



Grand Gulf Nuclear Station Biennial Plume Phase Exercise After Action Report

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Executive Summary

On March 22, 2023, the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Region 6, evaluated the Biennial Plume Phase Emergency Radiological Response 10-mile Emergency Planning Zone for the Grand Gulf Nuclear Station, located in Gibson, Mississippi.

During the exercise, FEMA assessed the ability of state and local officials to implement plans and procedures to protect the public in the event of a radiological incident. This exercise is part of the FEMA Radiological Emergency Preparedness Program. This program ensures that adequate capabilities exist to prevent, protect against, mitigate the effects of, respond to, and recover from incidents involving commercial nuclear power plants. This exercise was assessed in accordance with the revised NUREG 0654/FEMA-REP-1, Rev. 2 document and the 2019 Radiological Emergency Preparedness Program Manual (RPM). The previous Plume Phase Exercise was July 13, 2021.

This report contains the final written evaluation of the exercise. The state and local organizations demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Level 1, Level 2 Findings or Plan Issues identified.

Section 1: Exercise Overview

Exercise Name	2023 Grand Gulf Nuclear Station (GGNS) Biennial Plume Phase Exercise
Exercise Dates	March 22, 2023
Purpose	The purpose of the Biennial Plume Phase Exercise was to assess the level of preparedness of Tensas Parish to respond to a simulated radiological emergency.
Mission Area(s)	Protection Response
Core Capabilities	Planning, Operational Coordination, Operational Communications Public Health, Healthcare, and Emergency Medical Services Environmental Response/Health and Safety Situational Awareness Critical Transportation Public Information and Warning On-Scene Security, Protection, and Law Enforcement
Objectives	Emergency Operations Management Exposure Control Alert and Notification Detect, Measure, Sample, Analyze and Assess Operate
Threat or Hazard	Release of radiological materials from a commercial nuclear power plant.
Scenario	This exercise required coordinated decisions of offsite response organizations (OROs) to address a radiological hazard from an emergency at GGNS. The OROs demonstrated the implementation of protective actions to preserve health and safety of the public due to a potential or actual offsite release of radioactive materials from GGNS.
Participating Organizations	A complete list of participating agencies and organizations is attached in Appendix B.

Section 2: Analysis of Capabilities

2.1 Summary Results of Assessment

Table 1 below lists the assessment activity objectives, capability targets, selected core capabilities, and status of each capability target evaluated.

Each jurisdiction and functional entity were evaluated based on the demonstration of core capabilities and capability targets. The demonstration status of the capability targets is indicated using the following terms:

- **Met (M):** The jurisdiction or functional entity performed all activities under the objective/capability target to the level required per the work plan and/or the extent of play agreement, with no Level 1 or Level 2 Findings evaluated under that objective/capability target during the current activity and no unresolved prior Level 2 Finding(s).
- **Level 1 Finding (L1):** An observed or identified inadequacy of organizational performance during an assessment activity that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a Nuclear Power Plant.
- **Level 2 Finding (L2):** An observed or identified inadequacy of organizational performance during an assessment activity that is not considered, by itself, to adversely impact public health and safety.
- **Plan Issue (P):** An observed or identified inadequacy in the OROs emergency plan/implementing procedures, rather than in that of the OROs performance.
- **Not Demonstrated (N):** For a justifiable reason, the jurisdiction or functional entity did not perform assessment activities under the objective/capability target as specified in the extent of play agreement.
- **Not Applicable (N/A):** The objective/capability target does not apply to the jurisdiction.

Table 1. Summary Results of Capability Targets

Date: March 22, 2023 SITE: Grand Gulf Nuclear Station M: Met, 1: Level 1 Finding, 2: Level 2 Finding, P: Plan Issue, and N: Not Demonstrated	Core Capabilities		GOHSEP EOC	LDEQ HQ	LDEQ EOF	FMT 1	FMT 2	JIC at MEMA	Tensas Parish EOC	KMVX Radio Station
Emergency Operations Management										
Mobilization	Ops Coordination	1.1	M	M	M			M	M	
Direction and Control	Ops Coord, Situational Assessment, Environmental	1.2	M	M	M				M	
Protective Action Recommendation	“ “	1.3	M		M					
Protective Action Decisions for the Plume Phase	“ “	1.4	M						M	
Protective Action Decisions Implementation for the Plume Phase	Ops Coord, Environmental Resp/Health & Safety	1.5	M						M	
Protective Action Decision for the Post Plume Phase		1.6								
Protective Action Decision Implementation for the Post Plume Phase		1.7								
Exposure Control										
Emergency Worker Exposure Control Decision-Making Process	Ops Coord, Environmental Resp/Health & Safety	2.1	M		M				M	
Emergency Worker Exposure Control Management	“ “	2.2	M		M				M	
Alert and Notification										
Communications	Ops Coordination, Ops Communication	3.1	M	M	M			M	M	
Alert and Notification of the Public	Public Info & Warning	3.2	M						M	M
Emergency Info & Instructions for Public & News Media	Public Info & Warning	3.3	M					M	M	
Detect, Measure, Sample, Analyze, and Assess										
Field Monitoring Teams Management	Environmental Response/Health & Safety	4.1								
Plume Phase Measurements & Sampling	“ “	4.2								
Post-Plume Phase Measurements & Sampling	“ “	4.3								
Laboratory Operations	“ “	4.4								
Plume Phase Analysis & Dose Assessment	“ “	4.5			M					
Post-Plume Phase Sampling Plan Development & Analysis		4.6								
Operate										
Monitoring, Decontamination, Sheltering, & Registration of Evacuees	Mass Care Services	5.1								
Monitoring, Decontamination of EWs, Equipment & Vehicles	Environmental Response/Health & Safety	5.2								
Transportation & Treatment of Contaminated, Injured Individuals	Transportation & Treatment of Contaminated Injured	5.3								
Traffic and Access Control	Ops Coordination, On-Scene Security, Protection, & Law	5.4	M						M	

2.2 Results of Exercise Evaluation

JOINT INFORMATION CENTER

Objective 1: Emergency Operations Management

Capability Target 1.1: Mobilization

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Capability Target 3.3: Emergency Information and Instructions for the Public and News Media

In summary, the status of DHS/FEMA capability targets for this location are as follows:

- a. MET: 1.1, 3.1, 3.3
- b. LEVEL 1 FINDING: None
- c. LEVEL 2 FINDING: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- a. PRIOR ISSUES - UNRESOLVED: None

LOUISIANA DEPARTMENT OF ENVIROMANTAL QUALITY AT GRAND GULF NUCLEAR STATION EMERGENCY OPERATIONS FACILITY

Objective 1: Emergency Operations Management

Capability Target 1.1: Mobilization

Capability Target 1.2: Direction and Control

Capability Target 1.3: Protective Action Recommendations

Objective 2: Exposure Control

Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process

Capability Target 2.2: Emergency Worker Exposure Control Management

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Objective 4: Detect, Measure, Sample, Analyze, and Assess**Capability Target 4.5: Plume Phase Analysis and Dose Assessment**

In summary, the status of DHS/FEMA capability targets for this location are as follows:

- a. MET: 1.1, 1.2, 1.3, 2.1, 2.2, 3.1, 4.5
- b. LEVEL 1 FINDING: None
- c. LEVEL 2 FINDING: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

LOUISIANA DEPARTMENT OF ENVIROMANTAL QUALITY HEADQUARTERS**Objective 1: Emergency Operations Management****Capability Target 1.1: Mobilization****Capability Target 1.2: Direction and Control****Objective 3: Alert and Notification****Capability Target 3.1: Communications**

In summary, the status of DHS/FEMA capability targets for this location are as follows:

- a. MET: 1.1, 1.2, 3.1
- b. LEVEL 1 FINDING: None
- c. LEVEL 2 FINDING: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**GOVERNOR'S OFFICE OF HOMELAND SECURITY AND EMERGENCY PREPAREDNESS - LOUISIANA
STATE EMERGENCY OPERATIONS CENTER**

Objective 1: Emergency Operations Management**Capability Target 1.1: Mobilization****Capability Target 1.2: Direction and Control****Capability Target 1.3: Protective Action Recommendations****Capability Target 1.4: Protective Action Decisions for the Plume Phase****Capability Target 1.5: Protective Action Decision for the Post Plume Phase****Objective 2: Exposure Control****Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process****Objective 3: Alert and Notification****Capability Target 3.1: Communications****Capability Target 3.3: Emergency Information and Instructions for the Public and News****Objective 5: Operate****Capability Target 5.4: Traffic and Access Control**

In summary, the status of DHS/FEMA capability targets for this location are as follows:

- a. MET: 1.1, 1.2, 1.3, 1.4, 1.5, 3.1, 3.3, 5.4
- b. LEVEL 1 FINDING: None
- c. LEVEL 2 FINDING: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

Tensas Parish Emergency Operations Center**Objective 1: Emergency Operations Management****Capability Target 1.1: Mobilization****Capability Target 1.2: Direction and Control****Capability Target 1.4: Protective Action Decisions for the Plume Phase****Capability Target 1.5: Protective Action Decision Implementation for the Post Plume Phase****Objective 2: Exposure Control****Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process****Capability Target 2.2: Emergency Worker Exposure Control Management**

Objective 3: Alert and Notification**Capability Target 3.1: Communications****Capability Target 3.2: Alert and Notification of the Public****Capability Target 3.3: Emergency Information and Instructions for the Public and News****Objective 5: Operate****Capability Target 5.4: Traffic and Access Control**

In summary, the status of DHS/FEMA capability targets for this location are as follows:

- a. MET: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.1, 3.2, 3.3, 5.4
- b. LEVEL 1 FINDING: None
- c. LEVEL 2 FINDING: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

EAS Radio Station**Objective 3: Alert and Notification****Capability Target 3.2: Alert and Notification to the Public**

In summary, the status of DHS/FEMA capability targets for this location are as follows:

- a. MET: 3.2
- b. LEVEL 1 FINDING: None
- c. LEVEL 2 FINDING: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

Appendix A: Exercise Timeline

Location/Evaluator Name:		Timeline Date & Site: GGNS March 22, 2023					
Emergency Classification Level or Event	Time Declared by Utility	Time That Notification Was Received or Action Was Taken					
		LDEQ	GOSHEP State EOC	EOF	Tensas Parish EOC	JIC	
Unusual Event (UE)	0826	0827	0827	0826	0827	0840	
Alert	0916	0916	0918	0916	0917	0919	
Site Area Emergency (SAE)	0933	0933	0934	0933	0935	0933	
General Emergency (GE)	0954	1000	1002	1000	1002	1004	
Rad. Release Started			none				
Rad. Release Terminated			none				
Facility Declared Operational			0910	1005	0925	0919	
Declaration of State of Emergency					0935		
Exercise Terminated		1209	1205	1209	1155	1203	
Early Precautionary Action Decisions:	Siren/ Notification Type and Time:						
#1 0945 School Dismissal	1050				945	0945	
#2 1009 Hunt & Fish Camp					1009		
#3 _____							
#4 _____							
Protective Action Recommendations (PARs):	Time of Siren Activation:						
Evacuation Zones:	1050		1045	1026	1050		
Section I2, M+P Rest of EPZ					1130		
Evacuate 2 mile radius & 5 miles downwind, monitor/prepare remainder of EPZ. Affected sectors E, F, G							
I2, 8, 9 and 10							
EAS Messages and Times:	EAS Message Description:						
#1 Msg #: _____ and Time:	1055				1055		
#2 Msg #: _____ and Time:					1135		
#3 Msg #: _____ and Time:							
#r Msg #: _____ and Time:							
KI Administration Decision			N/A		1120		

Appendix B: Participating Organizations

Participating Organizations

Federal Organizations
Federal Emergency Management Agency
U.S. Nuclear Regulatory Commission
State Organizations
Louisiana Governor's Office of Homeland Security and Emergency Preparedness
Louisiana Department of Environmental Quality
Louisiana Louisiana Department of Health
Louisiana Department of Transportation and Development
Louisiana State Police
Louisiana State University Agricultural Center
Mississippi Emergency Management Agency
Mississippi State Department of Public Health – Division of Radiological Health
Risk Jurisdiction
Newellton Police Department
Tensas Parish Communications/Dispatch
Tensas Parish Emergency Management
Tensas Parish Fire Protection
Tensas Parish Hospital
Tensas Parish Office Homeland Security and Emergency Preparedness
Tensas Parish Police Jury President
Tensas Parish Public Information Office
Tensas Parish Schools
Tensas Parish Sheriff Office
Town of Newellton Mayor's Office

Private Organizations
Entergy Operations, Inc.
Grand Gulf Nuclear Station
KMVX Radio Station

Appendix C: Planning and Evaluation Team

Planning Team

Planners		
Title/Position	Name	Agency
Regional Assistance Committee Chair	Oscar Martinez	FEMA Region 6
Federal Planning Site Specialist Federal Planning Team Lead/Sr. Site Specialist	Misty Chance Elsa Lopez	FEMA Region 6 FEMA Region 6
State Planning Team Lead Environmental Scientist 3	Cliff Acosta	LDEQ
Licensee Planning Team Lead Emergency Preparedness	Carlos Dawson	Entergy, Inc

Evaluation Team

Team Leaders and Evaluators		
Venue/Location	Evaluation Team/Team Lead	Agency
GOHSEP State EOC	Linda Gee * Lisa Rink	FEMA Region 6 FEMA HQ
LDEQ Headquarters	Greg Voss *	FEMA Region 7
LDEQ Headquarters at the EOF	Tim Pflieger* Kevin Robinson	FEMA Region 6 FEMA Region 2
Joint Information Center	Alberto Sifuentes * Sam Williams	FEMA Region 9 FEMA Region 6
Tensas Parish Emergency Operations Center	Darren Bates* Melisa Ogrodnik Andrew Chancellor	FEMA HQ FEMA Region 6 FEMA Region 7
EAS Radio Station KMXH	Darren Bates*	FEMA HQ

Appendix D: Acronyms and Abbreviations

Acronym	Description
AAC	Accident Assessment Coordinator
CCO	Chief Communications Officer
CDE	Committed Dose Equivalent
DAC	Dose Assessment Coordinator
DRD	Direct Reading Dosimeter
EAS	Emergency Alert System
ECL	Emergency Classification Level
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	United States Environmental Protection Agency
EPC	Emergency Preparedness Coordinator
EPZ	Emergency Planning Zone
EW	Emergency Worker
FEMA	Federal Emergency Management Agency
FMT	Field Management Team
FTC	Field Team Coordinator
GE	General Emergency
GGNS	Grand Gulf Nuclear Station
GOHSEP	Governor's Office of Homeland Security
HOO	Headquarters Operations Officer
JIC	Joint Information Center
KI	Potassium Iodide
LPIO	Lead Public Information Officer
LA	Louisiana
LDEQ	Louisiana Department of Environmental Quality
LDH	Louisiana Department of Health
MEMA	Mississippi Emergency Management Agency
mRem	Millirem
MS	Mississippi
NRC	U.S. Nuclear Regulatory Commission
ORO	Off-site Response Organizations
OSF	Office of Family Support
OSL	Optically Stimulated Luminescent

Acronym	Description
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PAS	Protective Action Section
PIO	Public Information Officer
PPX	Plume Phase Exercise
PRD	Permanent Reading Dosimeter
R	Roentgen
RAC	Radiological Assessment Coordinator
RASCAL	Radiological Assessment System for Consequence Analysis
RCC	Reception Care Center
REP	Radiological Emergency Preparedness
RDO	Radiological Defense Officer
SAE	Site Area Emergency
SEC	LDEQ's Secretary's Designee
SEL	LDEQ Senior EOF Liaison
SEOC	State Emergency Operation Center
SMRAP	Southern Mutual Radiation Assistance Plan
SOP	Standard Operations Procedure
TED	Total Effective Dose
TLD	Thermoluminescent Dosimeter
TP	Tensas Parish
T/ACP	Traffic and Access Control Points
URI	Uniform RASCAL Interface



Appendix E: Extend of Play Agreement and Scenario

1: EMERGENCY OPERATIONS MANAGEMENT

1.1. Mobilization

- ❖ Capability Targets: Individuals with roles in support of emergency operations are identified, alerted, and mobilized in a timely manner. (NUREG-0654/FEMA-REP-1, Rev. 2: A.1, A.1.a, A.1.b, A.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, O.1)
- ❖ Locations: Louisiana State Emergency Operations Center (SEOC), Louisiana Department of Environmental Quality Headquarters (LDEQ HQ), Emergency Operations Facility (EOF), Joint Information Center (JIC), Tensas Parish Emergency Operations Center (EOC)
- ❖ Extent of Play
 - LDEQ players will be pre-staged at the Hampton Inn and Suites in Vicksburg, Mississippi and at LDEQ Headquarters in Baton Rouge.
 - Subject to scenario and time constraints, LDEQ will begin fully mobilizing as early as Unusual Event.
 - Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) will have limited participation.
 - The LDEQ Public Information Officer (PIO) and LDEQ PIO Support may be pre-deployed or en route to the JIC at the Mississippi Emergency Management Agency (MEMA) prior to receipt of the first message.
- ❖ Level 2 Findings – None
- ❖ Core Capabilities: Operational Coordination

1.2. Direction and Control

- ❖ Capability Targets: Individuals in leadership roles provide direction and control to the portion of the overall response effort for which they are responsible. (NUREG-0654/FEMA-REP-1, Rev. 2: A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, O.1)
- ❖ Locations: LDEQ HQ, Louisiana SEOC, LDEQ EOF, Tensas Parish EOC
- ❖ Extent of Play:
 - Offsite Response Organizations in Louisiana will not be evaluated for response to simulated events in Mississippi other than a nuclear power plant accident, such as WIPP or PRND related events.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; Environmental Response/Health and Safety



1.3. Protective Action Recommendations

- ❖ Capability Targets: Appropriate PARs are selected based on available information and other factors. (NUREG-0654/FEMA-REP-1, Rev. 2: D.4, J.7, J.8, J.8.b, J.9, O.1)
- ❖ Location: Louisiana SEOC, LDEQ EOF
- ❖ Extent of Play:
 - If the scenario does not warrant a discussion on protective actions for the protection of persons with disabilities and access/functional needs, then the criteria shall be accomplished through an interview with the evaluator.
 - In accordance with the State of Louisiana's policy, Potassium Iodide (KI) is not considered for the general public.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; Situational Assessment; Environmental Response/Health and Safety

1.4. Protective Action Decisions for the Plume Phase

- ❖ Capability Targets: Appropriate PADs are based on available information for the plume phase. (NUREG-0654/FEMA-REP-1, Rev. 2: D.1.b, D.4, J.6, J.7, J.8, J.8.b, J.10, J.10.a, J.10.b, J.11.c-g, O.1)
- ❖ Locations: Louisiana SEOC, Tensas Parish EOC
- ❖ Extent of Play:
 - If the scenario does not warrant a discussion on protective action decisions (including protective actions for persons with disabilities and access/functional needs, institutionalized persons, or schools), then the criteria shall be initiated through controller injects.
 - In accordance with the State of Louisiana's policy, KI is not considered for the general public.
 - Any controller injects to the Tensas Parish EOC concerning data outside the main scenario will not leave the Tensas Parish EOC so as not to interfere with Exercise play.
 - No PAR call will be conducted for any controller injected data with a Protective Action Recommendation that differs from the main scenario data so as not to interfere with Exercise play.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; Situational Assessment; Environmental Response/Health and Safety



1.5. Protective Action Decision Implementation for the Plume Phase

- ❖ Capability Targets: Implement decisions for those populations and areas subject to plume phase protective actions. (NUREG-0654/FEMA-REP-1, Rev. 2: A.4, C.2.a, G.1, J.11, J.11.a, J.11.b, J.11.c, J.11.e, J.11.g, O.1)
- ❖ Locations:
 - Louisiana SEOC, Tensas Parish EOC
- ❖ Extent of Play:
 - If the scenario does not warrant a discussion on protective action decisions for the protection of persons with disabilities and access/functional needs, then the criteria shall be accomplished through an interview with the evaluator.
 - If the scenario does not warrant a discussion on KI decisions, then the criteria will be accomplished through an interview with the evaluator.
 - In accordance with the State of Louisiana's policy, KI is not considered for the general public.
 - *Correction-on-the-spot* will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to ensure that exercise play is not interrupted. Correction-on-the-spot at the Tensas EOC is limited to areas outside the operations area (emergency worker briefings and issue and use of dosimetry in other rooms).
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; Environmental Response/Health and Safety

2. EXPOSURE CONTROL

2.1. Emergency Worker Exposure Control Decision-Making Process

- ❖ Capability Targets: A decision-making process involving consideration of appropriate factors and necessary coordination is used to ensure that an exposure control system is in place for emergency workers and includes the use of radioprotective drugs and procedures to authorize emergency exposures in excess of the PAGs. (NUREG-0654/FEMA-REP-1, Rev. 2: C.2.c, H.11, K.2, K.2.b, K.3, K.3.a, M.1.b, M.8, O.1)
- ❖ Locations:
Louisiana SEOC (LDEQ SECD located at the SEOC), LDEQ EOF, Tensas Parish EOC
- ❖ Extent of Play:
 - If the scenario does not warrant a discussion on the authorization to administer KI, then the criteria shall be accomplished through an interview with the evaluator.
 - If the scenario does not warrant a discussion on emergency worker (EW) exposure exceeding administrative limits, then the criteria shall be accomplished through an interview with the evaluator.
Note: Parish decision-makers receive recommendations for KI and EW exposure control from the Louisiana SEOC.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; Environmental Response/Health and Safety

2.2. Emergency Worker Exposure Control Management

- ❖ Capability Targets: Emergency workers manage radiological exposure and dose in accordance with the plans/procedures. (NUREG-0654/FEMA-REP-1, Rev. 2: C.2.c, H.11, H.11.b, K.2.b, K.3, K.3.a, M.1.b, O.1)
- ❖ Locations:
LDEQ EOF, Tensas Parish EOC
- ❖ Extent of Play:
 - TLD/OSLs will be available for all emergency workers. Simulated TLDs will be used in place of spare OSL or TLD badges when applicable.
 - LDEQ FMTs will not be utilized for this exercise. FMTs will be demonstrated with the 2023 W-3 SES Exercise.
 - *Correction-on-the-spot* will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to ensure that exercise play is not interrupted. Correction-on-the-spot at the Tensas EOC is limited to areas outside the operations area (emergency worker briefings and issue and use of dosimetry in other rooms).
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; Environmental Response/Health and Safety



3. ALERT AND NOTIFICATION

3.1. Communications

- ❖ Capability Targets: Communication processes, systems, and equipment are sufficient to support emergency operations. (NUREG-0654/FEMA-REP-1, Rev. 2: E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, O.1)
- ❖ Locations:
Louisiana SEOC, LDEQ HQ, LDEQ EOF, Tensas Parish EOC, JIC
- ❖ Extent of Play:
 - The LDEQ Contract Radiation Laboratory will not be evaluated in this exercise, and any communication with it will be simulated.
 - Communications to the Southern Mutual Radiation Assistance Plan (SMRAP) states, except for TX and AR, will be simulated.
 - The Headquarters Operations Officer (HOO) will remain located at LDEQ Headquarters and will not have a physical presence in Mississippi.
 - Any direct HOO interaction required for pre-deployed personnel will be handled through controller inject.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; Operational Communications

3.2. Alert and Notification of the Public

- ❖ Capability Targets: Alert and notification of the public is completed in a timely manner. (NUREG-0654/FEMA-REP-1, Rev. 2: E.2, E.4, E.5, F.3, O.1)
- ❖ Locations: KMOVX/KMLB; Tensas Parish EOC
- ❖ Extent of Play:
 - Out of Sequence – A Staff Assisted Visit (SAV) to the KMOVX/KMLB Radio Station will be performed at **TBD**.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Public Information and Warning



3.3. Emergency Information and Instructions for the Public and News Media

- ❖ Capability Targets: Accurate emergency information and instructions are provided to the public and the news media in a timely manner. (NUREG-0654/FEMA-REP-1, Rev. 2: E.2, E.4, E.5, G.1, G.2, G.3, G.3.a, G.4, G.5, O.1)
- ❖ Locations:
Louisiana SEOC; JIC; Tensas Parish EOC
- ❖ Extent of Play:
 - Utility and State representatives will demonstrate the ability to provide emergency information and instructions to the public consistent with the scenario.
 - News media will not be present; however, selected personnel will simulate the role of reporters asking questions during briefings.
 - Controllers will inject public phone team messages, media phone team messages and news briefing messages.
 - Rumor control will be demonstrated at Mississippi's JIC.
 - LDEQ PIO and Tensas Parish Spokesperson will participate in rumor control and handle any rumors specific to Louisiana.
 - All subsequent messages disseminated by the Louisiana SEOC will be announced by the GOHSEP representative.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Public Information and Warning

4. DETECT, MEASURE, SAMPLE, ANALYZE, AND ASSESS

4.5. Plume Phase Analysis and Dose Assessment

- ❖ Capability Targets: Dose assessment considers all available information including plant conditions, environmental conditions, field monitoring data, sample analysis results, and dose projection calculations. (NUREG-0654/FEMA-REP-1, Rev. 2: A.3, H.13, I.6, I.8, I.10, K.3, O.1)
- ❖ Locations: LDEQ EOF
- ❖ Extent of Play:
 - Utility and State assessors will demonstrate the ability to coordinate assessment activities in accordance with the scenario.
 - Back calculation of FMT data will not be demonstrated during this exercise. It will be demonstrated with the 2023 W-3 SES Exercise.
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Environmental Response/Health and Safety



5. OPERATE

5.4. Traffic and Access Control

- ❖ Capability Targets: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654/FEMA-REP-1, Rev. 2: H.12, J.8, J.8.b, J.10, J.10.a, J.11.c, J.11.e, J.11.f, J.14.d, J.14.e, M.1.b, O.1)
- ❖ Locations: Louisiana SEOC, Tensas Parish EOC
- ❖ Extent of Play:
 - This may be demonstrated out-of-sequence. One traffic and access control staff person will demonstrate knowledge of their roles and responsibility by discussion with the evaluator. The discussion will be at or near the EOC. If the scenario does not warrant this discussion at a location, the controller will inject data to stimulate a discussion.
 - A controller inject will be used to initiate the demonstration for this criterion. The inject will occur during the evacuation, and it will be on an evacuation route. It will trigger the re-routing of traffic, and the parish will coordinate this re-routing with the JIC in order to communicate the alternate route to evacuees that are leaving the area. Note that no impediment will actually occur; however, the situation and solution will be discussed as appropriate in the EOC. Clearing of the impediment will not occur prior to demonstration of the re-routing process that includes coordination with the JIC.
 - *Correction-on-the-spot* will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to ensure that exercise play is not interrupted. Correction-on-the-spot at the Tensas EOC is limited to areas outside the operations area (emergency worker briefings and issue and use of dosimetry in other rooms).
- ❖ Level 2 Findings: – None
- ❖ Core Capabilities: Operational Coordination; On-Scene Security, Protection, and Law Enforcement

SCENARIO NARRATIVE

The Grand Gulf Nuclear Station (GGNS) scenario begins at 0730. The Plant's initial conditions are 100% reactor power at steady state operations with gross output at 1491 MW.

At 0735, a loss of feedwater heating will lead to offgas activity trending upwards.

At 0800, fuel clad degradation and OffGas Pretreatment High High alarm will lead to the utility crew entering the OffGas Activity High Off-Normal Event Procedure (ONEP).

At 0815, it is expected that an **Unusual Event** will be declared. The Main Steam Isolation Valves will need to be closed to end the OffGas Activity.

At 0830, when the SCRAM threshold is reached, the reactor should SCRAM with a Loss of Coolant Accident occurring at the time of the SCRAM. The High Pressure Core Sprays will fail to open upon activation. The Division I Diesel Generator Feeder Breaker will fail to close. Drywell radiation levels will rise and the Division I Diesel Generator will fail to energize the Division I Buss leading to an **Alert** being declared.

At approximately 0930, containment radiation levels should rise above the 400 R/hr threshold for a **Site Area Emergency** declaration.

At approximately 1030, containment radiation levels should rise above the 7000 R/hr threshold for a **General Emergency** declaration.

By approximately 1045, the Standard PAR should be issued based on the plant conditions.

Once Division I Diesel Generator Feeder Breaker can be restored and the High Pressure Core Spray Injection Valves are opened manually exercise activities may be terminated

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