume will be simulated to rise over the OSC and touchdown outside the Protected Area due to building wake and turbulence affects. If the participants discuss relocating to the backup facilities, Controllers will interject that the backup facilities will not be activated.
1230-1300	04:30-05:00	Wind shifts from Sectors QRA to Sectors BCD. PI Opportunity. Record time that <u>each</u> new sector becomes affected. Record time that <u>each</u> new PAR developed (REM initialing ENF), and time of notification. Several opportunities may exist, depending on the speed of the shift and the timing of each new sector becoming affected.
1300	05:00	15AA bus bar repaired, red tag being cleared.
1310	05:10	Flow card for condensate min flow circuit replaced, condensate available for injection.
1320	05:20	Red tag on 15AA cleared, 15AA energized, Div I ECCS available for injection.
1325	05:25	Reactor water level increasing, level on scale.

1345	05:45	Reactor pressure reduced to zero psig.
		Release terminated.
1345	05:45	Re-entry and recovery plan development begins.
1400	06:00	Drill terminated.