AFTER ACTION REPORT
Grand Gulf Nuclear Station (GGNS)
REP Program Exercise

[Final]

November 1 & 2, 2011
Radiological Emergency Preparedness Program (REPP)

FEMA

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Table of Contents

Page

List of Appendices

Administrative Handling Instructions

This After Action Report (AAR) for the 2011 Grand Gulf Nuclear Station (GGNS) Radiological Emergency Preparedness, Plume and Ingestion Phase Emergency Planning Zone (EPZ) Exercise is considered a public document.

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Executive Summary

On November 1 & 2, 2011, the Department of Homeland Security, Federal Emergency Management Agency (FEMA) Region IV Radiological Emergency Preparedness (REP) Program staff evaluated a plume exposure pathway and an ingestion pathway exercise in the emergency and ingestion planning zones for the Grand Gulf Nuclear Station (GGNS). GGNS is located in Claiborne County, approximately 29 miles south of Vicksburg, Mississippi and is operated by Entergy Nuclear. The GGNS Emergency Planning Zone (EPZ) is divided into 16 Protective Action Areas designated 1 through 12. The 10 mile EPZ encompasses Claiborne County; with an EPZ population of approximately 9604 as reported in the 2010 U.S. Census Bureau data.

FEMA's overall objective of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency at GGNS. This exercise was conducted in accordance with FEMA's policies and guidance concerning the exercise of state and local radiological emergency response plans and procedures. The previous federally evaluated exercise at this site was conducted on September 9, 2009. The qualifying emergency preparedness exercise was conducted November 4-5, 1981.

The purpose of this report is to analyze exercise results, identify strengths to be maintained and built upon, identify potential areas for further improvement, and support development of corrective actions.

The objectives for the 2011 GGNS REP Exercise were as follows:

- **Objective 1:** Demonstrate the ability to provide emergency operations center (EOC) management including direction and control through the state and counties Emergency Operations Centers.

- **Objective 2:** Demonstrate the ability to provide protective action decision-making for state and county emergency workers and public through exercise play and discussions of plans and procedures.

- **Objective 3:** Demonstrate the ability to physically implement protective actions for state and county emergency workers and public through exercise demonstration.

- **Objective 4:** Demonstrate the ability to activate the Alert and Notification System/Emergency Alert System (ANS/EAS) through exercise play.

- **Objective 5:** Demonstrate the effectiveness of plans, policies and procedures in the Joint Information Center (JIC) for joint (public and private sector) emergency information communications.

- **Objective 6:** Demonstrate the ability to provide and implement protective action decision-making for State and County emergency workers and residents concerning Recovery, Reentry and Relocation of radiological affected areas.

These objectives encompass the REP Program evaluation area criteria. Except as noted below, the objectives were successfully demonstrated during this exercise. FEMA identified the following area requiring corrective action (ARCA) 028-11-2.b.1-A-01: 1.a.) Large differences between thyroid dose projections and calculated thyroid doses based on field monitoring team (FMT) air sampling results went unresolved; 1.b.) Large differences in dose projections from the State and utility went unresolved, resulting in potentially unnecessary evacuation beyond the EPZ. At no time were the differences in dose calculations questioned by the Radiological Dose Assessment Officer (RDAO) at the Emergency Operations Facility (EOF) or the Radiological Accident Assessment Officer (RAAO) at the State Emergency Operations Center (SEOC) during the data collection, analysis and the protective action recommendation (PAR) process.

FEMA will provide an Improvement Plan (IP) to the State of Mississippi that describes Strengths and Areas for Improvement observed during the exercise. The IP will be published under a separate cover and classified For Official Use Only (FOUO) in compliance with Homeland Security Exercise and Evaluation Program (HSEEP) standards.

Section 1: Exercise Overview

1.1 Exercise Details

Exercise Name
2011 Grand Gulf Nuclear Station REP Program Evaluated Plume and Ingestion Exercise

Type of Exercise
Full-Scale Ingestion Exercise

Exercise Out of Sequence Date(s)
July 25-29, 2011
September 6-9, 2011
October 3-4, 2011

Exercise Date
November 1 & 2, 2011

Program
FEMA Radiological Emergency Preparedness Program

Mission
Response

Capabilities
- Emergency Operations Center Management
- Emergency Public Information and Warning
- Emergency Public Safety and Security Response
- Hazardous Materials Response and Decontamination
- Mass Care
- Triage and Pre-Hospital Treatment
- Food and Agriculture Safety and Defense

Scenario Type
Radiological Emergency Preparedness, Full Participation Plume and Ingestion Phase EPZ

1.2 Participating Organizations

The following agencies, organizations and units of government participated in the 2011 GGNS REP Exercise.

State of Mississippi
Mississippi Emergency Management Agency
Mississippi State Department of Health/Department of Radiological Health
Mississippi Highway Patrol
Mississippi Fusion Center
Mississippi Extension Service
Mississippi Department of Human Services
Mississippi Department of Transportation
Risk Jurisdictions
Claiborne County, Mississippi
• Emergency Management Agency • Claiborne County Fire Services • Claiborne County Sheriff's Office • Claiborne County School District
Host Jurisdictions
Adams County, Mississippi
• Emergency Management Agency
Copiah County, Mississippi
• Emergency Management Agency
Hinds County, Mississippi
• Emergency Management Agency
Warren County, Mississippi
• Emergency Management Agency
Non-Governmental Organizations
Salvation Army
American Red Cross
Federal Organizations
Nuclear Regulatory Commission Federal Coordinating Officer, Federal Emergency Management Agency, Region IV Environmental Protection Agency Federal Drug Administration Center for Disease Control Federal Radiological Monitoring and Assessment Center RAP Team RII

1.3 Site Assistance Visits

A Site Assistance Visit (SAV) was conducted on the Mississippi State Department of Health, Department of Radiological Health (MSDH/DRH) on September 12, 2011 by the FEMA Region IV Site Specialist.

The SAV consisted of: providing basic information on the development of a Laboratory Radiological Training Tracking document; and a 100% inventory of potassium iodide (KI) within the state of Mississippi.

The SAV began by inventorying Laboratory Radiological Training and Environmental Monitoring and Emergency Response Sign-In rosters and EW KI questionnaires for EW's assigned to the DRH. No discrepancies were noted.

Development of a quick reference tracking document was discussed with the Laboratory Director. FEMA RIV recommended using Microsoft Excel and tracking each EW by name, ID number, type of training conducted and dates training are conducted.

The remainder to the SAV was dedicated to the KI inventory. The DRH uses Thryo-Safe KI tablets in dosages 65mg for children (expire 05/2013) and 130mg for adults (expire 09/2014). The expiration dates were current and no extension letters are required. The storage locations visited were the DRH facility, Hinds County Department of Health, Adams County Department of Health, Warren County Department of Health, Copiah County Department of Health, Claiborne County Department of Health and The Port Gibson Office of the Natchez Trace Parkway. Each KI location was visited and the KI was visually and physically inventoried. Each location used a secured room or secure storage container with access limited to designated Health Department personnel. No discrepancies were noted with KI or KI storage locations/containers.

The chart below details the Adult and Child dosages by inventory per location:

Location	Child (20/Box)	Total Child Pills	Adult (14/Strips)	Total Adult Pills
DRH Lab	N/A	N/A	102	1428
DRH field team kit 1	N/A	N/A	100	1400
DRH field team kit 2	N/A	N/A	100	1400
Hinds	50	1000	120	1680
Adams	75	1500	500	7000
Copiah	75	1500	500	7000
Claiborne EOC	N/A	N/A	300	4200
Claiborne Health Department	N/A	N/A	300	4200
Port Gibson Office of the Natchez Trace Parkway	N/A	N/A	4	56
Warren	50	1000	216	3024

MEMA also received SAV's on training courses and equipment. The Training Courses were conducted between February 2011 and July 2011 in each of the host counties. The course curriculums were excellently delivered to the county participants; no discrepancies were noted. The specific courses and dates will be validated against the 2011 GGNS Annual Letter of Certification once received in January 2012.

Training Courses monitored were as follows:

REP Fundamentals Course conducted in Hinds County
Reception Center and Congregate Care Training conducted in Adams County
Reception Center and Congregate Care Training conducted in Warren County
Reception Center and Congregate Care Training conducted in Copiah County

The equipment SAV was conducted on September 15, 2011 at the MEMA Radiological Equipment Storage Facility in Pearl MS. The type of equipment verified was: Low Range Self Reading Dosimeters, Ludlum 14-C Survey Meters, Ludlum E-520 Survey Meters, and Ludlum CDV 700 Survey Meters. The dosimeters and survey meters were in good repair with current leak test and calibration dates. No discrepancies were noted.

Section 2: Exercise Design Summary

2.1 Exercise Purpose and Design

DHS/FEMA administers the REP Program pursuant to the regulations found in Title 44 Code of Federal Regulation (CFR) parts 350, 351 and 352. 44 CFR 350 codifies 16 planning standards that form the basis for radiological emergency response planning for licensee, State, tribal and local governments impacted by the EPZs established for each nuclear power plant site in the United States. 44 CFR 350 sets forth the mechanisms for the formal review and approval of State, Tribal and local government radiological emergency response plans (RERP) and procedures by DHS/FEMA. One of the REP program cornerstones established by these regulations is the biennial exercise of offsite response capabilities. During these exercises State, Tribal and local governments demonstrate their abilities to implement their plans and procedures to protect the health and safety of the public in the event of a radiological emergency at the nuclear plant.

The results of this exercise together with review of the RERPs and procedures and verification of the periodic requirements set forth in NUREG-0654/FEMA-REP-1 through the Annual Letter of Certification (ALC) and staff assistance visit enables FEMA to provide a statement with the transmission of this final AAR to the Nuclear Regulatory Commission (NRC) that State, Tribal and local plans and preparedness are (1) adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency; and (2) capable of being implemented.

Formal submission of the RERPs for the Grand Gulf Nuclear Station to FEMA Region IV by the State of Mississippi and involved local jurisdictions occurred on May 22, 1981. Formal approval of the RERP was granted by FEMA on June 29, 1983, under 44 CFR 350.

A REP exercise was evaluated on November 1 & 2, 2011, and included evaluations of the out-of-sequence activities held during the week of July 25-29; September 6-9; and October 3-4, 2011 to include a Medical Services Drill (MSD) on July 28, 2011.

2.2 FEMA Exercise (HSEEP) Objectives and Capabilities

Capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items that were derived from the Target Capabilities List (TCL). The capabilities listed below form the foundation for the organization of all FEMA Region IV REP Program objectives and observations in this exercise.

- **Emergency Operations Center Management:** Is the capability to provide multi-agency coordination (MAC) for incident management by activating and operating an EOC for a pre-planned or no-notice event. EOC management

includes EOC activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts among neighboring governments at each level and among local, regional, state, and federal EOCs; coordination public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities.

- **Emergency Public Information and Warning**: Is the capability that includes public information, alert/warning and notification. It involves developing, coordinating, and disseminating information to the public, coordinating officials, and incident management and responders across all jurisdictions and disciplines effectively under all hazard conditions.

- **Emergency Public Safety and Security Response:** Is the capability to reduce the impact and consequences of an incident or major event by securing the affected area, including crime/incident scene preservation issues as appropriate, safely diverting the public from hazards, providing security support to other response operations and properties, and sustaining operations from response through recovery. Public Safety and Security Response requires coordination among officials from law enforcement (LE), fire and emergency medical services (EMS).

- **Hazardous Materials Response and Decontamination:** Is the capability to assess and manage the consequences of a hazardous materials release, either accidental or as part of a terrorist attack. It includes testing and identifying all likely hazardous substances onsite; ensuring that responders have protective clothing and equipment; conducting rescue operations to remove affected victims from the hazardous environment; conducting geographical survey searches of suspected sources or contamination spreads and establishing isolation perimeters; mitigating the effects of hazardous materials, decontaminating on-site victims, responders, and equipment; coordinating off-site decontamination with relevant agencies, and notifying environmental, health, and law enforcement agencies having jurisdiction for the incident to begin implementation of their standard evidence collection and investigation procedures.

- **Triage and Pre-Hospital Treatment:** Is the capability to appropriately dispatch EMS resources; to provide feasible, suitable, and medically acceptable pre-hospital triage and treatment of patients; to provide transport as well as medical care en-route to an appropriate receiving facility; and to track patients to a treatment facility.

- **Mass Care:** Is the capability to provide immediate shelter, feeding centers, basic first aid, bulk distribution of needed items, and related services to persons affected by a large-scale incident, including special needs populations. Special needs populations include individuals with physical or mental disabilities who require medical attention or personal care beyond basic first aid. Other special-needs

populations include non-English speaking populations that may need to have information presented in other languages. The mass care capability also provides for pet care/handling through local government and appropriate animal-related organizations. Mass care is usually performed by nongovernmental organizations (NGO), such as the American Red Cross (ARC), or by local government-sponsored volunteer efforts, such as Citizen Corps. Special-needs populations are generally the responsibility of local government, with medical needs addressed by the medical community and/or its alternate care facilities. State and Federal entities also play a role in public and environmental health by ensuring safe conditions, safe food, potable water, sanitation, clean air, etc.

- **Food and Agriculture Safety and Defense** is the capability to prevent, protect against, respond to and recover from chemical, biological and radiological contaminants, and other hazards that affect the safety of food and agricultural products. This includes the timely eradication of outbreaks of crop diseases/pests, assessments of the integrity of the food producing industry, the removal and disposal of potentially compromised materials from the U.S. food supply, and decontamination of affected food manufacturing facilities or retail points of purchase or service. This also includes appropriate laboratory surveillance to detect human foodborne illness or food product contamination. It is accomplished concurrent to protecting public health and maintaining domestic and international confidence in the U.S. commercial food supply. Additionally, the public is provided with accurate and timely notification and instructions related to an event and appropriate steps to follow with regard to disposal of affected food or agricultural products and appropriate decontamination procedures.

Additionally, each capability is linked to several corresponding activities and tasks to provide additional detail. Based upon the identified exercise objectives, the following capabilities and associated activities are:

Objective 1: Capability: EOC Management

Objective 2: Capability: EOC Management
Capability: Emergency Public Information and Warning

Objective 3: Capability: EOC Management
Capability: Emergency Public Safety and Security Response
Capability: Hazardous Materials Response and Decontamination
Capability: Mass Care (Sheltering, Feeding, Related Services)
Capability: Triage and Pre-Hospital Treatment

Objective 4: Capability: Emergency Public Information and Warning

Objective 5: Capability: Emergency Public Information and Warning

Objective 6: Capability: EOC Management

Capability: Emergency Public Information and Warning
Capability: Hazardous Materials Response and Decontamination
Capability: Food and Agriculture Safety and Defense

Section 3: Analysis of Capabilities

3.1 Exercise Evaluation and Results

This section contains the results and findings of the evaluation of all jurisdictions and functional entities that participated in the November 1 & 2, 2011 plume and ingestion phase exercise and Out-of-Sequence (OOS) activities. Exercise criteria are listed by number and the demonstration status of those criteria are indicated by the use of the following terms:

- Met (No Deficiency or ARCA(s) assessed and no unresolved ARCA(s) from prior exercise)
- ARCA(s) assessed or unresolved ARCA(s) from previous exercises
- Deficiency assessed
- Plan Issues
- Not Demonstrated

3.2 Plume Evaluation Capability Summaries

3.2.1 State of Mississippi

State Emergency Operations Center Management:

Mississippi Emergency Management Agency (MEMA) personnel and SEOC staff successfully demonstrated the capability to provide multi-agency coordination for incident management by activating and operating an EOC for a pre-planned or no-notice event. This capability included EOC activation, notification, staffing; management, direction, control, and coordination of response activities; coordination of efforts among neighboring governments at each level and among local, regional, and State EOCs and Federal Agencies; coordination of public information and warning; and maintenance of the information and communication necessary for coordinating response activities.

The SEOC was successfully activated in a timely manner upon notification of Alert Emergency Classification Level (ECL) from the GGNS. The State Warning Point (WP) correctly recorded the information onto an emergency notification form and distributed to MEMA management. The WP personnel notified MEMA personnel without delay until 100% notification of MEMA response staff was accomplished. This process was accomplished in 12 minutes.

The primary and alternate means of communication both functioned as intended. Additional means of communication were operational and observed being utilized during the exercise. Redundant communication systems insured the SEOC had the ability to communicate with other agencies.

The Director of Response and the MEMA Director demonstrated good direction and control in coordinating response and Protective Action Decisions (PAD) among

neighboring governments at the local, regional, State and Federal levels. There was excellent coordination and teamwork while developing extended evacuation areas. The Director of Response and MEMA Director insured they received input from the Public Information Officer (PIO) and the RAAO in making all decisions.

The Director of Response's briefings were frequent enough to keep staff up to date and remind them to continually look ahead and be proactive in their planning. All branches used WebEOC to post actions and important information.

Emergency Workers (EW) were dispatched from the SEOC based on approved mission assignment requests from the risk and host counties submitted through WebEOC. The Radiation Exposure Control Officer (RECO) could verify the mission assignments prior to issuing dosimetry and potassium iodide (KI). The MEMA Director approved mission assignments. EWs would be dispatched based on the urgency specified by the requesting agency.

The RECO would issue dosimetry, KI tablets, associated tracking forms, and ensure Self-Reading Dosimeters (SRD) was zeroed during issue. The RECO also would provide an EW briefing to EWs. A turn-back value of one Roentgen (1R) would require the EW to leave the risk area and proceed to a designated decontamination location.

For this capability the following REP criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 3.a.1, 3.b.1 and 3.c.1

Emergency Public Information and Warning:

The SEOC PIO functions were conducted successfully and in a timely manner. The PIOs were consistent: in developing and tracking messages; maintaining coordination and contact with the SEOC PIO in the Emergency News Media Center (ENMC); researching informational and media related taskings; and seeking and obtaining message approvals in a timely manner. The SEOC PIOs are well trained, knowledgeable of plans and procedures and performed their duties in an excellent fashion.

For this capability the following REP criteria were met: 1.d.1, 1.e.1, 5.a.1 and 5.b.1

Hazardous Materials Response and Decontamination:

This capability was successfully demonstrated by Mississippi State Department of Health (MSDH), Division of Radiological Health (DRH) personnel at the SEOC. The DRH RAAO and his assistant reported to the SEOC following notification from the WP that the SEOC was being activated due to an Alert ECL at GGNS. The RAAO's work area had sufficient equipment and supplies to support emergency operations and he communicated frequently with other DRH personnel stationed at the EOF and JIC via cellular telephone, commercial telephone, and fax. In addition, he had access to other resources in the SEOC if necessary.

The RAAO provided general direction for the DRH dose assessment effort. Using information gathered from that effort, as well as information from the utility, he made reasoned PARs to the SEOC leadership and participated in decision-making discussions. As thyroid dose projections increased, he coordinated with the MSDH representative in Emergency Support Function-8 (ESF) to obtain authorization from the State Health Officer's (SHO) designee to issue KI to emergency workers and later to the general public in the affected areas.

The MSDH/DRH staff assigned to the GGNS EOF successfully demonstrated the capability to provide timely dose assessment calculations, FMT results, and other pertinent information to the RAAO at the SEOC for the development of PARs. The staff included the Emergency Operation Facility Captain (EOF Captain), RDAO, Radiological Emergency Response Team Coordinator (RERTC), and a Logistics Assistant.

The MSDH/DRH EOF staff arrived at the EOF at 1019 following real-time activation from their offices in Jackson, MS. The staff promptly acquired the current GGNS plant status and situation, performed the required position activation steps, and were operational within a matter of minutes.

The RDAO's responsibilities included performing dose calculations using Radiological Assessment for Consequence Analysis (RASCAL) version 4.1 based upon radioactive effluent release and meteorological data, and Mississippi FMT results. The RERTC served as the FMT Coordinator for Mississippi's two field monitoring teams, positioning them downwind to characterize any radiological release. The Logistics Assistant recorded pertinent field monitoring team results on the EOF's FMT status board. The EOF Captain collected and analyzed the data from the RDAO, the RERTC and plant status, and promptly forwarded the information to the RAAO at the SEOC. The RAAO at the SEOC was responsible for formulation of PARs and presentation of the PARs to the MEMA Director and the Claiborne County Civil Defense Director for a coordinated PAD.

The FMT activities were efficiently and appropriately directed by the RERTC. Radiological readings and air sample analysis from FMTs were promptly processed by the RERTC and forwarded to the RDAO. Dosimeter exposures were requested at 30 minute intervals from the FMTs and recorded by the RERTC. At 1229, the RERTC instructed the FMTs to administer KI per the SHO's recommendation.

The EOF Captain was in charge of the MSDH/DRH staff and ensured that all necessary environmental monitoring and technical assessments were performed at the EOF and that appropriate information was forwarded to the RAAO at the SEOC until exercise termination at 1334.

This capability was demonstrated by the DRH FMTs during the GGNS Emergency Exercise conducted on November 1, 2011.

The FMTs were pre-positioned at the DRH facility located at 3150 Lawson Street, Jackson, MS. The FMT equipment and supplies were adequate to support radiological monitoring and emergency worker functions. Three communications systems were available and verified operational prior to deployment. The FMTs received an operational briefing by the RERTC at DRH. Field team instruments were within calibration and were properly checked for operation. Field team instrumentation was sufficient to perform airborne particulate and radioiodine sampling. Ambient direct radiation measurements were also performed. The FMTs performed hazard assessment by locating the edges of the plume, as directed by the RERTC, and identified and quantified the simulated release. The FMTs demonstrated appropriate surveying, sampling, and counting techniques to properly track the plume. Ambient readings and personnel exposures were routinely communicated to the RERTC. Airborne radioactivity was assessed using an air sampler fitted with a particulate filter and a charcoal cartridge. FMT members were knowledgeable about the purpose of KI and the correct dosages prescribed. KI supplies, instructions, and documentation were satisfactorily demonstrated. Emergency worker exposure control was satisfactorily demonstrated with appropriate dosimetry use and proper documentation.

Area Requiring Corrective Actions OR Area for Improvement 028-11-2.b.1-A-01

The majority of the Hazardous Materials Response and Decontamination capability was successfully demonstrated by MSDH/DRH personnel located at the EOF. The activity, Hazard Assessment and Risk Evaluation (a sub-capability) was not successfully accomplished. The RDAO projected downwind doses and compared RASCAL projections against Environmental Protection Agency (EPA) Protective Action Guidelines (PAGs). The RDAO compared RASCAL projections to GGNS DoseCalc projections for independent validation. Early projection comparisons between RASCAL and DoseCalc following the 0947 release were within a factor of ten of each other. The 1232 GGNS DoseCalc projection, however, varied from the MSDH/DRH RASCAL projection by a factor of 15 at the 10-mile boundary of the Emergency Planning Zone (EPZ). The GGNS DoseCalc Thyroid Committed Dose Equivalent (CDE) projection at ten miles was 5.4 rem and the exceeded EPA PAGs of 5 rem thyroid CDE. The licensee PAR called for an evacuation out to 15 miles in Sectors G, H, and J. The RASCAL projection, however, exceeded thyroid CDE PAGs beyond two miles, but less than three miles and was only 0.35 rem at ten miles. Dose projection differences exceeding a factor of ten were not resolved with the utility. The airborne radioiodine calculation for location M2.5 was made by FMT 1 at 1217. The RDAO input the concentration of 9.82E-5 microcuries per cubic centimeter into the RASCAL FM-Dose module. The resulting calculated CDE thyroid dose at that location for a 2 hour exposure duration was 254 rem. The calculated dose from the air sample was not compared to the RASCAL projected dose based on release rates, which at that time projected a dose of only 2-5 rem. The difference between the measured concentration and projected concentration went unresolved. The RASCAL dose projections were transmitted to the RAAO at the SEOC. The RAAO recommended evacuation of the public beyond ten miles in accordance with GGNS' PAR and the PAD of evacuation of the public out to 15

miles in Sectors G, H and J was made. By 1256, the release rates had dropped significantly enough that DoseCalc projections indicated a thyroid CDE of only 0.1 rem at 10 miles and the MSDH/DRH RASCAL projections exceeded thyroid CDE PAGs to less than 0.3 miles.

Reference:

1. Interim REP Program Manual, Evaluation Area 2, Protective Action Decision Making, sub-element 2.b.1
2. Activity 2, Task 2.2 Note whether differences in dose projections greater than a factor of ten were discussed with the licensee. If so, were the differences resolved and considered in the PAR?

Analysis: Comparisons of projected doses between the licensee's 1232 DoseCalc output and MSDH/DRH's 1244 RASCAL output were made, but the large differences between calculated doses went unresolved. The licensee's PARs were subsequently adopted as PADs by the SEOC and Claiborne County, requiring ad hoc protective actions beyond the 10-mile EPZ.

Recommendations:

1. Upon calculations being made between the licensee and the State with the results greater than a factor of 10, MSDH/DRH staff at the EOF should consult with licensee dose assessment staff to resolve the differences between projections.

For this capability the following REP criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2 and 4.a.1.

3.2.2 Joint Operations

3.2.2.1 Emergency Operations Facility (EOF)

Emergency Operations Center Management:

The MSDH/DRH staff assigned to the GGNS EOF successfully demonstrated the capability to provide timely dose assessment calculations, FMT results, and other pertinent information to the RAAO at the SEOC for the development of PARs. The staff included the EOF Captain, RDAO, RERTC, and a Logistics Assistant.

The MSDH/DRH EOF staff arrived at the EOF at 1019 following real-time activation from their offices in Jackson, MS. The staff promptly acquired the current GGNS plant status and situation, performed the required position activation steps, and were operational within a matter of minutes.

The EOF Captain was in charge of the MSDH/DRH staff and ensured that all necessary environmental monitoring and technical assessments were performed at the EOF and that appropriate information was forwarded to the RAAO at the SEOC until exercise termination at 1334.

For this capability the following REP criterion was met: 2.b.1

3.2.2.2 Field Monitoring Team (FMT) Management

Hazardous Materials Response and Decontamination:

The MSDH/DRH staff assigned to the GGNS EOF was composed of an EOF Captain, the RDAO, the RERTC and a Logistics Assistant.

The RDAO's responsibilities included performing dose calculations using RASCAL version 4.1 based upon radioactive effluent release and meteorological data, and Mississippi FMT results. The RERTC served as the FMT Coordinator for Mississippi's two field monitoring teams, positioning them downwind to characterize any radiological release. The Logistics Assistant recorded pertinent field monitoring team results on the EOF's FMT status board. The EOF Captain collected and analyzed the data from the RDAO, the RERTC and plant status, and promptly forwarded the information to the RAAO at the SEOC. The RAAO at the SEOC was responsible for formulation of PARs and presentation of the PARs to the MEMA Director and the Claiborne County Civil Defense Director for a coordinated PAD.

The FMT activities were efficiently and appropriately directed by the RERTC. Radiological readings and air sample analysis from FMTs were promptly processed by the RERTC and forwarded to the RDAO. Dosimeter exposures were requested at 30 minute intervals from the FMTs and recorded by the RERTC. At 1229, the RERTC instructed the FMTs to administer KI per the SHO's recommendation.

The EOF Captain was in charge of the MSDH/DRH staff and ensured that all necessary environmental monitoring and technical assessments were performed at the EOF and that appropriate information was forwarded to the RAAO at the SEOC until exercise termination at 1334.

For this capability the following REP criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2, 3.b.1 and 4.a.2.

3.2.2.3 Field Monitoring Team (FMT) Operations

Hazardous Materials Response and Decontamination:

This capability was demonstrated by the Mississippi DRH FTs during the GGNS Emergency Exercise conducted on November 1, 2011.

The FTs were pre-positioned at the DRH facility located at 3150 Lawson Street, Jackson, MS. The FMT equipment and supplies were adequate to support radiological monitoring and emergency worker functions. Three communications systems were available and verified operational prior to deployment. The FTs received an operational briefing by the RERTC at DRH. Field team instruments were within calibration and were properly checked for operation. Field team instrumentation was sufficient to perform airborne particulate and radioiodine sampling. Ambient direct radiation measurements were also performed. The FTs performed hazard assessment by locating the edges of the plume, as directed by the RERTC, and identified and quantified the simulated release. The FTs demonstrated appropriate surveying, sampling, and counting techniques to properly track the plume. Ambient readings and personnel exposures were routinely communicated to the RERTC. Airborne radioactivity was assessed using an air sampler fitted with a particulate filter and a charcoal cartridge. FMT members were knowledgeable about the purpose of KI and the correct dosages prescribed. KI supplies, instructions, and documentation were satisfactorily demonstrated. Emergency worker exposure control was satisfactorily demonstrated with appropriate dosimetry use and proper documentation.

For this capability the following REP criteria were met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1 and 4.a.3.

3.2.2.4 Joint Information Center (JIC)

Emergency Public Information and Warning:

The State of Mississippi successfully demonstrated the ability to keep the public informed of emergency actions and information through the efforts of State and local PIOs located at the SEOC and the Entergy Operations Building. Both areas were well equipped and personnel had redundant communications to ensure timely and effective coordination.

The State Joint Information Center (SJIC) at the SEOC is the focal point for the development and dissemination of emergency action messages informing the public of protective actions measures based on an incident at GGNS. The SJIC subsequently prepares follow-up messages that provide more detail to focus the efforts of the public. Concomitantly, State and local PIOs located at the Entergy JIC have the primary function to provide critical information to the media and provide clarification of erroneous information and rumors through media presentations and the delivery of news releases to on-site media. These functions were well performed at both locations and resulted in the preparation of two emergency action messages, eight news releases and participation in four media briefings.

Following the declaration of Alert ECL, public information staff members were notified and assembled at the SEOC and prepared to assist in the activation of the SEOC and the Entergy JIC. Established protocols were followed throughout the activation process and in preparing, coordinating and disseminating news releases. Lead PIOs at both locations

maintained a continual dialogue to share situational awareness. During media briefings spokespersons answered all questions and competently and confidently discussed actions taken in response to the emergency.

A critical aspect of keeping the public informed is ensuring the correct information is available and erroneous information is corrected and rumors squelched. The State's Public Inquiry staff located at the Entergy JIC was keep aware of the evolving situation by periodic updates by the lead PIO. They fielded calls from the public and supported Entergy counterparts in responding to queries and identifying trends and rumors that required correction.

For this capability the following REP criteria were met: 1.a.1, 1.d.1, 1.e.1, 5.a.1 and 5.b.1.

3.2.3 Risk Jurisdiction

3.2.3.1 Claiborne County

Emergency Operations Center Management:

Claiborne County Emergency Management staff and supporting county and municipal agencies successfully demonstrated the capability to provide MAC for incident management by activating and operating an EOC. This included: EOC activation, notification, staffing, management, direction, control, and coordination of response activities. It also included coordination of efforts among neighboring governments and the State. They also demonstrated the ability for coordination of public information and warning; and maintenance of the information and communication necessary for coordinating response activities.

Although EOC personnel were pre-positioned the Communications Officer explained the normal call roster system and the ability to insure the EOC could be activated in a timely manner. The EOC had sufficient equipment and communications for conducting operations and communicating with other State and local governments and agencies, including two dedicated telephone systems, the Operational Hot Line (OHL), a dedicated line between the state and county warning points and operations centers, and the ANS/EAS Line, a dedicated conference call telephone line used for jurisdictional coordination.

The Emergency Management Director and the EOC staff clearly demonstrated the ability to provide effective emergency response. The Director provided effective direction and control throughout the exercise and demonstrated the ability to protect the health and safety of the citizens of Claiborne County. The EOC staff, composed of representatives from various municipal and county agencies, clearly understood their responsibilities and performed their assigned functions with high levels of proficiency.

For this capability the following REP criteria were met: 1.a.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 and 3.d.2.

Emergency Public Information and Warning:

Claiborne County Emergency Management staff demonstrated the capability to develop, coordinate, and disseminate accurate alerts and emergency notification to the media and the public. After the SEOC activated the siren system the Communications Officer monitored the failure report and determined there were no siren failures. If there had been, the County Sheriff, with assistance from other agencies, was fully prepared to initiate actions required to perform backup route alerting. In addition, Claiborne County has Code Red, an automated calling system ideally suited for rapid emergency notifications of all county residents, as well as 40 tone alert radio receivers, located in schools, one motel, day-care centers, private residences, the county hospital, businesses, and a senior citizen residential facility.

The PIO at the JIC continuously maintained contact with the Emergency Management Director (EMD). The Director carefully insured that any press releases were reviewed by the county key leadership, which included the Claiborne County President of the Board of Supervisors, Mayor of Port Gibson, County Sheriff, and the Port Gibson Police Chief.

For this capability the following REP criteria were met: 1.d.1, 1.e.1, 5.a.1 and 5.b.1.

Emergency Public Safety and Security Response:

This capability was demonstrated in two separate parts; implementation by out of sequence interview and management by the law enforcement representatives in the EOC. Claiborne County Sheriff's Office deputies can be activated, mobilized and deployed to assigned Traffic Control Points (TCP) in a timely manner. Command and control of the TCPs as well as resource and impediment removal coordination is completed from the EOC and relayed to personnel through supervisors or dispatch. TCPs are established at the direction of the county EOC or at the Site Area Emergency (SAE) ECL. Assigned deputies were knowledgeable in directing evacuees out of affected areas to the reception centers. The deputies were also competent in the use of issued exposure control equipment. The assigned deputies also provide and maintain an effective law enforcement presence in maintaining perimeter control of the evacuated areas.

For this capability the following REP criteria were met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 3.d.2.

Emergency Public Information and Warning:

Claiborne County Sheriff's Office, Port Gibson Police Department, and Claiborne County Emergency Management Agency (CCEMA) personnel were all knowledgeable on planning and conducting backup route alerting procedures in the event of a siren failure by the primary alert and notification system. During an interview the CCEMA Operations Manager explained how the routes would be determined in the EOC based on siren failure locations. Deputies and police officers would be recalled to the EOC,

briefed on the affected route, issued necessary equipment (dosimetry and potassium iodide), and receive a pre-scripted message to periodically read over the vehicle public address system to warn residents in the area. The senior law enforcement officials present (Sheriff and Chief of Police) were fully prepared to dispatch personnel to conduct backup route alerting as necessary.

For this capability the following REP criteria were met: 1.a.1, 3.a.1and 5.a.3.

Hazardous Materials Response and Decontamination:

Establishment of the Claiborne Emergency Worker Decontamination (EWD) begins when MEMA requests CCEMA to activate this function. The Fire Department staff is mobilized using a paging system. Personal Protective Equipment (PPE), administrative supplies and equipment was sufficient to perform EWD operations. EW's were knowledgeable of Permanent Record Dosimetry (PRD), Direct Reading Dosimetry (DRD), survey equipment, KI ingestion and monitoring techniques. EW's successfully demonstrated monitoring, decontamination, and registration of EW's in a timely manner. The facility has ample space and is conducive to perform EWD operations. Two EW vehicles were appropriately monitored and the contaminated vehicle was successfully decontaminated on site.

For this capability the following REP criteria were met: 1.a.1, 1.e.1, 3.a.1, 6.a.1 and 6.b.1

3.2.4 Host Jurisdictions

3.2.4.1 Adams County

Emergency Operations Center Management:

The Adams County EMD and EOC staff successfully demonstrated host county responsibilities in the event of an incident at Grand Gulf Nuclear Station. Adams County is prepared to receive, monitor, decontaminate and care for risk county citizens in the event of an evacuation. The Adams County EMD successfully demonstrated excellent direction, control and coordination of response activities at the EOC. He conducted very informative, thorough and structured briefings at regular intervals. This experience reflected on Adams County EOC staff which enabled them to perform their duties and responsibilities in a very professional and cohesive manner. The EMD coordinated all decisions with his leadership. Alert, notification and mobilization of the EOC staff was prompt and the EOC was activated in a timely manner. Staff personnel were knowledgeable, professional and performed their duties proactively and in accordance with established plans and procedures.

For this capability the following REP criteria were met: 1.a.1, 1.c.1, 1.d.1 and 1.e.1.

Hazardous Materials Response and Decontamination:

Adams County Reception and Congregate Care Center (RCCC) operations were evaluated during out of sequence on October 3, 2011 at the Natchez High School, Natchez, MS in support of GGNS. Adams County successfully demonstrated the ability to conduct RCCC operations. Adams County Emergency Management Agency (EMA) personnel are very familiar with RCCC operations and very well complimented by an excellently trained RCCC staff. Sufficient quantities of equipment, dosimetry, and supplies to support personnel monitoring and decontamination operations was on hand and operational. Radiation exposure limits and administrative reporting for turn back values was determined by interview during the demonstration with EWs. It is expected that an estimated 740 evacuees will arrive at the shelter. The requirement to process 20% of the assigned population in 12 hours could easily be met.

The extraordinary level of training provided to the Adams County EWs was visibly apparent in the level of detail they demonstrated in the execution of their duties. A bit of discomfort was initially detected by evaluators but soon dissipated as the EWs settled into their roles and performed excellently. All Claiborne County evacuees received at the Adams County RCCC will undoubtedly receive "top notch" monitoring and care.

For this capability the following REP criteria were met: 1.a.1, 1.e.1, 3.a.1 and 6.a.1.

Mass Care (Sheltering, Feeding, and Related Services):

Representatives from the Adams County Department of Human Services and the ARC, Natchez Office excellently described shelter operations at Natchez High School. Each representative was very knowledgeable about their duties and responsibilities. County Department of Human Services personnel demonstrated the registration process by accomplishing registration forms as evacuees arrived.

Potassium Iodide will be provided by the Adams County Health Department at this facility. They did not participate in the exercise.

For this capability the following REP criterion was met: 6.c.1.

3.2.4.2 Copiah County

Emergency Operations Center Management:

Copiah County EOC staff was professional and fully engaged throughout the exercise. Plans and procedures included redundancies to ensure safety and protection of the public. Communication systems were adequate for the exercise. The EMD held frequent briefings to keep staff apprised of changes. Decisions were made with a sense of urgency and coordinated with county and city officials' appropriately. EOC staff demonstrated adequate knowledge and capabilities necessary to receive evacuees should an incident occur at GGNS.

For this capability the following REP criteria were met: 1.a.1, 1.c.1, 1.d.1 and 1.e.1.

Hazardous Materials Response and Decontamination:

Copiah County successfully conducted RCCC operations with all participants receiving a safety briefing; evacuee vehicle monitoring, exit procedures, and good directions were given to the evacuees as they moved through the RCCC. Evacuee controls are in place for mass registration of school students and can be performed in a timely fashion. Personnel monitoring was appropriately conducted and can achieve the 20% processing rate in 12 hours.

For this capability the following REP criteria were met: 1.a.1, 1.b.1, 1.e.1, 3.a.1 and 6.a.1.

Mass Care (Sheltering, Feeding and Related Services):

The local ARC and the Copiah County Department of Health Services successfully demonstrated the capability to provide services and accommodations for evacuees arriving at the Hazlehurst Middle School complex reception and congregate care center.

The Lead ARC Volunteer (Shelter Manager) certified that the congregate care center complies with ARC mass care planning guidelines. A shelter floor plan was available and the Shelter Manager had a current Shelter Facility Survey form (ARC Form 6544). The Shelter Manager stated that ARC volunteers from Copiah County would provide staffing to sustained shelter operations. The shelter equipment and supplies is provided by Copiah County and delivered to the shelter in the Copiah Emergency Response Vehicle (ERV) trailer. County Animal Control will provide shelter for any household pets that are brought to the reception center by evacuees seeking to stay in the ARC facilities.

For this capability the following REP criteria were met: 1.b.1 and 6.c.1.

3.2.4.3 Hinds County

Emergency Operations Center Management:

Hinds County Emergency Management Agency (HCEMA) successfully demonstrated this capability, by alerting, notifying and mobilizing the HCEMA's EOC (HCEOC). MEMA called HCEOC each time an ECL was declared, all subsequent updates to ECL were relayed by State Area Coordinators. The HCEOC Director and the Assistant Director were in constant communication with county government providing updates to the Board of Supervisors.

County departments were notified via telephone at each ECL; pre-scripted notification messages provided situational awareness and actions required by the departments, in accordance with Hinds Co. REP Annex C. The HCEOC was activated at the SAE ECL; actual notifications were made; only the American Red Cross was prepositioned, all other departments responded to the HCEOC. The HCEOC used maps and display boards throughout the exercise; WebEOC was displayed and monitored at all times.

HCEOC demonstrated redundant communications systems, throughout the exercise. Commercial telephone, fax, cell phones and WebEOC were frequently used during the exercise, other communication equipment were noted. The HCEOC is responsible for providing 24 hour per day notification to and activation of the local emergency response network that can initiate emergency response actions. Hinds County departments communicate with 800 MHz radios and have ability to inter-communicate within the county and some outside agencies. The Radio Amateur Civil Emergency Service (RACES), volunteers also provide communication support to the HCEOC, other counties and cities, according to Hinds Co. REP Annex B.

The Director and the Assistant Director provided good direction and control throughout the exercise, hourly briefings of the HCEOC were observed, Hinds County Departments discussed their portion of the activation, providing situational awareness throughout the exercise. A State Area Coordinator provided the HCEOC vital information, answered questions and updated WebEOC for the county.

For this capability the following REP criteria were met: 1.a.1, 1.c.1, 1.d.1 and 1.e.1.

Hazardous Materials Response and Decontamination:

Hinds County RCCC operations were evaluated at the Hinds Community College Utica Campus, Utica, MS. The Utica Campus serves as the Reception Center and provides initial evacuee monitoring, decontamination, and processing. The sheltering and care of the evacuees is done at the Hinds Community College Raymond Campus, located 20 miles north of the Utica Campus. Both facilities are located outside the 10 mile EPZ of the GGNS.

Due to inclement weather and heavy rain this demonstration was moved indoors to the gymnasium and conducted by interview. The full setup of the facility was not observed, however the EW responsible for its operations adequately explained the process.

Sufficient quantities of equipment, dosimetry, and supplies to support personnel monitoring and decontamination operations were available during this demonstration. Operational checks were properly performed and background readings were discussed.

The interview began with the HCEMA Director explaining the process for implementing emergency worker exposure control procedures. This includes providing the appropriate dosimetry to EW in accordance with Hinds County published plans and procedures. The issuance of the KI is the responsibility of the MSDH. KI would be issued to EW's when determined by MSDH/SHO. Radiation exposure limits, administrative reporting and turn back value was discussed with EW's.

The Director explained that the County has designated Radiological Monitoring and Decontamination teams to operate the monitoring and decontamination points at the Reception Center. The workers at the evacuee monitoring and decontamination points would don PPE comprised of their normal service uniform, boot covers and surgeon gloves. The individual at the vehicle wash station would dress in full PPE (bunker gear).

Evacuee vehicles entering the Reception Center would be stopped and washed prior to entering the campus. All passengers except the driver would be removed and guided to the portal monitor for assessment. The driver would be guided to parking and then transported back to the portal monitor station. If evacuees are deemed uncontaminated, they would proceed to the gym entrance and be processed into the Reception Center and briefed on center rules. Should an evacuee be contaminated, he/she will be directed to the appropriate shower area for decontamination removal. A subsequent survey by handheld meters would be conducted to determine decontaminated status. Once the individual was uncontaminated, he/she would be processed into the Reception Center using the same process as the uncontaminated individuals.

The Radiological Monitoring and Decontamination team knew that 1mR/hr was the action level to determine if an individual was contaminated. The workers at the Hinds County Reception Center successfully explained and demonstrated the procedures for the processing of evacuees.

For this capability the following REP criteria were met: 1.a.1, 1.e.1, 3.a.1 and 6.a.1.

Mass Care (Sheltering, Feeding and Related Services):

Representatives from the Mississippi Department of Human Services (MDHS) and the ARC, Mississippi Capital River Chapter, Jackson Office described registration activities for the reception center and shelter operations. All representatives were very knowledgeable about their duties and responsibilities. MDHS accomplishes initial registration of evacuees and manages the reception. The ARC manages the shelter located in the Mayo Fieldhouse at the Raymond Campus. Both MDHS and ARC personnel are located at each location. The registration tables are staffed by both MDHS and ARC personnel to assist evacuees in accomplishing the standard ARC *Shelter Registration Form*. There was no separate MDHS registration form for the state. An *Initial Intake and Assessment Tool* form is also used to identify individuals with special needs. A nurse's station is staffed to assist evacuees with medical needs. Companion animals are allowed in the reception center and shelter. Transportation is provided by Hinds County EMA to transport evacuees from the Reception Center to the Shelter. Evacuees wishing to depart the reception center for other destinations would have to wait until reception center staff had time to survey vehicles for contamination and designate clean. Evacuees would be encouraged to wait at the shelter rather than at the reception center until this could occur. Transportation back to the reception center would also be provided once evacuee vehicles had been cleared.

Evacuees arriving at the shelter from the reception center would complete another registration form and be briefed on shelter rules. A computer would also be set up near the registration area to allow evacuees to register on the ARC "Safe and Well" web site or to search for family members. Necessary supplies would be brought in from response trailers stored at the ARC Jackson Office or from other nearby ARC shelters. If the shelter reached capacity, a backup shelter at one of the Hinds County Schools in Raymond would be activated.

The RCCC demonstration was in accordance with the Hinds County Radiological Emergency Preparedness Plan and the interview was successfully conducted.

For this capability the following REP criterion was met: 6.c.1.

3.2.4.4 Warren County

Emergency Operations Center Management:

The Warren County EOC is located at 1009 Cherry Street, Vicksburg, MS. This facility contains the primary working space and the necessary communications to coordinate emergency operations throughout the county and to maintain liaison with MEMA and the SEOC. The EOC was activated in accordance with the Warren County Radiological Emergency Preparedness Plan (WCREPP) in support of the GGNS.

The Warren County Emergency Management Director (WCEMD) has the primary responsibility for the management and activation of the EOC. The Staff in the EOC was arranged in accordance with the ESF structure as outlined in the National Response Framework (NRF) and the National Incident Management System (NIMS).

The EOC was well lit and offered ample space for the staff to perform the duties required of them. Equipment and supplies were sufficient to support Host County EOC operations. The EOC was well equipped with a redundancy in communications. The primary means of communication was cellular phone and commercial telephone. Secondary communications included 800 MHz radio, facsimiles and internet connectivity.

Warren County is one of four host counties to the GGNS. During an evacuation of Claiborne County, Warren County is responsible for coordinating response activities, such as monitoring and decontamination, registering and emergency workers and sheltering of evacuees. Warren Central High School (WCHS) in Vicksburg has been designated as the counties RCCC. The County will also support Claiborne with transportation support for the relocation of school children.

The Host counties are not afforded the opportunity to listen in to the decisions between MEMA and Claiborne County. This deficit of information leaves the Host counties without the full picture of the situation. The adage of situational awareness extends beyond Warren counties borders because its primary mission is to provide support to Claiborne County evacuees. Allowing or ensuring that the Host counties are involved in the process would help.

Throughout the exercise both the Director and Operations Officer conducted periodic updates to the staff. This was followed by a brief discussion with each agency on their individual response efforts and actions. These briefings ensured that the staff of the EOC was well aware of each agencies action and provided for an increase in situational awareness among the different departments. The Director and the various agencies supporting the EOC are fully capable of performing the duties required of them.

For this capability the following REP criteria were met: 1.a.1, 1.c.1, 1.d.1 and 1.e.1.

Hazardous Materials Response and Decontamination:

Warren County RCCC operations were evaluated during out of sequence on July 25, 2011 at the WCHS, Vicksburg, MS in support of GGNS. Warren County successfully demonstrated the ability to conduct RCCC operations. Warren County EW's are very familiar with RCCC operations and personnel management. Sufficient quantities of equipment, dosimetry, and supplies to support personnel monitoring and decontamination operations was on hand and operational. Radiation exposure limits and administrative reporting for turn back values was determined by interview during the demonstration with EW's. It is expected that 309 evacuees will arrive at the shelter. The requirement to process 20% of the assigned population in 12 hours could easily be met.

For this capability the following REP criteria were met: 1.a.1, 1.e.1, 3.a.1 and 6.a.1.

Mass Care (Sheltering, Feeding, and Related Services):

Representatives from the MDHS and the ARC, Mississippi Capital River Chapter, Vicksburg Office excellently described shelter operations at Warren Central High School. All representatives were very knowledgeable about their duties and responsibilities. ARC and MDHS personnel were very aware of entrance procedures and the registration process concerning evacuees. There was no separate MDHS registration form for state records. The ability for separated families to reconnect would also be provided from the ARC through the "Safe and Well" online program. Necessary supplies would be brought in from other nearby ARC shelters. Evacuees with special needs or medical needs could receive an assessment at this location prior to being moved to appropriate facilities.

For this capability the following REP criteria were MET: 6.c.1.

Triage and Pre-Hospital Treatment

The Vicksburg Fire Department and River Region Medical Center successfully demonstrated the capability to respond to and treat contaminated injured individuals during an MSD. All on hand dosimetry and survey equipment was operational and preformed as intended. The fire department response to the scene was simulated but each EW exemplified good knowledge and training with dosimetry, survey equipment, contamination control practices and wearing of PPE. The patient was triaged and secured according to procedures and transported successfully to the hospital. One key piece of patient information was not transmitted to the hospital by the medical technicians; however the hospital did receive notification of a "contaminated patient" from the 911 dispatcher prior to the medical technician's notification.

The contract GGNS controller was not completely familiar with the patient injects causing a delayed response for the medical technicians as they requested patient information for simulated activities (i.e. IV, blood pressure, status monitor, and level of pain).

Upon arrival at River Region Medical Center, the medical technicians began discussing multiple methods to transfer the contaminated patient to the hospital. When the contaminated patient was removed from the vehicle there was no clear directions given to the medical technicians of what to do with the patient. A written procedure exists in the hospital's *Radiation Emergency Area Set-Up* checklist but was not utilized. No negative consequences resulted from this deviation as the medical technicians wheeled the patient directly into the decontamination room.

The Emergency Department (ED) at River Region Medical Center received a call from a 911 dispatcher informing of a "general evacuation" around Grand Gulf Nuclear Station and that an ambulance had been dispatched for an accident victim in the evacuation area which was potentially contaminated. Based on the call, ED staff quickly decided to prepare to receive a radiologically contaminated patient. Established procedures were followed in assigning personnel and setting up the decontamination room and the exterior sidewalk and driveway areas of the ambulance bay. All equipment and supplies necessary for receiving a contaminated patient are stored inside the decontamination room.

The four personnel (one doctor, two nurses, and one nuclear medicine technologist) in the radiation emergency area (REA) and the buffer zone nurse and assistant (nuclear medicine director) properly wore PPE, gloves and dosimetry. All survey equipment and dosimeters were operational and used as intended.

The ambulance arrived, wheeled the patient into the decontamination room on the ambulance gurney and provided a medical report to the doctor and the patient was transferred from the ambulance gurney to the decontamination table. The patient was still strapped to the ambulance's backboard during the transfer.

Step 14 of the hospital's *Radiation Emergency Area Set-Up* checklist (Attachment I of their procedure) says to "Place stretcher in ambulance parking area. Place decon table on stretcher."

The doctor and nurses began a medical assessment of the patient immediately following the transfer of the patient while a nurse collected nose and mouth swabs.

The technologist began surveying using proper survey techniques and found all areas of contamination on the patient. The final survey of the patient was performed and declared "clean" except for the bandaged forearm wound. However, the patient's back was never surveyed. This was due in part to the patient not having to be log rolled to remove his clothing; the clothing was cut away in the initial assessment. When prompted, REA personnel correctly described the procedure for log rolling and surveying the patient's back.

The patient was transferred to a clean ED gurney and removed from the REA. One nurse properly demonstrated PPE doffing using the posted procedure.

3.3 Ingestion Evaluation Capability Summaries

3.3.1 State of Mississippi

State Emergency Operations Center Management & Food and Agriculture Safety and Defense:

The Ingestion Pathway Exercise began with the MEMA director having the three Branch Chiefs (Infrastructure, Emergency Services and Human Services) brief the SEOC, Risk and Host Counties on the present conditions, completed actions and any possible problem areas. In addition the Department of Health/Division of Radiological Health, National Weather Service, the Director of Response and the MEMA Director gave briefings. The RAAO recommended embargoing all products in the I-131 plume area identified on the plume plot.

The MEMA Director directed the Branch Chiefs, Department of Health and the RAAO to develop an embargo area and identify boundaries that could be defined. He also directed that a plan be developed to attempt to get evacuated personnel returned to their homes and to get families that had been separated united.

The RAAO briefed the MEMA Director and Leadership Team and members of Federal Radiological Monitoring and Assessment Center (FRMAC) initial embargo and relocation areas. His initial recommendation was to have personnel shelter in place out to 50 miles based on the utility generated I-131 map. A FRMAC representative clarified what the ingestion map identified and how to use the information. She stated that the map could not be used to determine shelter in place recommendations just agriculture and livestock PARs, and that sheltering in place was not an appropriate recommendation based on the map information. After much discussion the MEMA Director ordered the RAAO, the Mississippi Department of Transportation (MDOT), and Mississippi Highway Patrol (MHP) to develop realistic defined boundaries for five counties and to only restrict personnel movement in Claiborne and Jefferson Counties.

After the Team had time to develop a plan the MEMA Director briefed the Risk and Host Counties. The RAAO began the briefing and then the FRMAC Representative assisted in explaining the maps and the information and its impact on the evacuation and embargo areas. It was determined that the embargo area would include Claiborne, Franklin, Jefferson, and Lincoln Counties. The MEMA Director asked the counties if they had any questions or comments and included them in the process. In addition personnel could return to all area except Protective Action Areas (PAA) 1, 4A, 4B, 5A and 5B.

After this briefing was completed there was a simulated time jump to Day 3. The time jump to day three began with an SEOC briefing. The briefing content summarized the PARs/PADs which had occurred and the events which would have occurred within that timeframe. The Infrastructure Branch, Emergency Services Branch and Human Services Branch Chiefs, Risk and Host County Directors, and Department of Radiological Health briefed accomplished actions for the previous time period. The MEMA Director then

briefed his expectations for all personnel; refer to respective plans and procedures and prepare expected actions for re-entry.

The MEMA Director convened a PAR meeting for re-entry after the briefing. He posed questions from Annex H of the Mississippi Radiological Emergency Preparedness Plan (MREPP) to DRH, Claiborne County EMD, and FRMAC pertaining to re-entry into PAA's 1, 4a, 4b, 5a, and 5b. The MEMA Director requested the RAAO to re-access ingestion data and define which areas would require relocation as opposed to re-entry. The FRMAC Representative informed them of the capability to create Re-entry Dose Maps for the affected area with a stay time of two hours. FRMAC and DRH decided to pool their resources and confer on the development of re-entry options for the MEMA Director. The outcome was a DRH and FRMAC recommendation to relax the PAD for PAA's 5a and 5b. The MEMA Director and the Claiborne County EMD both concurred.

The decision makers discussed the re-entry process. They would encourage families to only re-enter for urgent reasons such as: collect a family pet; feed farm animals; or collect items dire to their standard of living. The mode of transportation for re-entry was discussed, such as using busses, to aid controlling the amount of individuals re-entering the area and designating a single point of entry and exit. Consideration was given to transporting family pets from the affected area and what circumstances would have to be employed to safely move pets and maintain contamination control.

Following this briefing there was a simulated time jump to day 7. The Leadership Team, Branch Chiefs and Claiborne County EMD held discussions centered on the disposal of affected crops and livestock. The MEMA Director requested the advice of the FRMAC "A" Team. The FRMAC Representative explained map products and information to be gained reading the maps which helped in the decision making process. The "A" Team advised of the possibility for "reprocessing" affected animals and crops if possible. In some instances the reprocessing would decontaminate crops and/or animals enough for other uses than intended. The "A" Team requested the type of crop/livestock and the quantity to begin researching options. The next discussion pertaining to the disposal of affected crops and livestock was with the Entergy representative who referred all questions to American Nuclear Insurers (ANI). The last option considered was to request the implementation of the Price Anderson Act for immediate funding.
Exercise End of Exercise (ENDEX) followed immediately after this discussion was complete.

For this capability the following REP criteria were met: 2.d.1, 2.e.1, 3.e.1, 3.e.2 and 3.f.1.

Hazardous Materials Response & Decontamination:

This capability was demonstrated by DRH Field Teams (FTs) out of sequence on November 1, 2011, and by DRH dose assessment personnel during the exercise on November 2.

Two FMTs were positioned near GGNS following the plume phase of the exercise. Both FMTs had adequate equipment and supplies to collect samples essential for the assessment of the hazards and to evaluate the level of risk to responders and the public. The teams collected soil, water, vegetation and milk samples using procedures designed to prevent cross contamination. The samples were properly prepared and sized for effective laboratory analysis. Proper labeling and packaging were demonstrated, as well as chain of custody procedures. Direct radiation measurements were performed at the sampling sites, and locations were identified and documented.

The Dose Assessment Officer (DAO) used a DRH computer equipped with a calculation spreadsheet to determine first-year, second-year, and fifty-year doses, as well as derived response levels from the laboratory analysis of a soil sample. The DAO also used another spreadsheet to determine that contamination on a feed grass sample exceeded protective action guidelines.

For this capability the following REP criterion was met: 4.b.1

3.3.2 County Emergency Operations Centers

Local Emergency Operations Center Management:

The risk county of Claiborne and host counties of Adams, Copiah, Hinds and Warren successfully demonstrated this capability through the use of open discussion during the GGNS Ingestion Exposure Pathway Exercise. This table top exercise provided the counties the opportunity to react, and respond to PADs following a simulated release of radioactive material from GGNS. The County Directors and their assistants performed the duties required of them and in accordance with their plans.

Day 2: All counties, host and risk successfully demonstrated this capability by discussing and assessing radiological consequences, which would affect the life and safety of the residents of the county. During this ingestion phase exercise, Risk and Host County Directors, Claiborne PIO and Host Counties operation officers were present at MEMA. Day 2 begin with a situation awareness briefing from MEMA staff. Claiborne County had been completely evacuated from the 10 mile EPZ and Host Counties had their evacuees in Reception Centers in surrounding host counties. Claiborne County also was secure from any reentry. Adams, Copiah, Warren and Hinds Counties had open shelters with evacuees. MEMA reported that all shelters had been closed accept in Hinds county. MEMA Director called all the counties into a meeting to update them and to get concurrence from the county to extend the EPZ by 15 miles. All the counties agreed to extend the EPZ and provide notification of the action taken by MEMA. During the exercise the risk and host counties had a multiagency meeting to arrange resources for reimbursement out-of-pocket expenses.

The Claiborne County PIO was responsible for developing message Information and press releases to Claiborne County residents. The PIO ensured that the EMD reviewed

and approved the release of each message to ensure accurate information was given to the public.

During the Day 2 event support personnel were kept actively involved in the ongoing operation and demonstrated a strong ability to provide mutual support and provide assistance as needed to ensure a successful mission. The Directors conducted numerous staff briefs to keep staff members abreast of changing conditions, to guide and verify actions and to allow staff to address concerns. This was particularly effective in that it allowed communication between host and risk counties and MEMA to accomplish their objectives.

Day 3: The county Directors and their assistants discussed the importance of maintaining situational awareness, both with external events and agencies and with internal operations. They discussed the use of several proven methods used in other hazardous events, and agreed that they would rely on state guidance provided for emergency worker radiation exposure controls. County directors also agreed they would rely heavily on their county agriculture agent and law enforcement assistance from the state in accomplishing notifications and enforcing agricultural restrictions which might be imposed by the State Agriculture Department. During the discussion of relocation, reentry and return the counties realized they would need additional resources and training to be able to accomplish the tasks without assistance from other agencies. They agreed they would follow the recommendations of the state relating to relocation and return but again would need assistance in accomplishing the tasks. 1172 evacuees were reported at the Host Counties Shelter by the morning of day 3; the Host Counties provided Claiborne County with police officers for traffic flows of evacuees, Host Counties supported Claiborne County as needed with re-entry efforts. Re-entry decisions were made and coordinated with the counties, based on assessments of radiological conditions and criterion according to MREPP, Annex H. No food or water restriction affected Host County. The EMDs participated in numerous decision meetings in coordination with the State and other counties on protective actions during the operation period of Day 3. American Nuclear Insurance was also setup and established to receive claims from evacuees. The counties built an Incident Action Plan (IAP) with objectives for the long term recovery. The flow of information through the Hosts and Risk counties and MEMA was seamless. They performed professionally and displayed excellent teamwork. The County Directors' proactive leadership contributed to the success of the day 3 events.

Day 7: Risk and Host Counties successfully demonstrated this capability by discussing and assessing radiological consequences, which would affect the life and safety of the residents of the county. All the Directors communicated with county governments, frequently providing updates to the Board of Supervisors. Situational Informational Reports (SitRep) were created by the Risk and Host Counties Emergency Management for Day-7; the following objectives were identified: Provide assistance to Claiborne County with re-entry efforts, Traffic Flow- Sheriff Office, Transportation- School Boards, Provide assistance to Copiah County, Law Enforcement- City of Jackson and to ensure dissemination of reimbursement information to evacuees.

The Directors participated in discussions with MEMA and Department of Human Services regarding reimbursement for activities supporting the emergency (simulated). The Host County Directors discussion with the State Area Coordinators pertained to who would reimburse funds to the counties and the residents.

Claiborne County requested assistance with the transportation of evacuees from shelters to their homes; the Assistant Director tasked the Hinds County School Board to provide school busses and to coordinate the transportation with the ARC and Claiborne County Shelter. The Assistant Director requested through the State Area Coordinator that a Claims Center be opened at Hinds Community College, Raymond Campus. The Directors of the host and risk counties and Operation Officers provided direction and control for their counties throughout the exercise. They effectively coordinated protective actions with Claiborne and host counties of Adams, Copiah, Hinds, Jefferson, Franklin, Lincoln and Warren to protect the public. All Risk and Host County personnel during the exercise performed professionally and displayed excellent teamwork.

The following County personnel were represented:

Risk County
Claiborne County = Port Gibson\Claiborne County EM Director, Operations Officer

Host Counties
Copiah = Copiah County EM Director, Operations Officer
Hinds = Hinds County EM Director, Assistant Director
Warren = Warren County EM Director, Operations Officer
Adams = Adams County EM Director, Operations Officer

Ingestion Pathway Zone (IPZ) Counties
Jefferson, Franklin, and Lincoln

For this capability the following REP criteria were met: 2.d.1, 2.e.1, 3.e.1, 3.e.2 and 3.f.1.

3.3.3 Joint Operations

3.3.3.1 Joint Information Center (JIC)

Emergency Public Information and Warning:

MEMA is the coordinating agency during events which overwhelm local jurisdictions or for which the Governor has declared a State of Emergency. Thus, MEMA's PIO will be the de facto coordinating PIO during such incidents. When incidents require the activation of the Mississippi SEOC the SJIC operating from the SEOC is also activated. The initiation of the SJIC and support of an incident at GGNS was described in the Day 1 Plume Phase evaluation. The second day of the exercise, the ingestion pathway exercise (IPX) tabletop

was designed to focus on activities subsequent to declaration of a General Emergency (GE) and anticipated to occur on Days 2, 3, and 7 of the incident.

The high level of competence displayed on day 1 continued during the IPX. The State Lead PIO described a situation in which the off-site activities would shift the public information focus from the Entergy JIC to the SJIC following initial responses to a declaration of GE. Although SJIC participants were limited to State personnel, the Lead PIO explained that sustainment of the Joint Information System necessitated a collective effort by Federal, State, local and private sector partners. During the IPX she drew upon the experience of her staff to align assistant PIOs with the SEOC branches. She also ensured that as emergency information messages were prepared that information was obtained from the private sector. These actions enabled the APIOs to monitor evolving response, recovery and re-entry plans as they developed facilitating the timely revision of pre-scripted message templates as well as the generation of ad hoc emergency information messages to convey essential information to the public. The SJIC staff understood operational procedures and was not reluctant to refer to guidelines and procedural manuals to ensure consistency.

The SJIC staff successfully implemented their plans and procedures in the development, coordination and dissemination of eight emergency information messages, and in describing how high visibility and recurring media briefings would transpire.

For this capability the following REP criterion was met: 5.b.1.

3.3.3.2 Dose Assessment

Hazardous Materials Response and Decontamination:
The Dose Assessment summary is addressed in the SEOC Hazardous Materials Response and Decontamination section 3.2.1 (page 12) of this report.

For this capability the following REP criteria were met: 2.d.1 and 2.e.1.

Food and Agriculture Safety and Defense:

The Food and Agriculture Safety and Defense summary is addressed in the State Emergency Operations Center Management & Food and Agriculture Safety and Defense section 3.3.1 (page 26) of this report.

For this capability the following REP criterion was met: 3.e.2.

3.3.3.3 Radiological Field Monitoring Teams

Hazardous Materials Response and Decontamination:

This capability was demonstrated by DRH FMTs out of sequence on November 1, and by DRH dose assessment personnel during the exercise on November 2.

Two FMTs were positioned near GGNS following the plume phase of the exercise. Both FMTs had adequate equipment and supplies to collect samples essential for the assessment of the hazards and to evaluate the level of risk to responders and the public. The teams collected soil, water, vegetation and milk samples using procedures designed to prevent cross contamination. The samples were properly prepared and sized for effective laboratory analysis. Proper labeling and packaging were demonstrated, as well as chain of custody procedures. Direct radiation measurements were performed at the sampling sites, and locations were identified and documented.

The DAO used a DRH computer equipped with a calculation spreadsheet to determine first-year, second-year, and fifty-year doses, as well as derived response levels from the laboratory analysis of a soil sample. The DAO also used another spreadsheet to determine that contamination on a feed grass sample exceeded protective action guidelines.

For this capability the following REP criterion was met: 4.b.1.

Section 4: Conclusion

Overall, the exercise was a success. Officials and representatives from the State of Mississippi; the risk county of Claiborne and the host counties of, Adams, Copiah, Hinds and Warren; Entergy as well as numerous volunteers participated in the exercise. The cooperation and teamwork of the participants manifested throughout all segments of the exercise. FEMA wishes to acknowledge the efforts of the many individuals who participated and made this exercise a success. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities.

State and local emergency response organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them.

During this exercise, FEMA identified the following area requiring corrective action (ARCA):

1. 028-11-2.b.1-A-01 MSDH/DRH:

Condition:

1.

a. Large differences between thyroid dose projections and calculated thyroid doses based on FMT air sampling results went unresolved;
b. Large differences in dose projections from the State and utility went unresolved, resulting in potentially unnecessary evacuation beyond the EPZ.
c. At no time were the differences in dose calculations questioned by the RDAO (EOF) or the RAAO (DRH at SEOC) during the data collection, analysis and the PAR process.

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Appendix A: Exercise Timeline

DATE AND SITE: November 1 & 2, 2011 – Grand Gulf Nuclear Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken							
		SEOC	Dose Assessment	JIC	Claiborne County	Adams County	Hinds County	Copiah County	Warren County
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0825	0841	0841	0842	0834	0847	0839	0848	0853
Site Area Emergency	0946	1008	1008	1014	1000	1013	1004	1015	1011
General Emergency	1040	1058	1058	1052	1049	1107	1053	1102	1102
Simulated Rad. Release Started	0947	1008	1008	0947	1059				
Simulated Rad. Release Ended	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing				
Facility Declared Operational	0908	0929	0929	0925	0859	1040	1100	1011	1015
Exercise Terminated	1334	1353	1353	1335	1330	1341	1341	1338	1340
Declaration of State of Emergency Local State		 1111	 1111	 0910 0941	 0910	 1130	 0913	 1050	 1032
Early Precautionary Actions: Schools, Alcorn State College, Special Populations: RCCC Opened		1014	1014	1021	1013	 1115	 1100		
1st Protective Action Decision: Evacuate PAAs 1, 5a Shelter remaining 10-mile EPZ		 1101	 1101	 1105	 1101				
1st Siren Activation		1115	1115	1115	1115				
1st EAS Message		1120	1120	1120	1120				
2nd Protective Action Decision: Evacuate PAAs 1, 3a, 3b, 4a, 4b, 5a, 5b, and 6 Shelter in Place PAAs 2 and 7		 1231	 1231	 1231	 1232				
2nd Siren Activation		1245	1245	1245	1245				
2nd EAS Message		1250	1250	1250	1250				
3rd Protective Action Decision: Evacuate PAAs 2a, 2b and 7 Evacuate Sectors E through L out to 15 miles		 1329	 1329	 1329	 1328				
3rd Siren Activation		1345	1345	1345	1345				
3rd EAS Message		1350	1350	1350	1350				
KI Ingestion Decision: Emergency Workers General Public		 1229 1244	 1229 1244	 1256	 1236 1246		 1244 1250		

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Appendix B: Plume & Ingestion Exercise Evaluators and Assignments

Location	Evaluation Team	Capability and Activity
Joint Operations		
Emergency Operations Facility (EOF)	J. Wills (ICF)	EOC Management HAZMAT Response & Decontamination
Joint Information Center (JIC)	Bill Larrabee (ICF) Gary Bolander (ICF)	Emergency Public Information & Warning
Field Monitoring Teams (FMT)	Bernie Hannah (ICF) Mike Henry (ICF)	HAZMAT Response & Decontamination
State of Mississippi		
State Emergency Operations Center (SEOC)	Joe Harworth (FEMA) Gerald Mclemore (FEMA)	EOC Management Emergency Public Information & Warning
Dose Assessment	John Fill (FEMA)	HAZMAT Response & Decontamination
Claiborne County		
Emergency Operations Center	M.ike Dolder (FEMA) Lorenzo Lewis (FEMA)	EOC Management Emergency Public Information & Warning
TCPs	Robert Nash (FEMA)	Emergency Public Safety & Security
Backup Route Alerting	Lorenzo Lewis (FEMA)	Emergency Public Information & Warnings
Emergency Worker & Vehicle Decon	Gerald Mclemore (FEMA) Matthew Bradley (FEMA)	HAZMAT Response & Decontamination
Adams County		
Emergency Operations Center	Robert Nash (FEMA)	EOC Management
Reception & Congregate Care	Robert Nash (FEMA) Matthew Bradley (FEMA) Gerald Mclemore (FEMA)	HAZMAT Response & Decontamination Mass Care
Copiah County		
Emergency Operations Center	Lisa Rink (FEMA)	EOC Management
Reception & Congregate Care	Robert Nash (FEMA) Matthew Bradley (FEMA) Gerald Mclemore (FEMA)	HAZMAT Response & Decontamination Mass Care
Hinds County		

Location	Evaluation Team	Capability and Activity
Emergency Operations Center	Alex Sera (FEMA)	EOC Management
Reception & Congregate Care	Alex Sera (FEMA John Fill (FEMA) Robert Spence (FEMA)	HAZMAT Response & Decontamination Mass Care
Warren County		
Emergency Operations Center	Robert Spence (FEMA)	EOC Management Emergency Public Information & Warning
Reception & Congregate Care	Alex Sera (FEMA) John Fill (FEMA) Robert Spence (FEMA)	HAZMAT Response & Decontamination Mass Care
Medical Services Drill	John Fill (FEMA) Gerald Mclemore (FEMA)	Triage and Pre-Hospital Treatment
Ingestion Phase		
	Joe Harworth (FEMA) Gerald Mclemore (FEMA)	EOC Management
County Emergency Operations Centers	Robert Nash (FEMA) Robert Spence (FEMA) Alex Sera (FEMA)	EOC Management
JIC	Bill Larrabee (ICF)	Emergency Public Information & Warning
Dose Assessment	John Fill (FEMA)	HAZMAT Response & Decontamination Food and Agriculture Safety and Defense
FMTs	Bernie Hannah (ICF) Mike Henry (ICF)	HAZMAT Response & Decontamination

Appendix C: Extent of Play Agreement

Grand Gulf Nuclear Station Radiological Emergency Preparedness Exercise
November 1 & 2, 2011

A. General Information

- A state or county escort will accompany Federal Evaluators at out-of-sequence demonstrations.

- State and county exercise participants will be pre-positioned near exercise locations. The Emergency Operations Centers (EOC) will continue with daily operations until official notice of emergency.

- Plume activities will begin at approximately 8:00 a.m. on Tuesday, November 1, 2011, and will conclude when all objectives have been met as determined by the Mississippi Emergency Management Agency's lead exercise controller.

- The Ingestion tabletop exercise will begin at approximately 8:30 a.m. on Wednesday, November 2, 2011, and will conclude when all objectives have been met as determined by the Mississippi Emergency Management Agency's lead exercise controller.

- Sirens will be activated in accordance with the Mississippi Radiological Emergency Preparedness Plan (MREPP) and/or the Port Gibson/Claiborne County Radiological Plan using a "Growl" test. This will occur in accordance with the plan.

- Entergy and/or GGNS will provide a liaison to the State EOC (SEOC) and the Claiborne County EOC.

- A State Controller will be located in the SEOC, Claiborne County EOC, Adams County EOC, Copiah County EOC, Hinds County EOC, Warren County EOC and the Joint Information Center (JIC).

- Federal Evaluators will be located in the SEOC, Claiborne County EOC, Adams County EOC, Copiah County EOC, Hinds County EOC, Warren County EOC and the Joint Information Center (JIC).

- Exercise participants will have the opportunity to re-demonstrate exercise capabilities/criterion immediately upon identifying any errors with coordination between the state controller and the federal evaluator if it is deemed feasible and does not interfere with ongoing exercise activities.

- Correction-on-the-spot will be at the discretion of and concurrence between the MEMA Controller and the FEMA Evaluator. Caution should be exercised to insure exercise play is not interrupted.

- The Joint Information Center and Emergency Operation Centers will be allowed to set-up equipment prior to the start of the exercise.

- All demonstrations will be in accordance with this approved Extent of Play Agreement.

- Backup Route Alerting will be performed if the "growl test" returns any failed siren responses.

- Utilize revised KI statement for general public in all Mississippi REP plans and procedures. Mississippi REP Plans and procedures will be updated with the revised KI statement for the 2012 ALC review.

B. Evaluation Areas:

All Participants:

MEMA State Emergency Operations Center (SEOC)
Joint Information Center (JIC)
GGNS Emergency Operations Facility/Field Team Management (EOF/FTM)
MS State Department of Health/Div. of Radiological Health/Dose Assessment (MSDH/DRH/DA)
MS State Department of Health/Div. of Radiological Health/Field Monitoring Team (MSDH/DRH/FMT)
Mississippi Department of Transportation (MDOT)
Claiborne County (Risk County)
Adams County (Host County)
Copiah County (Host County)
Hinds County (Host County)
Warren County (Host County)

1. Emergency Operations Management

Sub-element 1.a. – Mobilization

Participants: SEOC
JIC
EOF
MSDH/DRH/DA
Claiborne County
Adams County
Copiah County
Hinds County
Warren County

Criterion 1.a.1: Offsite response organizations (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; H.4)

Participants and/or appropriate agencies will be pre-positioned near exercise locations. The SEOC, MSDH/DRH/DA and County Emergency Operations Centers (EOC) will continue with daily operations until official notice of emergency. Personnel alert rosters will be provided to FEMA evaluators. A discussion on procedures will be conducted with State and County Warning Point personnel.

Sub-element 1.b. – Facilities

Participants: Copiah County

Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654, H.3)

The Copiah County Reception and Congregate Care Center (RCCC) re-located to Hazlehurst Elementary and requires establishment of a baseline evaluation for RCCC operations. The baseline evaluation will be conducted on 7 September 2011, during OOS activities. Hazlehurst Elementary School is located at 431 Monticello Rd., Hazlehurst, MS.

Sub-element 1.c. – Direction and Control

Participants: SEOC
EOF
MSDH/DRH/DA
Claiborne County
Adams County
Copiah County
Hinds County
Warren County

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; A.2.a, b)

Direction and Control will take place at the participants and/or appropriate agencies EOC's/locations until such time events are beyond the County's capabilities. A FEMA evaluator will be given access to the SIMCELL and injects as needed.

Sub-element 1.d. – Communications Equipment

Participants: SEOC
EOF
MSDH/DRH/ DA
MSDH/DRH/FMT
Claiborne County
Adams County
Copiah County
Hinds County
Warren County

Criterion 1.d.1: At least two communications systems are available, at least one operates properly and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1, 2)

FEMA evaluators will be given access to the participant's communication centers, warning points and WebEOC during the exercise. Copies of state and county WebEOC logs and any attachments will be provided to FEMA Evaluators upon Plume and Ingestion exercise conclusion.

Copies of generated exercise documentation to include sign-in logs, JIC messages/news releases, and GGNS Emergency notification forms from each exercise location will also be provided to FEMA Evaluators upon Plume and Ingestion exercise completion.

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

Participants: SEOC
JIC
EOF
MSDH/DRH/ DA
MSDH/DRH/FMT
Claiborne County
Adams County
Copiah County
Hinds County
Warren County

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI) and other supplies are sufficient to support emergency operations. (NUREG-0654, H.7, 10; J.10.a, b, e, J.11; K.3.a)

Potassium Iodide for emergency workers will not be issued to Emergency Workers. The Radiation Exposure Control Officer (RECO) will demonstrate emergency worker exposure control equipment issuance and briefing of emergency workers.

Quantities of KI for emergency workers, institutionalized individuals, and public will be confirmed by the MSDH/DRH with a 100 percent inventory conducted by staff assistance visits (SAVs) on 21 July, 2011.

All state/county radiation detection equipment will be inspected, and operationally checked before each use. State/county radiation detection equipment will be calibrated or leak tested in accordance with existing plans by the Mississippi Emergency Management Agency authorized equipment facility and verified during the scheduled SAV (22 July, 2011) and/or out-of-sequence (OOS) activities.

The availability of appropriate equipment (e.g. vehicles, barriers, traffic cones, survey kits and signs, etc.) will be discussed by law enforcement personnel/emergency workers with FEMA evaluators at the Claiborne County traffic control point location

Staff Assistance Visits (SAV), to be/have been conducted by FEMA:
Feb 17 – Hinds County – REP Fundamentals Training 8pm
May 10 – Adams County – Reception Center/Decon Training…cancelled
August 27 – Copiah County – Reception Center/Decon Training 8am

2. Protective Action Decision Making

Sub-element 2.a. – Emergency Worker Exposure Control

Participants: SEOC
EOF/FTM
MSDH/DRH/DA
Claiborne County

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, J.10.e, f, K.4)

Dose limits for emergency workers are pre-determined within the scenario. Only when authorized by the State Health Officer with concurrence of City and County elected officials, should any emergency worker be allowed to receive doses or be exposed to concentrations of radioactivity which could result in doses greater than those allowed for the general public. If it becomes necessary for an emergency worker to be exposed to levels exceeding those specified for emergency workers in Annex E, Appendix 1, 2, i.e. for lifesaving activities, the individuals' decision will be made on a voluntary basis. The staff at county EOCs and the SEOC will discuss the processes with evaluators during in-sequence and/or OOS activities.

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

Participants: EOF
MSDH/DRH/DA

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 and Supplement 3)

In the event of a declaration of any emergency classification, the licensee will make a protective action recommendation to the participants and/or appropriate agencies on what protective actions should be taken. The MSDH/DRH conducts an independent assessment and makes recommendations to the MEMA Director regarding protective actions to be taken based off of completed dose projection data received from the Dose Assessment team at the EOF. Dose assessment will take place at the EOF.

Participants: SEOC
EOF/FTM
MSDH/DRH/DA
Claiborne County

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.f, m)

The ultimate responsibility for the State's emergency response to a fixed nuclear facility accident belongs to and is directed by the Governor. The MEMA Director serves as the Governor's authorized representative and is responsible for coordinating the emergency response. The MEMA Director makes all routine decisions and advises the Governor on courses of action available for major decisions. During the response, the MEMA Director is responsible for the proper functioning of the SEOC. The Director also acts as liaison with local, state and federal agencies.

Revised KI statement for general public surrounding GGNS. :
"IV. CRITERIA FOR THE ADMINISTRATION FOR KI

A. KI in tablet form is available to emergency management agencies, police departments, fire companies, ambulance services, farmers keeping livestock and selected industrial workers and to hospitals and nursing homes located within the 10 mile EPZ. Claiborne County will

specify in their plan those facilities, municipalities, agencies and teams that receive KI for use by emergency workers. ***KI will only be made available to evacuees in the shelter in the event of a rapidly escalating event and only upon authorization of the State Health Officer."***

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

Participants: Claiborne County

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

Claiborne County will discuss this criterion with evaluators. A list of potential special population citizens will be provided to evaluators but not removed from the EOCs.

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

Participants: SEOC
MSDH/DRH/DA
Claiborne County
Host/Ingestion Counties

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

Participants and/or appropriate agencies will discuss protective action decisions for the ingestion pathway based on the exercise scenario and planning guidance.

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

Participants: SEOC
MSDH/DRH/DA
Claiborne County
Host/Ingestion Counties

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 ORO's plan and/or procedures. (NUREG-0654, I.10; M.1)

Participants and/or appropriate agencies will discuss aspects of relocation, re-entry, and return decisions for the affected ingestion pathway zone/area and develop sound solutions in accordance with established planning guidance.

3. Protective Action Implementation

*Sub-element 3.a. – Implementation of Emergency Worker Exposure Contr*ol

Participants: SEOC
EOF
MSDH/DRH/DA
MSDH/DRH/FMT
Claiborne County
Adams County
Copiah County
Hinds County
Warren County

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.a, b)

Emergency workers or emergency worker teams will use one Self-Reading Dosimeter (SRD) (Range: 0 to 20 R), one SRD (Range 0 to 200 mR), one permanent exposure recording device such as a thermoluminescent dosimeter (TLD) or film badge.

Dosimeters are distributed to State Emergency Workers through the SEOC by the Radiation Exposure Control Officer (RECO) or pre-issued REP Kits/Boxes. The RECO will be interviewed on the dosimetry and KI issue process. The RECO will also demonstrate the issue process during the emergency worker briefing. One pre-issued REP Kits/Box will be inspected by the FEMA Evaluator. Which pre-issued REP Kits/Box will be at the discretion of the State lead controller.

Emergency workers at the SEOC will be interviewed on radiation exposure limits, KI ingestion, KI turn-in procedures, and the *Personal Radiation Exposure Cards* (REP-1). A REP-1 will be completed by one emergency worker and provided to the FEMA evaluator upon conclusion.

Sub-element 3.b. – Implementation of KI Decision

Participants: SEOC
MSDH/DRH/DA/FMT
Claiborne County

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 for emergency workers and institutionalized individuals (not general public) is maintained. (NUREG-0654, J.10.e)

KI is not issued to emergency workers without an express order by the State Health Officer (SHO) or designee.

Record keeping will be discussed at the SEOC and county EOCs during scheduled SAVs. An inspection of REP-3 Forms (Iodine Sensitivity Questionnaire) will be conducted of 10 random forms to validate EW completion and currency.

Two emergency workers will accomplish required information on the Personal Radiation Exposure Card, (REP-1) during Out of Sequence demonstrations in the Risk and Host counties and provide to FEMA evaluators upon conclusion.

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

Participants: SEOC
Claiborne County

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

Participants and/or appropriate agencies will discuss the capability and resources to implement appropriate protective actions for special population groups. A list of people/facilities with special transportation needs will be provided to evaluators for review but will not removed from the EOCs. Evacuation assistance will be discussed at the Claiborne County EOC during in-sequence activities.

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

Participants: Claiborne County

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)

Claiborne County Sheriff's Department/City of Port Gibson Police Department will demonstrate establishment of TCP A5 on 8 September 2011, **beginning at 1600 hrs.** during OOS activities.

The officers will be interviewed on dosimetry, dosimetry reporting requirements and equipment within the pre-issued REP Kits/Boxes.

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

Participants: Claiborne County

Claiborne county Sheriff's Department/City of Port Gibson Police Department personnel will discuss actions to identify and remove impediments to evacuation routes on location at TCP A5 on 8 September 2011, **beginning at 1600 hrs.** during OOS activities.

Sub-Element 3.e – Implementation of Ingestion Pathway Decisions

Participants: SEOC
Claiborne County
Host/Ingestion Counties

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 planning zone for implementation of protective actions. (NUREG-0654, J. 9, 11)

Participants and/or appropriate agencies will discuss appropriate protective measures concerning possible contaminated products which could be distributed to the general populace.

Participants: SEOC
MSDH/DRH/DA
Claiborne County
Host/Ingestion Counties

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. (NUREG-0654, J. 9, 11)

Participants and/or appropriate agencies will discuss and utilize pre-printed material in concert with protective action decision implementation.

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

Participants: SEOC
Claiborne County
Host/Ingestion Counties
MDOT

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)

Participants and/or appropriate agencies will discuss the methods of Access Control Point (ACP) procedures, re-entry, relocation and return of Emergency Workers and the public.

4. Plume Phase Field Measurements and Analysis

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

Participants: EOF
MSDH/DRH/DA
MSDH/DRH/FMT

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, H.10; I.7, 8, 9)

MSDH/DRH FMT will demonstrate in coordination with GGNS site/EOF and Dose Assessment on sample locations, samples collected, and transport procedures to the laboratory. Sample collection to be demonstrated by each team: one soil, one water and one vegetation. Two FMT's will be generated and utilized for the Plume and Ingestion Pathway exercises. Field teams should be equipped with all instrumentation and supplies necessary to accomplish their mission. This should include instruments capable of measuring gamma exposure rates and detecting the presence of beta radiation. These instruments should be capable of measuring a range of activity and exposure, including radiological protection/exposure control of team members and detection of activity on the air sample collection media, consistent with the intended use of the instrument and the ORO's plans and procedures. An appropriate radioactive check source should be used to verify proper operational response for each low range radiation measurement instrument (less than 1R/hr) and for high range instruments when available.

Participants: EOF
MSDH/DRH/DA
MSDH/DRH/FMT

Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure (NUREG-0654, H.12; I.8, 11; J.10.a)

Participants and/or appropriate agencies will demonstrate FMT management in accordance with established procedures. Responsible Offsite Response

Organizations (ORO) should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment.

Participants: EOF
MSDH/DRH/DA
MSDH/DRH/FMT

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

MSDH/DRH/FMT will demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates and ambient radiation to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. The methodology, including contamination control, instrumentation, and preparation of samples, and a chain-of-custody form for transfer to a laboratory will be in accordance with the ORO's plan and/or procedures.

A chain-of-custody form will be accomplished for each type of sample (soil, water and vegetation). Each FMT will accomplish at least one form; the MSDH/DRH Controller will determine which FMT accomplishes the third chain-of-custody form. The three completed forms will be given to the evaluator upon exercise completion. No personal information will be entered onto the forms (i.e. name, address and phone areas will be left blank).

Participants: EOF
MSDH/DRH/DA
MSDH/DRH/FMT

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.)

MSDH/DRH/FMT will demonstrate integration and coordination with FRMAC field team personnel utilizing previously collected information in conjunction with time jumps and current exercise plume modeling.

5. Emergency Notification and Public Information

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

Participants: SEOC
Claiborne County

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 off-site emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D and NUREG-0654, E.5, 6, 7)

Participants and/or appropriate agencies will coordinate and demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the plans and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification.

For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

Sirens will be activated in accordance with the Mississippi Radiological Emergency Preparedness Plan (MREPP) and/or the Port Gibson/Claiborne County Radiological Plan using a "Growl" test.

Participants: Claiborne County

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized off-site 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)

Claiborne County will perform Backup Route Alerting if the "growl test" returns any failed siren response. If the growl test returns multiple failure responses, only one route will be conducted. The Claiborne County Director will select the route if multiple siren failures are received. Otherwise, the Claiborne County Director will discuss back-up route alerting during the Plume exercise on November 1st, 2011.

Sub-element 5.b. – Emergency Information and Instructions for the Public and the Media

Participants: SEOC
JIC
Claiborne County

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.c)

Participants and/or appropriate agencies will demonstrate the ability to coordinate the formulation and dissemination of accurate information and instructions to the news media at the JIC. Public inquiry for the State will be demonstrated at the JIC. Public inquiry for SEOC and Claiborne County will be demonstrated in accordance with plans. Public inquiry personnel will provide a call log to the FEMA Evaluator upon exercise completion. Copies of public inquiry injects will be provided to FEMA prior to the exercise.

6. Support Operations/Facilities

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

Participants: Claiborne County
Adams County
Copiah County
Hinds County
Warren County

Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h; J.12; K.5.b)

Participants and/or appropriate agencies will demonstrate Reception Centers during OOS activities. At least six people will be monitored and registered for the RCCC's. Personnel decontamination will be demonstrated via walk-through and discussion. Two vehicles will be monitored via demonstration, one of which will be contaminated. Vehicle decontamination will be discussed in accordance with local plans and procedures.

Evaluators will observe RCCC setup during OOS activities. All RCCC's will be fully established in accordance with local plans and procedures.

Demonstrations will include the necessary survey meters, portable portal monitors and monitoring teams required to monitor 20% of the population allocated to the facility within 12 hours.

Reception and/or Congregate Care Centers and Emergency Worker Decontamination to be evaluated are:

Warren County: Warren Central High School 1000 Hwy. 27, Vicksburg, MS will be evaluated on **July 25, 2011 at 1800 hrs**. Will demonstrate decontamination of six evacuees at Warren Central High School through the use of portable decontamination stations; will demonstrate two or more EWs and vehicle(s).

Adams County: Natchez High School (319 Sergeant Prentiss Drive, Natchez, MS) will be evaluated on **October 3, 2011 at 1800 hrs**. Will demonstrate decontamination of six evacuees through the use of portable decontamination stations.

Hinds County: Hinds Community College, Utica Campus Hwy. 18 West, Utica, MS will be evaluated on **July 27, 2011 at 1800 hrs**. Will demonstrate decontamination of six evacuees through the use of portable decontamination stations; will demonstrate two or more EWs and vehicle(s).

Claiborne County: Hermanville-Claiborne County Fire Department at 4117 Old Hwy. 18 #4, Port Gibson, MS will be evaluated on **September 8, 2011 at 1800 hrs**. Will demonstrate decontamination of two or more EWs and vehicle(s).

Copiah County: Hazlehurst Elementary School (431 Monticello Street, Hazlehurst, MS.) will be evaluated on **September 7, 2011 at 1800 hrs**. Will demonstrate decontamination of six evacuees through the use of portable decontamination stations.

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

Participants: Claiborne County

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)

Participants and/or appropriate agencies will demonstrate Emergency Worker Monitoring and Decontamination Facilities during OOS activities. Two emergency workers will be monitored. Personnel decontamination will be demonstrated via walk-thru and discussion. One emergency vehicle will be monitored and decontaminated in accordance with local SOPs.

Claiborne County: Hermanville-Claiborne County Fire Department at 4117 Old Hwy 18 #4, Hermanville, MS will be evaluated on **September 8, 2011 at 1800 hrs**. Will demonstrate monitoring and decontamination of two or more EWs and vehicle(s).

Sub-element 6.c. – Temporary Care of Evacuees

Participants: Adams County
Copiah County
Hinds County
Warren County

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-Preparedness 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, J.12)

Participants and/or appropriate agencies will demonstrate Congregate Care shelters setup, registration process and shelter operations for six evacuees during OOS activities and concurrently with Evaluation Area 6.a. Procedures assuring only non-contaminated persons enter shelters will be demonstrated.

Sub-Element 6.d – Transportation and Treatment of Contaminated Injured Individuals

Participants: Warren County

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)

The River Region Medical Center and the Vicksburg Fire Department, Station #5 will demonstrate the ability to transport, monitor, decontaminate, and provide medical services to a contaminated injured individual in accordance with local plans and procedures. The MS-1 drill will be conducted on **July 28, 2011 at 0800** hrs.

Appendix D: Scenario

Scenario Summary

The scenario has been prepared to test the effectiveness of the emergency response organization (ERO) and functions of the Emergency Plan, implementing procedures, facilities, and equipment. Some events that occur during this drill are unrealistic and may not be strictly in accordance with the design basis of the Facility.

Summary

To exercise the ERO, the goal of the scenario is to uncover the core and provide a path for a radiological release outside containment to the environment. To uncover the core to obtain clad damage, the ECCS systems and normal injection systems must be disabled. A path for radiological release to the environment is required to exercise the ERO fully.

The scenario starts at 0800 in a Division II work week. Workers staging to work (voltage readings) on 16AB inadvertently cause 152-1614 (ESF21 Feed to DIV 2 Bus) to open which de-energizes the bus. The Div II diesel generator auto starts and re-energizes 16AB. A malfunction of the voltage regulator causes a bus fault and resulting fire in 16AB. The fire brigade responds (simulated) and extinguishes the fire. The damage to the switchgear is extensive and it will not be restored for the duration of the scenario. All Division II components are lost. Before 0815 an Alert should be declared on HA4, fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown. Offsite notifications will be made and the ERO will be augmented using the paging system.

At approximately 0915, two condensate pumps trip offline; one due to an electrical short, another due to a sheared shaft when the first pump trips. This results in a loss of RPV injection with condensate and feedwater. The reactor will scram and the associated initiations and isolations occur. As level lowers RCIC and HPCS should auto initiate on reactor water level 2 (-41.6”).

At approximately 0940, a RCIC steam leak will occur in the main steam tunnel downstream of the outboard isolation valve. The isolation temperature will be reached. However, both the inboard (E51-F063) and outboard (E51-F064) isolation valves will fail to close. When the main steam tunnel temperature reaches 185ºF, the Emergency Action Level (EAL) condition for the potential loss (RC3 Potential Loss) of the RCS barrier is met. The failure of both RCIC isolation valves to close leaving a downstream pathway to the environment meets the condition for loss of the primary containment barrier (PC3 Actual Loss). The loss or potential loss of two barriers meets the condition for a Site Area Emergency FS1. The SAE will be declared approximately 0955. A protected area evacuation will be directed.

A reactor coolant leak in the drywell will occur on the RWCU bottom head drain resulting in a drywell high pressure 1.39 psig signal (RC1 Actual Loss). Emergency depressurization should be required due to exceeding the max safe operating temperature in the RCIC room (212º). The high pressure core spray pump will trip shortly after starting and the LPCS and RHR A injection valves fail to open after RPV pressure is lowered. Level will continue to lower.

At approximately 1045, RPV level will lower to <-167”. This is a potential loss (FC2) of the fuel clad and conditions for a General Emergency are met. The GE will be declared and PAR

recommended. A rise in release rate will occur when the core is initially uncovered. As water level continues to fall more fuel damage will occur resulting in a rise release rate.
At approximately 1145 the TSC and OSC teams will successfully isolate the RWCU leak, begin recovering injection sources, and raising RPV water level.

The RCIC leak will be secured around 1230 resulting in a decline in radiological release rate. Radiological release rates will fall to near background levels around 1300. At approximately 1400, the simulator will be placed in FREEZE and the players will begin a self-critique and the exercise will be terminated.

Appendix E: Acronyms

Acronym	Meaning
AAC	After Action Conference
AAR	After Action Report
ACP	Access Control Point
ALARA	As Low As Reasonably Achievable
ALC	Annual Letter of Certification
ANI	American Nuclear Insurers
ANS	Alert Notification System
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio for Emergency Services
ARFI	Areas Recommended for Improvement
BEH	Bureau of Environmental Health, MSDH
CCEMA	Claiborne County Emergency Management Agency
CDE	Committed Dose Equivalent
CFR	Code of Federal Regulations
COE	Corps of Engineers
DEQ	Department of Environmental Quality
DHS	Department of Homeland Security
DAO	Dose Assessment Officer
DMS	Department of Mental Health
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DRD	Direct Reading Dosimeter
DRH	Division of Radiological Health, MSDH
DWFP	Department of Wildlife, Fisheries and Parks
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EEG	Exercise Evaluation Guide
ED	Emergency Department, River Region Medical Center
EMA	Emergency Management Agency
EMD	Emergency Management Director
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
ENDEX	End of Exercise
ENMC	Emergency News Media Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility

Acronym	Meaning
EOPA	Extent of Play Agreement
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPI	Emergency Public Information
EPZ	Emergency Planning Zone
ERAMS	Environmental Radiation Ambient Monitoring System
ESF	Emergency Support Function
ERV	Emergency Response Vehicle
EW	Emergency Worker
EWD	Emergency Worker Decontamination
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FNF	Fixed Nuclear Facility
FOUO	For Official Use Only
FRC	Federal Response Center
FRMAC	Federal Radiological Monitoring and Assessment Center
GE	General Emergency
GGNS	Grand Gulf Nuclear Station
GM	Guidance Memorandum
HAZMAT	Hazardous Materials
HCEMA	Hinds County Emergency Management Agency
HCEOC	Hinds County Emergency Operations Center
HHS	Health and Human Services
HQ	Headquarters
HSEEP	Homeland Security Exercise and Evaluation Program
HUD	Housing and Urban Development
IC	Incident Commander
IP	Improvement Plan
IPX	Ingestion Pathway Exercise
IPZ	Ingestion Pathway Zone
JIC	Joint Information Center
KI	Potassium Iodide
LE	Law Enforcement
LEOC	Local Emergency Operations Center
LDEQ	Louisiana Department of Environmental Quality
GOHSEP	Governor's Office of Homeland Security & Emergency Preparedness
LP-1	Local Primary -1
MAC	Multi-agency Coordination
MBAH	Mississippi Board of Animal Health

Acronym	Meaning
MDAC	Mississippi Department of Agriculture and Commerce
MDA/ED	Mississippi Development Authority/Energy Division
MDHS	Mississippi Department of Human Services
MDOT	Mississippi Department of Transportation
MEMA	Mississippi Emergency Management Agency
MFC	Mississippi Forestry Commission
MHP	Mississippi Highway Patrol
MHz	Mega Hertz
MMD	Mississippi Military Department
MOU	Memorandum of Understanding
mR	milliroentgen
mR/h	milliroentgen per hour
MREPP	Mississippi Radiological Emergency Preparedness Plan
MSD	Medical Services Drill
MSDH	Mississippi State Department of Health
MSU-ES	Mississippi State University – Extension Service
NAWAS	National Warning System
NGO	Non-Governmental Organization
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NOUE	Notification of Unusual Event
NRC	Nuclear Regulatory Commission
NRF	National Response Framework
NUREG	Nuclear Regulation
NWS	National Weather Service
OHL	Operational Hot Line
OOS	Out-of-Sequence
OPS	Operations
ORO	Offsite Response Organization
OSC	Operations Support Center
PAA	Protective Action Area
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PI	Public Information
PIO	Public Information Officer
PNS	Public Notification System
PPE	Personal Protective Equipment
PRD	Permanent Record Dosimetry
R	Roentgen
R/h	Roentgen(s) per hour

Acronym	Meaning
RAAO	Radiological Accident Assessment Officer
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RAD	Radiation Absorbed Dose
RASCAL	Radiological Assessment for Consequence Analysis
RCCC	Reception and Congregate Care Center
RDAO	Radiological Dose Assessment Officer
RBS	River Bend Nuclear Station
REA	Radiation Emergency Area
RECO	Radiation Exposure Control Officer
REM	Roentgen Equivalent Man
REPP	Radiological Emergency Preparedness Program
RERP	Radiological Emergency Response Plan
RERT	Radiological Emergency Response Team
RERTC	Radiological Emergency Response Team Coordinator
RIMC	Radiological Instrument Maintenance and Calibration
RM	Radiological Monitor
RO	Radiological Officer
SAE	Site Area Emergency
SAIDG	State Agency Information Directors Group
SATNET	Satellite Network
SEOC	State Emergency Operations Center
SHO	State Health Officer
SIMCELL	Simulation Cell
SIP	Shelter-in-Place
SitRep	Situational Informational Reports
SMRAP	Southern Mutual Radiological Assistance Plan
SJIC	State Joint Information Center
SOP	Standard Operating Procedure
SRD	Self-Reading Dosimeter
TCL	Target Capabilities List
TCP	Traffic Control Point
TEDE	Total Effective Dose Equivalent
THD	Technological Hazard Division
TLD	Thermoluminescent dosimeter
USCG	United State Coast Guard
USDA	United States Department of Agriculture
UTL	Universal Task List
VFD	Volunteer Fire Department
V/TDD	Voice/Telecommunication Device for the Deaf
WIPP	Waste Isolation Pilot Plant

Acronym	Meaning
WCEMD	Warren County Emergency Management Director
WCREPP	Warren County Radiological Emergency Preparedness Plan
WP	State Warning Point
WCHS	Warren Central High School

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