Final Exercise Report.

Hatch Nuclear Plant

Licensee: **Southern Nuclear Operating Company**

Exercise Dstc: **August 20,2003**

Report Date: **October 15,2003**

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION IV
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I. EXECUTIVE SUMMARY

On August 20, 2003. the Federal Emergency Management Agency (FEMA), Region IV, conducted a partial participation plume pathway emergency planning zone (EPZ) exercise for the Hatch Nuclear Plant. The purpose of this exercise was to assess the level of State and local preparedness in responding to a radiological incident at a nuclear power plant. The exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

The previous exercise at this site was conducted on March 14, 2001. The qualifying emergency preparedness exercise for the Hatch Nuclear Plant was conducted on October 8 and 9.1980.

FEMA wishes to acknowledge the efforts of the representatives of the State of Georgia and the Counties of Appling, Jeff Davis, Tattnall and Toombs, who participated in this exercise. Protecting the public health and safety is the full-time job of some of the participants and an additional assigned responsibility for others. Others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

Appling County had activated its Emergency Operations Center and emergency response organization in response to an Alert on April 2,2002 at Plant Hatch. Their response to the event and the demonstration during this exercise once again demonstrated the County's commitment to protecting the health and safety of the citizens of Appling County.

The State and local organizations demonstrated knowledge of their emergency response plans and procedures and appropriately implemented them. No Deficiencies were identified during this exercise. However, there were two Areas Requiring Corrective Action (ARCA) identified. The first ARCA was identified during the second media briefing when conflicting information was announced concerning the initial protective action decision. This ARCA was corrected during the third media briefing when correct information was provided. The second ARCA, concerning the monitoring of emergency workers and equipment in Jeff Davis County, was identified during the out-of-sequence demonstration for this exercise and was also corrected on the spot. No outstanding issues remain.

II. INTRODUCTION

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

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

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

- 'laking the lead in offsite emergency planning and in the review and evaluation of radiological emergency response plans (RERP) and procedures developed by State and local governments;

- Determining whether such plans and procedures can **be** implemented on the basis ofobservation and evaluation of exercises of the plans and procedures conducted by State and local governments;

- Responding to requests by the NRC pursuant to the Memorandum of Understanding between the NRC and FEMA (Federal Register, Vol. *58*, No. 176, September **14,1993);**

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

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

Representatives of these agencies serve on the **FEMA** Region IV Regional Assistance Committee (RAC), which is chaired by FEMA. Formal submission of **the** RERPs fur the Hatch Nuclear Plant **to** FEMA Region IV **by** the State **of** Georgia and involved local jurisdictions occurred on January **23,** 1980. Formal approval **ofthe** RERP was granted by FEMA on May 5,1981, under Title 44 CFR 350.

A partial participation plume pathway exercise was conducted on August 20, 2003. by FEMA Region IV to assess the capabilities **of** *State* and local emergency preparedness organizations in implementing their RERPs **and** procedures to protect the public health and safety during *the* plume phase of a radiological emergency involving the Hatch **Nuclear** Plant. The purpose of this report is to present the exercise results and findings on the performance **of** the offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented are based on the evaluations of the Federal evaluator team, with final determinations king made by the Chief Evaluator and Co-RAC Chairperson, and approved by the Regional Director.

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

- NUREG-0654/FEMA-REP-1, Rev. 1. "Criteria for Preparation and Evaluation **of** Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power **Plants,**" November 1980;

- **FEMA-** "Areas of Evaluation Methodology" April 25, 2002.

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

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

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the August 20, 2003, exercise to test the offsite emergency response capabilities in the area surrounding the Hatch Nuclear Plant.

A. Plume Pathway Emergency Planning Zone Description

The Hatch Nuclear Power Plant is located on the Altamaha Kivcr approximately ten miles north of Baxley, Georgia. The plume exposure pathway EPZ includes portions of Appling, Jeff Davis, Tattnall and Toombs Counties.

The land use within the IO-mile EPZ is primarily agricultural with a relatively low population density. The population of the 10-mile EPZ is estimated to be **8,394.** Although there are no major **parks,** recreational areas, or transportation facilities in the EPZ, the Altamaha River **is** a principal waterway that *is* suitable for navigation and recreation. There are 16 evacuation zones in the EPZ.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Watch Nuclear Power Plant exercise on **August** 20, 2003.

STATE OF GEORGIA

Department of Natural Resources
Bureau of Radiation Control
Georgia Emergency Management Agency

PARTICIPATING JURISDICTIONS

Appling County
Jeff Davis County
Tattnall County
Toombs **County**

PRIVATE AND VOLUNTEER ORGANIZATIONS

Meadows **Regional** Medical Center
Meadows Regional Medical Center Emergency Medical Services
Southeastern Chapter of the American **Red** Cross

C. Exercise Timeline

Table I. on the following page, presents the time at which key events and activities occurred during the Hatch Nuclear Plant exercise on August 20, 2003. Included are actual times notifications were made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: August 20, 2003 - Hatch Nuclear Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken							
		SOC	FEOC	DOSE	ENC	APPLING COUNTY	JEFF DAVIS COUNTY	TATTNALL COUNTY	TOOMBS COUNTY
Unusual Event	0856			0856	0912	0906	0900	0900	0910
Alert	0902	0920		0914	0916	0914	0914	0914	0913
Site Area Emergency	1005	1005	1005	1005	1013	1009	1018	1015	1012
General Emergency	1117	1117	1117	1117	1119	1119	1146	1128	1130
Simulated Rad. Release Started	1110	1110	1110	1210	1142	1129	1146	1110	1128
Simulated Rad. Release Terminated	End Ex	End Ex	End Ex		End Ex	End Ex	End Ex	End Ex	End Ex
Facility Declared Operational		0925	0950			0920	0937	1053	1013
Declaration of State of Emergency		N/A	0942			N/A	1047	N/A	N/A
Exercise Terminated		1223	1223			1223	1230	1226	1222
Early Precautionary Actions: School relocation/evacuation Animals on stored feed and water			1045			0930	N/A	N/A	1035
1st Protective Action Decision **Evacuate Zones:** A, C-5, F-10 and G-10 **Shelter Zones:** None			1045			1045	1042	1045	1045
1st PNS:			1055			1055	1055	1057	1056
1st Supplementary Message						1023	1045	N/A	N/A
2nd Protective Action Decision **Evacuate Zones:** Add Zone D-5 **Shelter Zones:** None			1140			1135	1140	1140	1140
2nd PNS:			1150			1150	1145	1150	N/A
2nd Supplementary Message			N/A			1203	N/A	N/A	N/A
3rd Protective Action Decision **Evacuate Zones:** Add Zone B-5, E-5 and H-10 **Shelter Zones:** None			1210			1210	1212	1208	1205
3rd PNS:			1220			1210	N/A	N/A	N/A
3rd Supplementary Message						1223	1220	1220	N/A
KI Administration Decision: Do not ingest			1220			1210	N/A	1221	N/A

N/A County had no involvement or concurrence during this action

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings ofthe evaluation of all jurisdictions and functional entities, which participated in the August 20, 2003, exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Hatch Nuclear Plant.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in exercise criteria contained in Evaluation Area Methodology, dated April 25, 2002. Detailed information on the exercise criteria and the extent-of-play agreement **used** in this exercise are found in Appendix *3* of this report.

A. Summary Results of Exercise Evaluation - Table *2*

The matrix in Table 2, presents the status of all exercise criteria scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise criteria are listed by number. 'The demonstration status of those criteria is indicated by the use ofthe following letters:

M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)

D - Deficiency assessed

A - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)

N - Not Demonstrated (Reason explained in Subsection B)

C - Credit for actual events

B. Status of Jurisdictions Evaluated

I'his subsection provides information on the evaluation nfeach participating jurisdiction and functional entity, in an issues only **format.** Presented **below** is a definition ofthe terms used in this subsection relative to criterion demonstration status.

Met - Listing ofthe demonstratcd exercise criteria under which no Deficiencies **or** ARCAs **were** assessed during **this** exercise and under which no ARCAs assessed during prior exercises remain unresolved.

- **Deficiency** - Listing ofthe demonstrated exercise criterion under which **one or more** Deficiencies was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.

- **Area Requiring Corrective Actions** - Listing of the demonstrated exercise criterion under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises that remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.

- **Not Demonstrated** - Listing of the exercise criterion which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.

- **Prior ARCAs - Resolved** - Descriptions of ARCAs assessed during previous exercises which were resolved in this exercise and the corrective actions demonstrated.

- **Prior ARCAs - Unresolved** - Descriptions of ARCAs assessed during prior exercises which were not resolved in this exercise. Included is the reason the ARCA remains unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

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

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

- An **ARCA** is defined in FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, *to* adversely impact public health and safety."

FBMA has developed a standardized system for numbering exercise issues (Deficiencies and ARCAs). This system is used to achieve consistency in numbering exercise issues among **FEMA** Regions and site-specific exercise reports within each Region. It is also used *to* expedite tracking of exercise issues on a nationwide basis.

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

- **Plant Site Identifier** - A two-digit number corresponding to the Utility Billable Plant Site Codes.

- **Exercise Year - The** last two digits of the **year *the*** exercise was conducted.

- **Criterion Number - A** number, alpha, number combination corresponding to the criterion number in the Evaluation Area Methology.

- **Issue Classification Identifier** - (D = Deficiency. **A** = ARCA). Only Deficiencies and ARCAs are included in exercise reports.

- **Exercise Issue Identification Number - A** separate two (or three) **digit** indexing number assigned to each issue identified in the exercise.

Table 2. Summary of Exercise Evaluation

DATE AND SITE: August 20, 2003 – Hatch Nuclear Plant

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

LEGEND: **M = Met** **D = Deficiency** **A = ARCA** **(A)M = ARCA identified -- corrected during exercise**

1. STATE OF GEORGIA

1.1 State Operations Center

The State Operations Center (SOC) was well equipped and able to perform the function of direction and control until the Forward Emergency Operations Center was operational Communication **links** were established and maintained with the plant, counties and FEOC.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

e **PRIOR ARCAs - UNRESOLVED:** NONE

1.2 Forward Emergency Operations Center

The Forward Emergency Operations Center (FEOC) is co-located with **the** Emergency News Center (ENC). The facility was staffed with a highly competent and professional staff. The Governor's Authorized Representative (GAR) oversaw **ail** activities and the Georgia Emergency Management Agency (GEMA) Director of Operations effectively managed the emergency response. All protective action decisions **(PAD)** were effectively coordinated within the FEOC and with the risk counties. The PADs were disseminated **to** the public in a timely manner.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

1.3 Dose Assessment

Staff from the Georgia Department of Natural Resources (DNR) performed dose assessment, They successfully demonstrated the ability to make timely analysis of the radiological consequences of an accident at the Hatch Nuclear Plant and to make timely recommendations to GEMA for the protection of the public. The Radiation Emergency Coordinator (KEC) from DNR worked well with a professional staff and was especially effective in briefing the GAR. FEOC Chief, and the GEMA staff.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

1.4 Emergency Operations Facility

The Emergency- Operations Facility (EOF) for the Hatch Nuclear Plant, located on-site, is an excellent facility from which all participating organizations can effectively manage emergency operations. Communications and coordination between and among the State officials at the EOF and with representatives of the utility operator were exemplary. State officials were well trained, knowledgeable. followed applicable procedures, and overall; they performed their respective responsibilities in an efficient and professional manner.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

1.5 Emergency News Center

Public Affairs personnel from GEMA, DNR, Toombs County, an3 the Southern Nuclear Operating Company jointly staffed the Emergency News Centcr (ENC). Appling, Jeff Davis, and Tattnall Counties also have assigned public affairs personnel. but they participated from their own Emctgcncy Operations Center (EOC). The ENC is an outstanding new facility and is equipped with modern computer and communications technology. All ENC staff demonstrated outstanding professionalisnr arid teamwork skills. 'Three media briefings were conducted and GEMA prepared and distributed six news releases. The ENC rumor control staff responded to 127 telephone calls in less than four hours. While the media briefings were conducted during a period of rapidly changing plant conditions, accurate and timely information **was** disseminated with the exception of the first PAD. During the second media briefing, GEMA and **utility** spokespersons provided incomplete and confusing information concerning this PAD. This is described below. Complete and correct information concerning protective actions was provided during the subsequent press briefing.

a. MET: Criteria 1.a.1, 1.b.1, 1.d.1 and 1.e.1.

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:**

CRITERION: 31-03-5.b.1-A-01

CONDITION: The Emergency News Center (ENC) staff provided incomplete and confusing information to the media and public concerning the first protective action decision. Specifically, a protective action decision was made by the State and affected counties at 1045 to evacuate Zones **A, *C-5,*** F-10, and 63-10. However, in the second media briefing that began at 1046, the utility's Public Information Director (PID) initially indicated that he just received information that Zones **A** and C-5 were being evacuated. A few minutes later, at 1052, the GEMA Public Information Officer (PIO) stated that he thought it **was** only the schools in Zones **A** and C-5 that were being evacuated and not the general public. Later in the same briefing, at 1111, the Toombs County PIO did indicate that the public from Zone **A was** indeed being evacuated. The **GEMA** PIO then stated, at approximately 1115, that Zones F-10 and G-10 were **also** affected, **but** he did not know if they were **being** evacuated. There was no further mention of Zone C-5 during the second media briefing that ended at 1119.

POSSIBLE CAUSE: The protective action decision was made just **as** the second media briefing **was** beginning. *An* adequate system was not in place to provide accurate updated information to the spokespersons while the briefing was ongoing. They were receiving information, but it was fragmented and it was not clear **to** the **spokespersons** whether the information concerned recommendations

that were still being considered or if the final protective action decision had been made.

REFERENCE: NUREG-0654, E.5., 7., G.3.a., G.4.a.,b.,c.

EFFECT: The incomplete and conflicting information provided during the second media briefing could have caused confusion for the media and ultimately the public as to what actions they were king instructed to take.

RECOMMENDATION: Improve the system or method for providing accurate and timely information ***to*** the spokespersons during media briefings. It is imperative that any information they are provided during the briefing is accurate and clear especially if it concerns protective action recommendations and decisions.

CORRECTIVE ACTION DEMONSTRATED: The GEMA PIO provided accurate and complete information for the second protective action decision to evacuate Zones A. C-5, D-5, F-10 and SI-I0. He provided this information **at *the*** beginning **of** the third media briefing that started **at** 1150. This corrected the Area Requiring Corrective Action.

d. **NOT DEMONSTRATED:** NONE

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

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

2. RISK JURISDICTIONS

2.1 APPLING COUNTY

2.1.1 Emergency Operations Center

The EOC is spacious and organized to facilitate a full complement of staff and emergency support functions (ESF). Leadership in the EOC was apparent and the staff **worked** well as **a** team. The Mayor and Chairman of the County Commissioners were active players during the exercise. The Emergency Management Agency (EMA) Director gave definitive guidance *to* the staff and required frequent feedback from all participants. The EMA Director **was** very proactive in carrying out his duties. Communication systems worked well throughout the exercise.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.1.2 Traffic Control Points

Traffic control point (TCP) activities were dernonstrated through interview with a sheriffs deputy. The deputy demonstrated **a** thorough understanding of radiological exposure control was equipped with the appropriate dosimetry and had a good working knowledge of all aspects **of** TCP responsibilities. The deputy's duties include mitigating highway impediments, availability of traffic cones, signs and barricades, knowledge of the locations of the decontamination site and reception center.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.1.3 Protection Actions for Schools

Appling County has one.public elementary school located within the 10-mile EPZ. A detention facility for juveniles is also located in the 10-mile EPZ. This State operated facility manages the evacuation of its **students** with Appling County providing assistance if requested. During the exercise, the elementary school was evacuated at Alert. The school office staff **was** able ***to*** quickly communicate with the **rest** of the staff regarding the evacuation and buses for removing children and **staff** from the school. The staff member was **very** knowledgeable concerning **the** steps needed to evacuate the school's students and **staff** in the **event** of **an** emergency.

a. **MET:** Criterion 3.c.2.

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.1.4 River Clearing

Two law enforcement officers from Georgia DNR assisted in identifying *the* location *of* warning signs at two public boat landings (PBL). The officers demonstratcd their knowledge and ability tu implement river warning procedures and individual radiological protection procedures. Both PBLs had warning signs with a listing of radio and television stations, which broadcast emergency messages. The signs also stated that boaters may be warned in person by DNR agents. Both officers dcmonstratcd. through interview, the use of dosimetry and an understanding of radiological exposure control, The DNR agents were very professional and were well prepared to implement the river clearing activities.

a. **MET:** Criteria 3.a.l and 5.a.3.

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2 JEFF DAVIS COUNTY

2.2.1 Emergency Operations Center

The effective execution of notification procedures allowed for the rapid activation of the EOC. Active participation by the Chairman of the County Commission. County Administrator-and Mayor of Hazelhurst, and City and County department chiefs set the tone for a highly professional EOC operation. The senior management team was briefed on a recurring basis; involved functional representatives in *the* process, and facilitated interagency coordination in preparation for PADs. All participants displayed a positive attitude as they carried out their functions and sought improvements to their procedures.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2.2 Traffic Control Points

An officer from the County Sheriffs Department successfully demonstrated knowledge **of** TCP procedures and individual radiological protection during **an** interview at the EOC. The officer **was** conversant in the use **of** dosimetry, requirements for recording and reporting readings, and applicable turn-back values. The **Jeff** Davis Public Works Department was available through 911 to provide assistance in removal nfimpedimenis arid to fill harrier requirements.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2.3 Reception and Congregate Care

The reception and congregate care center **was** well managed. The staff **include:** American Red Cross *(ARC)* volunteers, County Department of Health and staff of the Jeff Davis Junior arid High Schools. The staffs, both paid and volunteer, were equipped with the appropriate dosimetry and instructions **for** use and recording. Everyone was knowledgeable of the roles and responsibilities required by the task **at** hand and **performed** those tasks in a professional manner. The reception and sheltering facility was well laid **out** with appropriate equipment **available** and was set **up** to prevent cross contamination.

a. **MET:** Criteria 1.b.1, 1.c.1, 3.a.1, 6.a.1 and 6.c.1.

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2.4 Monitoring and Decontamination of Emergency Workers and Equipmerat

Emergency worker vehicle monitoring and decontamination was well demonstrated. Emergency workers doing the monitoring had the appropriate dosimetry, turnout gear, equipment, knowledge and training to do the job well. The lay out ofthe nionitoring and decontamination area was well thought out and provided for good cross contamination control. The emergency worker monitoring aspect required additional coaching and re-demonstration.

a. **MET:** Criteria 1.e.1, 3.a.1 and 6.b.1

b. **DEFICIENCY:** NONE

d. **AREAS REQUIRING CORRECTIVE ACTION:**

CRITERION: 31-03-6.a.1-A-02

CONDITION: The driver and passenger of a known contaminated emergency vehicle were allowed to exit the vehicle. which was now outside the hot zone, without first **having** any personal monitoring.

POSSIBLE CAUSE: Unfamiliarity with emergency worker vehicle occupant monitoring procedures.

REFERENCE.: (cite the specific NUREG-0654 element, regulation, etc.): NUREG-0654. J.10.h; 5.12; K.5.a)

EFFECT: If an emergency worker disembarked his/her contaminated vehicle without their feet being monitored there would be no way to prevent possible contamination ofthe location(s) where the emergency workers walked. Contamination in the walking area where all personnel would disembark their vehicles would then cause all emergency workers exiting vehicles to become contaminated.

RECOMMENDATION: Provide initial and refresher training on a more **frequent** basis to ensure that the individuals doing the monitoring are knowledgeable of cross contamination controls and occupant monitoring techniques.

CORRECTIVE ACTION DEMONSTRATED: **The** process was halted, what was being done incorrectly was explained and why it was incorrect. After coaching, the emergency workers re-demonstrated the process and were able to complete the demonstration in **a** proficient and professional manner.

a. **NOT DEMONSTRATED:** NONE

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

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

2.3 TATTNALL COUNTY

2.3.1 Emergency Operations center

The County Emergency Management Director and Chief of Operations coordinated operations in **this** the EOC. They involved a competent and supportive staff in the decision making process. The staff consistently coordinated with the State and other EPZ counties in the formulation and implementation of PADs and the PIO interacted with the. ENC. The State and plant representatives provided vital support to the EOC operation. The WebEOC, periodic briefings, **and** consistent posting of **status** boards kept the staff informed of developments. Alert and mobilization of the staff was accomplished smoothly. 'The EOC was fully staffed at 1053. County Sheriff's Department reservists provided security. This is a spacious and well-equipped facility **that supported** this well run emergency response operation.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.3.2 Traffic Control Points

Three deputies from the County Sheriff `s Department professionally demonstrated TCPs ***at*** their individual locations. The Deputies were aware of KI procedures, their turn-back **values** and who to call/what to do if they reached **or** exceeded the turn-back values. 'they were also knowledgeable of road impediment removal, reception and congregate care locations **and** where to find equipment **if** needed.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4 TOOMBS COUNTY

2.4.1 Emergency Operations Center

The EOC staff continues *to* provide efficient emergency management services. The Operations Officer provided consistent direction and control, insuring the safety of evacuees and residents alike. Information was promptly posted for the staff to see. Accurate and timely information was provided to citizens despite equipment limitations *for* the PIO. Both city and county governments were **represented** in the EOC, which is reflective of 'Toombs County's overarching commitment to the emergency management program. Early precautionary actions included school evacuation, river clearance and assistance to the special needs population. PADS were appropriate and promptly implemented.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.2 Traffic Control Points

The EOC demonstrated implementation of TCPs by interview. The **deputy** for Toombs County talked **through** the selection and dispatch of TCPs in the county. The discussion **also** included **use *of*** equipment necessary *to* facilitate access control (barriers, cones, etc). Communications between the TCP and the EOC **were** managed through *the* use of a

sheriff's department radio in the EOC. TCP locations **were** identified by the deputy and were utilized by staff for potential crew deployment. The TCP emergency **workers** were issued dosimetry and KI as required. The radiological office provided detailed instructions to teams **prior** to deployment.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.3 River Clearance

Toombs **County** demonstrated implementation **of** alert and notification of boaters and fisherman along the Altamaha River. **A** DNR ranger was dispatched to the EOC where he picked **up** a dosimetry kit and ***got*** a radiological briefing prior to king dispatched *to* the river. The ranger periodically checked his dosimeter, recorded the reading and radioed into **the** FEOC. The ranger informed all boaters and fishermen he encountered there was a drill **in** progress and the river had been closed to traffic. The ranger was **professional** and answered all questions concerning the purpose and use of his radiological protective gear.

a. **MET:** Criteria 3.a.1 and 5.a.3.

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.4 Protective Actions for Schools

The County Board of Education demonstrated the ability to implement protective actions for schools. **At** the **Site Area** Emergency, Toombs County Elementary School, located inside the **IO-mile** EPZ, was ordered to evacuate to Toombs County Middle School.

Transportation was arranged for the students, the Middle School was notified of the arrival of the extra students and was told **io** prepare their facility. Within 30 minutes the students had arrived and were sheltered at Toombs County Middle School.

a. **MET:** Criterion 3.c.2.

b. **DEFICIENCY:** NONE

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

f. **NOT DEMONSTRATED:** NONE

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

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

2.4.5 Medical Services Drill (MS-1)

The Meadows Regional Medical Center emergency room (ER) staff and Emergency Medical Services (EMS) crew participated in this exercise to demonstrate the ability *to* treat a contaminated, injured individual. The medical center **was** prepared to receive, monitor, decontaminate **and** treat the patient. The transfer of the patient was expeditious and all appropriate infomation **was** relayed to the ER staff. The doctor established priorities for the treatment and decontamination of the patient. Monitoring and decontamination procedures were appropriate, samples **were** taken and the ER staff functioned well as team. Exit procedures were appropriately demonstrated. Another health physicist, who remained outside, surveyed the EMS personnel arid knew where to send them if they or the ambulance were contaminated. All individuals, EMS and medical center knew their roles and responsibilities, and performed them in an efficient and professional manner.

a. **MET:** Criteria 1.e.1, 3.a.1 and *4.d.l.*

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

3. SUMMARY OF AREAS REQUIRING CORRECTIVE ACTION

3.1 Issued 2003

3.1.1 31-03-5.b.1-A-01 Emergency News Center	CONDITION: The Emergency News Center (ENC) staff provided incomplete and confusing information to the media and public concerning the first protective action decision. Specifically, a protective action decision was made by the State and affected counties at 1045 **to** evacuate Zones **A.** C-5. F-10, and G-10. However, in the second media briefing that began at 1046, the utility's Public Information Director (PID) initially indicated that he just received information that Zones **A** and C-5 were being evacuated. **A** few minutes later, at 1052, the GEMA Public Information Officer (PIO) stated that he thought it was only the schools in Zones **A** and C-5 that were being evacuated and not **the** general public. Later in the same briefing, at 1111 the Toombs County PIO did indicate that the public from Zone **A** was indeed being evacuated. The GEMA PIO then stated, at approximately 1115, that Zones F-10 and G-10 were also affected, but he did not know ***if*** they were being evacuated. There was no further mention of Zone C-5 during the second media briefing that ended at 1119. **POSSIBLE CAUSE:** The protective action decision was made **just** as the second media briefing was beginning. ***An*** adequate system was not in place to provide accurate updated information ***to*** the spokespersons while the briefing was ongoing. They were receiving information, but it was Fragmented and it was not clear to the spokespersons whether **the** information concerned recommendations that were still being considered or **if** the final protective action decision had been made. **REFERENCE:** NUREG-0654, E.5., 7., G.3.a., G.4.a.,b.,c.

		EFFECT: The incomplete and conflicting information provided during the second media briefing could have caused confusion for the media and ultimately the public as to what actions they were being instructed to take. **RECOMMENDATION:** Improve the system or method for providing accurate and timely information to the spokespersons during media briefings. It is imperative that any information they are provided during the briefing is accurate and clear especially if it concerns protective action recommendations and decisions. **CORRECTIVE ACTION DEMONSTRATED:** The GEMA PIO provided accurate and complete information for the second protective action decision to evacuate Zones **A,** C-5, D-5, F-10 and G-10. He provided this information at the beginning of the third media briefing that started at 1150. This corrected the Area Requiring Corrective Action.
3.1.2	**31-03 –6.a.1-A-02 Jeff Davis County Monitoring and Decontamination of Emergency Workers and Equipment**	**CONDITION:** The driver and passenger of a known contaminated emergency vehicle were allowed to exit the vehicle. which was now outside the hot zone, without first having any personal monitoring. **POSSIBLE CAUSE:** Unfamiliarity with emergency worker vehicle occupant monitoring procedures. **REFERENCE:** (cite the specific NUREG-0654 element, regulation, etc.): NUREG-0654, J.10.h; J.12; K.5.a) **EFFECT:** If an emergency worker disembarked his/her contaminated vehicle without their feet k i n g monitored there would be no way to prevent possible

contamination of the location(s) where the emergency workers walked. Contamination in the walking area where all personnel would disembark their vehicles would then cause all emergency workers exiting vehicles to become contaminated.

RECOMMENDATION: Provide initial and refresher training on a more frequent basis to ensure that the individuals doing the monitoring are knowledgeable of cross contamination controls and occupant monitoring techniques.

CORRECTIVE ACTION DEMONSTRATED: The process was halted, what was king done incorrectly was explained and why it was incorrect. After coaching, the emergency workers re-demonstrated the process and were able to complete the demonstration in a proficient and professional manner.

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

ARC	American Red Cross
ARCA	Area Requiring Corrective Action
CFR	Code of Federal Regulations
DHHS	Department of Health and Human Services
DNR	Department of Natural Resources
DOC	Department of Commerce
DOE	Department of Energy
DOI	Department of the Interior
DOT	Department of Transportation
DRD	Direct Reading Dosimeter
EAS	Emergency Alert System
ECL	Emergency Classification Level
EEM	Exercise Evaluation Methodology
EMA	Emergency Management Agency
EMS	Emergency Medical Services
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ER	Emergency Room
ESF	Emergency Support Functions
FAA	Federal Aviation Agency
FCC	Federal Communications Commission
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FEOC	Forward Emergency Operations Center
FR	Federal Register
GAR	Governor's Authorized Representative
GE	General Emergency
GEMA	Georgia Emergency Management Agency
GM	Guidance Memorandum
KI	Potassium Iodide

NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980*
NWS	National Weather Service
OEM	Office of Emergency Management
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guide
PAO	Public Affairs Official
PAR	Protective Action Recommendation
PBL	Public Boat Landings
PID	Public Information Director
PIO	Public Information Officer
PNS	Public Notification System
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
REC	Radiation Emergency Coordinator
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SAE	Site Area Emergency
SOC	State Operations Center
TCP	Traffic Control Point
TLD	Thermoluminescent Dosimeter
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS

Following is a list of personnel who evaluated the Hatch Nuclear Plant exercise on August 20, 2003. The organizations represented are indicated **by** the following abbreviations:

DOT	- Department of Transportation
FDA	- Food and Drug Administration
FEMA	- Federal Emergency Management Agency
ICF	- ICF Consulting, Inc.
NRC	- Nuclear Regulatory Commission

EVALUATION SITE	EVALUATOR	ORGANIZATION
STATE OF GEORGIA		
Stale Operations Center	Don Cornell	**FEMA**
	Bernie Gunnels	BOT
Forward Emergency Operations Center	Larry Robertson	FEMA
	James Purvis	FEMA-HQ
Emergency News Center	Norman Valentine	FEMA-R7
Dose Assessment	Bernie Hannah	ICF
Emergency Operations Facility	Robert Trojanowski	NRC
APPLING COUNTY		
Emergency Operations Center	Eddie Hickman	FEMA
	Tom Tmut	FDA
Traffic Control Points	Tom Trout	**FDA**
Protective Actions **For** Schools	**Tom** Trout	FDA
River Clearing	Tom Trout	**FDA**
JEFF DAVIS COUNTY		
Emergency Operations Center	Bill Larrabee	ICF
	Mark Pittman	**FEMA**
Reception and Congregate Care	Helen Wilgus	FEMA

EVALUATION SITE	EVALUATOR	ORGANIZATION
Emergency Worker Decontamination	Helen Wilgus	FEMA
Traffic Control Points	Mark Pittman	FEMA
TATTNALL COUNTY		
Emergency Operations Center	Robert Perdue Wanda Gaudet	FEMA FEMA-R1
Traffic Control Points	Wanda Gaudet	FEMA-R1
TOOMBS COUNTY		
Emergency Operations Center	Obbie Robinson Kevin Keyes	FEMA FEMA-R6
Traffic Control Points	Kevin Keyes	FEMA-R6
Protective Actions for Schools	Kevin Keyes	FEMA-R6
River Clearing	Kevin Keyes	FEMA-R6
Medical Service Drill (MS-I)	Helen Wilgus	FEMA

APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

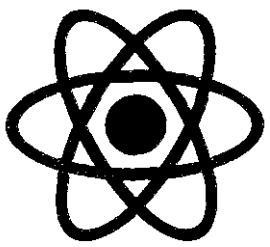
This appendix lists the exercise criteria scheduled for demonstration at the Hatch Nuclear Plant exercise on **August** 20. 2003, and the extent-of-play agreement approved **by** FEMA Region IV.

A. Exercise *Criteria*

Following are the specific REP criteria scheduled for denionstration during this exercise.

(Final Report Only)

PLANT EDWIN I. HATCH



FEMA EVALUATED EXERCISE

August 20,2003

Extent of Play Agreement

Other than the exceptions described in this Extent of Play Agreement, exercise activities demonstrated for evaluation will be based on the Georgia Radiological Emergency Base Plan, the respective site-specific plan (Annex A), local county plans and appropriate Standard Operating Procedures.

It is requested that any issue **or** discrepancy arising during exercise play be corrected immediately, at all player locations, if it isn't disruptive to exercise play and if it is mutually agreeable to both the controller and evaluator.

1. EMERGENCY OPERATIONS MANAGEMENT

1.a – Mobilization:

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

Extent of **Play**

Responsible OROs should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification. and contact, alert, and mobilize key emergency personnel in a timely manner. Responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. Pre-positioning of emergency personnel is appropriate, in accordance with the extent-of-play agreement, at those facilities located beyond **a** normal commuting distance from the individual's duty location or residence. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the extent-of-play agreement.

All activities must **be** based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- State personnel will be pre-positioned. Response to the FEOC will be, as much as possible, scenario driven. Appling, **Jeff** Davis, Tattnall and Toombs Counties will use normal call in procedures to their respective EOCs as the scenario dictates.

1.b – Facilities:

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

Extent of Play

Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations).

Facilities must be set up based on the ORO's plans and procedures and demonstrated as they would be used in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- This evaluation will establish the baseline for these facilities.

1.c – Direction and Control :

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

Extent of Play

Leadership personnel should demonstrate the ability to carry out essential functions of the response effort, for example: keeping the staff informed through periodic briefings and/or other means, coordinating with other appropriate OROs, and ensuring completion of requirements and requests.

All activities associated with direction and control must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise noted above or indicated in the extent-of-play agreement.

- Direction and Control will occur through the State Operations Center (SOC) in Atlanta until the Forward Emergency Operations Center (FEOC) in Vidalia, Toombs County, Georgia is operational.

1.d – Communications Equipment:

Criterion 1.d.1: At least two communication 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)

Extent of Play

OROs will demonstrate that a primary and at least one backup system are fully functional at the beginning of an exercise. If a communications system or systems are not functional, but exercise performance is not affected, no exercise issue will be assessed. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exists. The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system, as negotiated in the extent-of-play agreement.

All activities associated with the management of communications capabilities must be demonstrated based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise noted above or in the extent-of-play agreement.

- In agreement

1.e – Equipment and Supplies to Support Operation:

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)

Extent of Play

Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged.

All instruments, should be inspected, inventoried, and operationally checked before each use. Instruments should be calibrated in accordance with the manufacturer's

recommendations. Unmodified CDV--700 series instruments and other instruments without a manufacturer's recommendation should be calibrated annually. Modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration should be on each instrument or calibrated frequency can be verified by other means. Additionally, instruments being used to measure activity should have a range of readings sticker affixed to the side of the instrument. The above considerations should be included in 4.a.1 for field team equipment; 4.c.1 for radiological laboratory equipment (does not apply to analytical equipment); reception center and emergency worker facilities' equipment under 6.a.1; and ambulance and medical facilities' equipment under 6.d.1.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimetry should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.

Dosimetry should be inspected for electrical leakage at least annually and replaced, if necessary. CDV–138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitied in the Annual Letter of Certification, and/or through a staff assistance visit.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway EPZ.

Quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise, provided in the Annual Letter of Certification submission, and/or verified during a Staff Assistance Visit. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, the ORO may produce *a* letter from a certified private or State laboratory indicating that the KI supply remains potent, in accordance with U.S. Pharmacopoeia standards.

Ai locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described.

All activities must he based on ihe ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- Practice **or** simulated TLDs may be furnished to the emergency workers and KI will he simulated for State and County emergency workers. Traffic and access control vehicles, harriers, traffic cones and signs, etc. are available and their availability can be described by the County **EMA** Director **or** his designee. The State **of** Georgia does not use any Civil Defense dosimeters. Ail self reading dosimeters are commercially procured.

2. PROTECTIVE ACTION DECISION MAKING

2.a – Emergency Worker Exposure Control:

Criterion 2.a.I: OROs use a decision making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is **in** place **for** emergency workers including provisions to authorize radiation exposure in excess **of** administrative limits or protective action guides. **(NUREG-0654, K.4, J.10.e, f)**

Extent of Play

OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans arid procedures.

Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of preauthorized levels and to the number of emergency **workers** receiving radiation dose above pre-authorized levels.

As appropriate, OROs should demonstrate the capability to make decisions on the distribution **and** administration of KI as **a** protective measure, based on the ORO's pian and/or procedures or projected thyroid dose compared with the established Protective Action Guides (PAGs) for KI administration.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otheiwise indicated in the extent.-of-play agreement.

- In agreement

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

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

Extent of Play

During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should deinonstrate the capability to use appropriate means, described in the plan and/or proccdures. to develop protective action recommendations (PAR) for decision-makers based on available information and recommendations from the licensee and field monitoring data, if available

When release and meteorological datu are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAG to which they will he compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than **a** factor of 10 between projected doses by the licensee and the ORO should he discussed with the licensee with respect to the input ***data*** and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability lo use any additional data to refine projected doses and exposure rates and revise the associated PARs.

All activities must he based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- In agreement

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

Extent of Play

Offsite Response Organizations (OROs) should have the capability to make both initial and subsequent PADs. They should dernonstrate the capability ***to*** make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility arid ORO staff.

The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. The decision

makers should demonstrate the capability to change protective actions as appropriate based on these projections.

If the ORO has determined that KI will be. used as *a* protective measure for the general public under offsite plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI *as* a protective measure for the general public to supplement sheltering and evacuation. This decision should be based nn the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision making process should involve close coordination with appropriate assessment and decision-making staff.

If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.

All decision-making activities by ORO personnel must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- In agreement

2.c –Protective Action Decisions for Protection of Special Populations:

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

Extent of Play

Usually, it is appropriate to implement evacuation in areas where doses *are* projected to exceed the lower end of the range of PAGs, cxccpt for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are: weather conditions, shelter availability, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.
Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts of emergency conditions that are expected to or may necessitate protective actions for students. Contacts with public school systems/districts must be actual.

In accordance with plans and/or procedures, OROs and/or officials of public school systems/districts should demonstrate the capability to make prompt decisions on protective actions for students. Officials should demonstrate that the decision making

process for protective actions considers (that is, either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location **of** students at the time (for example, whether the students are still at home, en route to the school, or at the school).

All decision-making activities associated with protective actions, including consideration of available resources, for special population groups must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- In agreement

Radiological Assessment and decision-Making for the Ingestion Pathway (2.d)

- **(Criterion 2.d.1)** This Evaluation **Area** will not be demonstrated

Radiological assessment and Decision-Making Concerning Relocation, Re-entry and **Return (2.e)**

- **(Criterion 2.e.1)** This Evaluation Area **will** not be demonstrated

3. PROTECTIVE ACTION IMPLEMENTATION

3.a – Implementation of Emergency Worker Exposure Control:

Criterion 3.a.l: 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 rend their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.a, b)

Extent of Play

OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimeter chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined a5 dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at **a** level low enough *to* consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the ORO's plans and procedures.
Each emergency **worker** should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record

dosimeter readings and to manage radiological exposure control should he demonstrated

During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits arid turnback values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. **If** scenario events do not require emergency **workers** to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (e.g., written procedures and/or coworkers) in providing responses.

Although it is desirable for all emergency workers to each have a direct-reading dosimeter. there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be effected for **all** members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters ***or*** they may be monitored by dosimeters strategically placed in the **work** area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry.

Individuals without specific radiological response missions, such as fanners for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area foilowing or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- Emergency workers in low exposure areas may be furnished practice *or* simulated TLDs **(as described in 1.e.1)** and/or may place a direct reading dosimeters in a centralized area as an area monitor instead of individual monitoring. KI will be simulated, if necessary **(as described in 1.e.1)**.

Implementation of KI Decision (3.b)

- (Criterion 3.b.l.) In Agreement

3.c – Implementation of Protective Actions for Special Populations:

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

Extent of Play

Applicable OROs should demonstrate the capability to alert and notify (for example, provide protective action recommendations and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc.). OKOs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

Contact with special populations and reception facilities may be actual **or** simulated, as agreed to in the Extent of Play. Some contacts with transportation providers should be actual, as negotiated in the extent of play. **All** actual and simulated contacts should be logged.

All implementing activities associated with protective actions for special populations must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- Evacuation/relocation requirements, if necessary, will be demonstrated by discussions at the county EOC. Any **calls** if necessary, will be simulated.

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

Extent of Play

Public school systems/districts shall demonstrate the ability to implement protective action decisions for students. The demonstration shall be made as follows: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the proccdures that would be followed. If evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers, congregate care centers, or host schools may actually he demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver (and the bus driver's escort, if applicable) should he available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should he verified.

Officials of the school system(s) should demonstrate the capability to develop arid provide timely informatiori to OROs for use *in* messages to parents, the general puhlic, **and** the media on the status of protective actions for schools.
The provisions of this criterion also apply to any private schools, private kindergartens and day care centers that participate in REP exercises pursuant to the ORO's plans and procedures as negotiated in the extent-of-play agreement.

All activities must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- Appropiiate actions will occur as necessary, actual evacuation will not be demonstrated

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

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

Extent of Play

OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control points, consistent with protective action decisions **(for** example, evacuating, sheltering, and relocation), in a timely manner. OKOs should demonstrate the capability to provide instructions to traffic and access control **staff** on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.

Traffic and access control staff should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview, in accordance with the extent-of-play agreement.

In instances where OROs Lack authority necessary to control access by certain types of traffic **(rail,** water, and air traffic), they should demonstrate the capability to contact the State **or** Federal agencies with authority to control access.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- **This** criterion **will** be evaluated by interview of law enforcement officers in the various county EOCs. Actual demonstrations will not be performed.

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

Extent of Play

OKOs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments *to* evacuation. Actual dispatch of resources *to* deal with impediments. such as wreckers, need not be demonstrated; however. all contacts, actual or simulated, should be logged.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- Should an impediment occur, the local EMA Director or his designee will discuss procedures. Actual demonstrations will not be performed.

Implementation of Ingestion Pathway Decisions (3.e)

(Criterion 3.e.1) This Evaluation Area will not be demonstrated

(Criterion 3.e.2) This Evaluation Area will not he demonstrated.

Implementation of Relocation, Re-entry and Return Decisions (3.f)

(Criterion 3.f.1) This Evaluation Area will not be demonstrated.

4. FIELD MEASUREMENT AND ANALYSIS

4.a – Plume Phase Field Measurements and Analysis:

Criterion 4.a.l: 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)**

Extent of Play

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 he 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 arid the ORO's plans arid procedures. An appropriate radioactive check source should be used to verify proper

operational response for each low range radiation measurement instrument (less than 1 R/hr) and for high range instruments when available. If a source is not available for a high range instrument, a procedure should exist to operationally test the instrument before entering an area where only it high range instrument can make useful readings.

All activities must be based on the ORO's plans and procedures and completed as they **would** be in an actual emergency, unless noted above **or** otherwise indicated in the extent-of-play agreement.

- This Evaluation **Area** will not be demonstrated.

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; 1.8, 11; J.10.a)

Extent of Play

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

Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions **or** to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts.

If the responsibility to obtain peak measurements in the plume has been accepted by licensee field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by State and local monitoring teams. If the licensee teams do not obtain peak measurements In the plume, it *is* the ORO's decision as to whether peak measurements are necessary to sufficiently characterize the plume. The sharing and coordination of plume measurement information among **ail** field teams (licensee, Federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated.

OROs should **use** Federal resources as identified in the Federal Radiological Emergency Response Plan (FREKP), and other resources (for example, compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must he based on the ORO's plans and procedures and completed as they would be in an actual emergency, **unless** noted above or otherwise indicated in the extent-of-play-agreement.

- This Evaluation Area will not be demonstrated.

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 tu 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)

Extent of Play

Field teams should 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. **All** methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will he in accordance with the ORO's plan and/or procedures.

OROs should use Federal resources as identified **in** the FRERP, and other resources (for example, compacts, utility, etc.), if available. Evaluation of this criterion will take ***into*** consideration the level of Federal and other resources participating in the exercise. **All** activities must be must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- This Evaluation Area will **not** be demonstrated.

Post Plume Phase Field Measurements and Sampling (4.b)

(Criterion 4.b.1)

- This Evaluation Area **will** not be demonstrated

Sub-Element 4.c—Laboratory Operations

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses *to* support protective action decisions, {NUREG-0654, C.3; J.11)
Extent of Play

The laboratory staff should demonstrate the capability *to* follow appropriate procedures for receiving samples, including logging of information, preventing contarnination of the laboratory, preventing buildup of background radiation dire to stored samples, preventing cross contamination of samples, preserving samples that may spoil (for example, **milk),**

and keeping track of sample identity. In addition, the laboratory staff should demonstrate the capability to prepare samples for conducting measurements.

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory (laboratories) instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radinnuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (for example, transuranics or as a result **of** a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those **of** the ORO.

The laboratory staff should be qualified in radioanalytical techniques and contamination control procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (for example, compacts, utility, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- This Evaluation Area will not be demonstrated

5. EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

5.a – Activation of the Prompt Alert and Notification System:

Criterion 5.a.1: Activities associated with primary alerting and notification of the public. are completed in *a* timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message 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)

Extent of Play

Responsible Offsite Response Organizations (OROs) should 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 ORO's plan and/or procedures, completion of systcrn activation should be accomplished in a timely manner (will not hc subject to specific time requirements) for primary alerting/notification. 'The initial message should include the elements required by current FEMA REP guidance.

Offsite Response Organizations (OROs) **with** route alerting as the primary method of alerting and notifying the puhlic should demonstrate the capability to accomplish the primary route alerting. following the decision to activate the alert and notification system, in a timely manner (will not be subject to specific time requirements) in accordance with the ORO's plan and/or procedures. At least one route needs to be demonstrated and evaluated. The selected route(s) should vary from exercise to exercise. However. the most difficult route should be denionstrated at least once every six years. **All** alert anti notification activities along the route should be simulated (that is, the message that would actually he used is read for the evaluator, hut not actually broadcast) as agreed upon in the extent-of-play. Actual testing of the mobile public address system will be conducted at some agreed-upon location. The initial message should include the elements required by current FEMA REP guidance.

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.

Procedures to broadcast the message shouid be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast ***of*** the message(s) or test messages ***is not*** required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation.

The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would he in an actual emergency, except as noted above or otherwise indicated in the extent-of play agreement.

- In Agreement

Criterion 5.a.2.

- This Evaluation Area will not bc demonstrated.

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

offsite emergency officials **to** notify the public of an emergency situation. **Backup** alert **and** notification **of** the public is completed within 45 minutes **following** the detection **by** the **ORO of** a failure of the primary alert and notification **system. (NUREG-0654, E. *6*,** Appendix 3.B.2.c)

Extent of **Play**

Offsite Response Organizations (OROs) with FEMA-approved exception areas (identified in the approved **Alert** and Notification System Design Report) 5–10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial derision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OKOs make the decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, **at** a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information.

For exception area alerting, at least one route needs to be demonstrated and evaluated. 'The selected route(s) should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. **All** alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent-of-play. Actual testing of the mobile public address system will be conducted at some agreed-upon location.

Backup alert and notification of the puhlic should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting only needs to be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent-of-play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of **the** primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activitics along the route should be simulated (that is, the message that would actually be used **is** read for the evaluator, but not actually broadcast) as agreed upon in the extent-of-play. Actual testing of the mobile public address system will be conducted at some agreed-upon location.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent-of-play agreement.

- This Evaluation Area **,** if necessary, will be demonstrated by a discussion between the evaluator and the local County **EMA** Director.

5.b – Emergency Information and Instructions for the Public and the Media:

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

Extent of Play

Subsequent emergency information and instructions should he provided to the puhlic and the media in a timely manner (will not be subject lo specific time requirements). 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.

The ORO should ensure. that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions (for example, evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions. information concerning protective actions for schools and special populations, puhlic inquiry telephone number, etc.) to assist the public in carrying out protective action decisions provided to them. The ORO should also be prepared to disclose and explain the Emergency Classification Level (ECL) of the incident. **At** a minimum, this information must he included in media briefings and/or media releases. OROs should demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

The emergency information should be all-inclusive by including previously identified protective action areas that are stili valid, as well as new areas. 'The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency infomiation is repeated at pre-established intervals in accordance. with the plan and/or procedures.

OROs should demonstrate the capability to develop emergency information in a non-English language when required by the plan and/or proccdures.

If ingestion pathway measures are exercised, OROs should demonstrate that **a** system exists for rapid dissemination of ingestion pathway infomiation to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures.

OROs should demonstrate the capability to provide timely, accurate, concise, and

coordinated information to the news media for subsequent dissemination to the public. This would include denionstration of the capability to conduct timely and pertinent media briefings and distribute media releases as the situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. **All** information presented in media briefings and media releases should be consistent with protective action decisions and other emergency information provided to the public. Copies of pertinent emergency infomation (for example, Emergency Alert System [EAS] messages and media releases) and media infomation kits should he available for dissemination to the media.

OKOs should demonstrate that an effective system is in place for dealing with calls to the public inquiry hotline. Hotline staff should demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. information **from** the hotline staff, including information that corrects false or inaccurate information when trends **are** noted, should he included, as appropriate, in emergency information provided to the public, media briefings, and/or media releases.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would **be** in an actual emergency, unless noted above **or** otherwise indicated in the extent-of-play agreement.

- **In** agreement

6.0 SUPPORT OPERATION/FACILITIES

6.a – Monitoring and Decontamination of Evacuees and Emergency Workers and Registration of Evacuees:

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; 5.12; K.5.a)

Extent of Play

Radiological monitoring, decontamination, and registration facilities for evacuees/emergency workers should be set **up** and demonstrated as they would be in an actual emergency or as indicated in the extent-of-play agreement. This would include adequate space for evacuees' vehicles. Expected demonstration should include 1/3 ***of*** the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours. Before using monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

Staff responsible for the radioiogical monitoring **of** evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the 20% emergency planning zone (EPZ) population planning base within about 12 hours. This monitoring productivity rate per hour is the number of evacuees that can he monitored per hour by the total complement of monitors using an appropriate monitoring

procedure. **A** minimum of six individuals per monitoring station should be monitored, using equipment and procedures specified in the plan and/or procedures, to allow demonstration of monitoring, decontamination, arid registration capabilities. The monitoring sequences for the first six simulated evacuees per monitoring team will he timed by the evaluators in order to determine whether the twelve-hour requirement can be met. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated arid conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. l'he staff should demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs and appropriate means (for example, partitions, roped-off areas) to separate clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing and personal belongings to prevent further contarnination **of** evacuees or facilities. In addition, for any individual found to be contaminated, procedures should he discussed concerning the handling of potential contamination of vehicles and personal belongings.

Monitoring personnel should explain the use of action levels for determining the need for decontamination. They should also explain the procedures for referring evacuees who cannot be adequately decontaminated **for** assessment and follow up in accordance with the ORO's plans and procedures. Contamination ***of*** the individual will be determined by controller inject and not simulated with any low-level radiation source.

The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated. The registration activities demonstrated should include the establishment of a registration record for each individual, consisting of the individual's name, address, results of monitoring, and time **of** decontamination, if any. or as othenvise designated in the plan. Audio recorders, camcorders, or written records are all acceptable means for registration, All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless othenvise indicated in the extent-of-play agreement.

- This criterion is io **be** demonstrated out **of** sequence at 3:30 pm on May 28, 2003. The Reception Centcr is located at Jeff Davis County High School, Broxton Woad, South, Hazlehurst, GA. Paper coverings for the floor will be simulated. Appling, Tattnall and Toombs Counties will not demonstrate this criterion.

6.b – Monitoring and Decontamination *of* Emergency Worker Equipment:

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

Extent of Play

The monitoring staff shouid demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the Offsite Response Organization's (ORO's) plans and procedures. Specific attention should be given to equipment, including vehicles, that was in contact with individuals found to be contaminated. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment, including vehicles, based on guidance levels and procedures stated in the plan and/or procedures.

The area to be used for monitoring and decontamination should be set up as it would be in an actual emergency, with all route markings, instrumentation, record keeping and contarnination control measures in place. Monitoring procedures shouid be demonstrated for a minimum **of** one vehicle. It is generally not rrecessary to monitor the entire surface of vehicles. Hovever, the capability to monitor areas such as radiator grills, bumpers, wheel wells, tires, and door handles should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to he contaminated should also be checked.

Decontamination capabilities, and provisions **for** vehicles and equipment that cannot be decontarrinated, may be simulated and conducted by interview.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

- This criterion **is** to be demonstrated out of sequence as described in 6.a.1. Appling, Tattnall and Toombs Counties will not demonstrate this criterion.

6.c – Temporary Care of Evacuees:

criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Ked Cross planning guidelines. (Found in MASS CARE—Preparedness Operations, ARC 3031). Managers denionstrate 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)

Extent of Play

Under this criterion, demonstration of congregate care centers may be conducted out of sequence with the exercise scenario. The evaluator should conduct a walk-through of the

center to determine, through observation anti inquiries, that the services and accommodations are consistent with ARC 3031. in this simulation, it is not necessary to *set* up operations as they would be in an actual emergency. Alternatively, capabilities may be demonstrated by setting up stations for various services and providing those services to simulated evacuees. Given the substantial differences between denionstration and simulation of this objective, exercise demonstration expectations should be clearly specified in extent-of-play agreements.

Congregate care staff should also denionstrate the capability to ensure that evacuees have been monitored for contarnination, have been decontaminated as appropriate, and have been registered before entering the facility. This capability may be determined through an interview process.

If operations at the center are demonstrated, material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility (facilities). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.
All activities associated with this criterion must be based on the ORO's plans anti procedures and completed as they would he in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

e This item is to be demonstrated out of sequence as described in 6.a.l. The facility was demonstrated by interview and walk-through of the shelter (Jeff Davis County Junior High School, Pine Forrest Avenue, Hazlehurst, GA) with the Shelter Manager or his designee. Appling, Tattnall and Toombs Counties will not dcmonstrate this criterion.

6.d – Transportation and Treatment *of* Contaminated Injured Individuals:

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

Extent of Play

Monitoring, decontamination, arid contamination control efforts will not delay urgent medical care for the victim.

Offsite Response Organizations (OROs) should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out *of* service for an extended time, any vehicle (e.g., car, truck, or van) may *he* utilized to transport the victim to the medical facility. Normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to 'the medical facility. this communication must occur before releasing the ambulance from the drill. This communication would include reporting radiation

monitoring results; if available. Additionally. the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring **of** the victim may be performed before transport, done enroute, or deferred to the medical facility. Before using a monitoring instrument(s), the monitor(s) should demonstrate the process **of** checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be dernonstrated before and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capahiiity to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of ail survey measurements and samples taken. All procedures **for** the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they wouid be in an actual emergency, unless noted above or othenvise indicated in the extent-of-play agreement.

- Meadows Memorial Hospital MS-I Exercise is to be demonstrated out of sequence on May 28, *2003*.

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary **of** the simulated sequence ofevents. Exercise Scenario, which was **used as** the basis for invoking emergency response actions by OROs in the Hatch Nuclear Plant exercise on August 20, 2003.

This exercise scenario was submitted by the **State** of Georgia, and approved by FEMA Region IV.

(Final Report Only)

3.1 NARRATIVE SUMMARY

Edwin I. Hatch Nuclear Plant
Emergency Preparedness
2003 Exercise **04**

3.t NARRATIVE SUMMARY

Initial conditions establish Unit 2 operating at 100% power, late in core life. Power history has been full power operation for the last 280 days. Unit 1 is in a refueling outage with the core unloaded.

Meteorological conditions have light winds out of the East Northeast at **4-6 MPH** gusting up to 10 MPH. A 20 percent chance of precipitation in the form of afternoon thundershowers is forecast. Plant radiologicai and radiochemistry conditions are normal.

Emergency Diesel Generator (EDG) 1B was taken out of service at 1 8 0 (EDT) on 8/18/2003 for maintenance/repair placing Unit 2 in a **14** day Limited Condition of Operation (LCO). Work is in progress on EDG 1B and it **is** scheduled to be back in service by 1305 EDT today.

This scenario begins with a small primary system leak into the drywell from a weld on the Residual Heat Removal (RHR) shutdown cooling suction line between 2E11-F009 and 2E11-F067. The Operating Crew observes a gradual increase in the leak and performs calculations on the drywell sump levels to determine the leak rate. The results of the calculations indicate a leak > 50 gpm. The Superintendent of Shift (SOS) will assume Emergency Director (ED) duties and declare an ALERT **IAW** procedure 73EP-EIP-001-0, *Emergency Classification and Initial Actions,* Section *20.0,* bass of Coolant, **as** a result of the reactor coolant system (RCS) leakage being greater than the emergency action level (EAL).

The Operating Crew performs initial emergency response actions including offsite notifications and the public address announcement to initiate actions of site emergency responders. Emergency responders report to the emergency facility and initiate activation procedures. The Operating Crew responds to the **loss** of coolant accident (LOCA) per Abnormal and Emergency Operating Procedures (AOPs & EOPs) and continues to assess and monitor plant conditions.

The Operating Crew will begin venting the drywell through the Standby Gas Treatment System (SBGTS) IAW procedure 34AB-T23-002-2S, *Small Pipe Break Inside Primary Containment*, to control containment pressure. **As** drywell pressure and temperature increase, operators enter the EOP on Primary Containment Control. During venting, the 18" Drywell purge line valve 2T48-F319 fails in the open position.

A controlled reactor shutdown will commence in accordance with procedure 34GO-OPS-014-2S, *Fast **Reactor** Shutdown.* The ED/SOS in consultation with plant management may choose to manually SCRAM the reactor at any point during **the** fast shutdown. If a decision is made to SCRAM, the weld on RHR suction line will significantly degrade resulting in a significant increase in the RCS leak rate to approximately 1500 GPM on the SCRAM. The emergency response organization (ERO) will initiate emergency facility activation procedures and begin assisting the Operating Crew in mitigation of the events.

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Emergency Preparedness
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3.1 NARRATIVE SUMMARY

The Operations Support Center (OSC) and Technical Support Center (TSC) are activated and the Emergency Operations Facility (EOF) is brought to a standby status. The SOS transfers Emergency Director (ED) duties *to* a plant management ED in the TSC. State and Local notifications using the Emergency Notification Network (ENN), and Federal (NRC) notifications using the Emergency Notification System (ENS) along with dose assessment activities are transferred to the TSC from the Control Room. The SNC Corporate Emergency Response Organization activates the Corporate Emergency Operating Center (CEOC) and the GPC Corporate Emergency Response Organization activates **the** Emergency News Center (ENC). State and Local agencies initiate emergency Standard Operating Procedures (SOPs) and notifications in response to the plants declaration.

The Control Room (simulator) receives multiple indications (fire alarms) of a fire in the **41**60V 2E switchgear room. Dispatch of the Hatch Nuclear Fire Service (HNFS) (Fire Brigade) is required. Following the fire alarms, the plant experiences a half-SCRAM and loss of all equipment supplied **by** the 2E 4160V bus. The 2A EDG will start, attempt to tie to the 2E 4160V bus and run unloaded and trip due *to* high temperature if not secured by the Operating Crew.

HNFS members arrive at the scene and begin fire fighting activities. Portable CO_2 extinguishers in the area are ineffective. The CO_2 hose reel located in the 4160 V 2E switchgear room vestibule is inoperable. HNFS members must resort to the application *of* water to extinguish the blaze.

These activities result in a grounding of the supply cables from the Unit 2 start-up transformers 2C and 2D. There are no protective devices between the start-up transformers and the switchgear, grounding of both *of* these cables cause the disconnects (i.e., 520, 530,470, and 480) between the two 230 kV buses and the two start-up transformers to trip open. This results in a loss of offsite power to all three 4160V emergency buses (E, F, & G). At this time a **Site Area Emergency (SAE)** could be declared in accordance with 73EP-EIP-001-0, *Emergency Classification and Initial Actions,* section 8.0, Fire in Plant, based on the ED's conservative judgment that the fire has compromised safe shutdown functions.

This loss **of** the 4160V emergency buses initiates a reactor scram, if not previously manually initiated. On the scram, **the** weld on RHR suction line will significantly degrade resulting in a significant increase in the RCS leak rate to approximately 1500 GPM. Reactor water level begins to drop dramatically. Attempts to inject with HPCI are unproductive as 2E41-F001 (the steam supply valve) is stuck **in** the closed position due to a problem in the control circuitry. RCIC starts and then auto isolates due to shorted high DP sensor auxiliary contact (E51-N656A) which energizes K303A and sends a close signal to RCIC steam supply valve 2E51-F008. **As** the RWL level approaches the Top of Active **Fuel** (TAF) the Operating Crew emergency depressurize the reactor to allow use of low pressure injection systems.

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Emergency Preparedness
2003 Exercise **04**

3.1 NARRATIVE SUMMARY

The 1 B EDG is tagged out for maintenance. The 2C EDG will start and tie to the 4160V G Bus. During the transfer the supply breaker from 600V Bus 2D trips due to a problem with the breakers trip adjustments. The opening of this breaker de-energizes buses 2R24-S012, S012A and S012B. Motor operated valves for several reactivity control systems and Emergency Core Cooling Systems (ECCS) are affected, including RHR, Corespray, Stand-by Liquid Control (SBLC), & Control Rod Drive (CRD).

Additionally, pump power is lost for SBLC pump 2 6 and SBGT filter train **2B.** The 2A **RHW** pump and 2A Core Spray pump are de-energized as a result of the fire in the 4160V E bus. RHR pumps 2C and 2D are unavailable due to the inability of the 1 B EDG to energize the **41**60V F **bus.**

Core Spray (CS) pump 2B is supplied with power from the 2G 4160V bus but fails to auto start due to a problem with the pump motor. RHR Low Pressure Coolant Injection (LPCI) pump **2B** auto starts with power supplied from the 2G 4160V emergency bus. However, this train of LPCI is only partially effective due to a blockage in the suction strainer. RHRSW pumps 2B and 2D are powered from the **41** 60V G bus. However, the crosstie valve from RHR to RHRSW (2E11-F073) is unavailable due to the loss of 2R24-S012.

Emergency Response Facilities continue assisting the Control Room with assessment of equipment failures, development of mitigation strategies, and assessment of plant conditions. The damage assessment teams will be dispatched to determine the extent of damage to the 4160V E bus, SUT 2C, SUT 28 and to investigate problems with 2R24-**SO1**2 and other plant equipment. Repair and corrective action teams are sent to restore the EDG 1B and restoration plans and priorities are developed as assessment activities report information to the facilities.

With limited feed **to** the reactor vessel and the ongoing RHR suction LOCA, the reactor vessel depressurizes and drains down to the drywell. **As** it becomes evident that the coolant leak exceeds the capacity of the available 28 LPCI pump, a ***Site Area*** **Emergency (SAE)** will be declared in accordance with 73EP-EIP-001-0, *Emergency Classification and Initial* ***Actions,*** section 20.0, Loss of Coolant, based on RCS leakage exceeding the capacity of all available ECCS capacities.

The €OF activates and the ED transfers to the EOF from the TSC along with Offsite (ENN) notifications and dose assessment activities. Field Monitoring Teams will be assembled and prepared for dispatch. Mandatory site evacuation and protected area accountability are performed. State and Local Emergency Operating Centers (EOCs) are staffed and initiate activation procedures.

3.1 NARRATIVE SUMMARY

As the fuel becomes uncovered, fuel cladding failure begins and gas gap activity is released to the coolant and containment. As the released activity is transported outside the sacrificial shield in RCS piping and released to the primary containment atmosphere through the RHR LOCA, drywell post accident radiation monitors trend upward. Torus post-LOCA monitors reflect the increase in radiaiion levels as the released activity is transported to the Torus through the downcomers. Area Radiation Monitors (ARMs) alarm in the reactor building. Radiation levels in the reactor building areas begin to impact repair team activities,

Successful repair of the 1B EDG will allow the recovery of the 2F 4160V emergency bus. This will allow the starting cb the 2C and 2D RHR pumps. Succesfule repair of the supply breaker from 600V Bus 2B will allow recovery of the 2R24-S012, S012A and S012B buses This will allow remote operation of the crosstie valve from RHR to RHRSW (2E11-F073).

A short in the control circuit far the 18" Drywell purge line isolation valve, 2T48-F320, opens the valve and allows contaminated Drywell atmosphere to be drawn into the operating train of Standby Gas Treatment System (SBGTS). Inventory contained in the drywell will flow to the main stack via the SBGTS and Off Gas system. An elevated filtered release of radioactivity to the environment begins through the Plant Slack.

A GENERAL emergency will be declared based on multiple failure criteria based on indications of Fuel Cladding failure, a Primary System breach, and a Primary Containment breach. Protective Action Recommendations (PARs) are issued to State and local authorities.

The Main Stack normal range monitors ramps up and the Kaman emergency range monitor initiates **as** SBGTS pumps the activity *to* the environment. The Dose Assessment **Staff** evaluates the release and coordinates activities to issue protective action recommendations (PARs) to State and Local authorities based on the radiological conditions.

LPCI 2C and 2D and/or RHRSW pumps 2B and 2D provide feed, flooding-up and covering the exposed fuel. The release of radioactive material to the environment will continue as SBGT continues to draw from the Drywell atmosphere.

The Field Monitoring Teams continue to track and monitor the radioactive glume. Protective action recommendations are upgraded **as** needed based on the evaluation of the radiological release. The emergency response organization continues to assess plant conditions, restore needed systems and attempts to isolate the release path until *the* exercise **is** terminated.

3.2 TIMELINE

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Emergency Preparedness
2003 Exercise 04

3.2 TIMELINE

Time	Event(s)
0730	Initial Conditions: Unit 2 operating at 100% power, late in core life. Power history has been full power operation for the last 280 days. Unit 1 is in a refueling outage with the core unloaded. Meteorological conditions have light winds out of the East Northeast at 4-6 MPH gusting up to 10 MPH. A 20 percent chance of precipitation in the form of afternoon thundershowers is forecast. Plant Radiological and Radiochemistry conditions are normal. Emergency Diesel Generator (EDG) 1B was taken out of service at 1800 (EDT) on 8/18/2003 for maintenance/repair placing Unit 2 in a 14 day Limited Condition of Operation (LCO). Work is in progress on EDG 1B and it is scheduled to he hack In service by 1300 EDT today.
0800	**A** small leak develops from a weld on the RHR suction line between valves 2E11-F009 and 2E11-F067.
0815	Operators will begin venting the drywell through the Standby Gas Treatment System (SBGTS) IAW procedure 34AB-T23-002-2S, Small Pipe Break *Inside* Primary Containment, to control containment pressure.
0825	Leakage increases to >60 GPM. The Operating Crew should calculate the leakage rate from the Drywell Floor Drain and Equipment Drain Sumps **As** drywell pressure and temperature increase. operators enter the EOP on Primary Containment Control. During venting, the 18" Drywell purge line valve 2T48-F319 fails in the open position.
≅ 0845	An **ALERT** should be declared IAW procedure 73EP-EIP-001-0S, Emergency Classification and *Initial* Actions, Section 20.0, Loss of Coolant. ERQ members are notified of the event via the plant public address system.
09:15	Control Room Fire Alarms are received in the in the 4160V 2E switchgear room.

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Emergency Preparedness
2003 Exercise 04

3.2 TIMELINE

Time	Event(s)
≈ 0915	The Operations Support Center (OSC) and Technical Support Center (TSC) are staffed and activated. The Emergency Operations Facility (EOF) is staffed and placed in standby.
0920	A half SCRAM occurs and all equipment supplied by the 2E 4160V bus fails..
	The Control Room dispatches of the Fire Brigade
0930	The RHR suction line leak increases to > 1590 GPM.
	Reactor water level begins to drop dramatically. The reactor scrams.
0935	Fire brigade arrives and makes their initial attack on the fire.
0945	A loss of offsite power to all three 4160V emergency buses (4160V E, F, and G) occurs. The 2A EDG starts, runs unloaded and then trips on high temperature. The 2C EDG starts and ties to the 4160V G Bus.
0950	The 600V Bus 2D supply breaker for 2R24-S012 trips de-energizing 2R24-5012, S012A and S012B.
	HPCI valve 2E41-F001 sticks in the closed position. RCIC starts but then auto isolates.
	A Site Area Emergency (SAE) could be declared in accordance with 73EP-EIP-001-0S, *Emergency Classification and Initial Actions,* section 8.0, Fire in Plant based on the ED's conservative judgment that the fire has compromised safe shutdown functions.
0955	Fire Brigade reports Fire is out but the use of water was required due to a failure of the CO_2 System.
	As reactor water level reaches -155 (TAF), the reactor is emergency depressurize to use low pressure injection system.
1000	Damage assessment teams dispatched to determine the extent of damage to the 4160V E bus, SUT 2C, SUT 2D and to investigate problems with 2R24-S012, S012A & S012B.
	Repair teams should be sent to restore the EDG 1B to service

Edwin I. Watch Nuclear Plant
Emergency Preparedness
2003 Exercise 04

3.2 TIMELINE

Time	Event(s)
1000	Core Spray (CS) pump 26 fails to auto start due to a problem with the pump motor windings.
	bow Pressure Coolant Injection (LPCI) pump 2B auto starts but is ineffective due to a blockage in the suction strainer.
≅ 1015	**A Site Area Emergency (SAE)** should be declared in accordance with 73EP-EIP-001-0S, *Emergency Classification and Initial Actions,* section 20.0. Loss of Coolant based on coolant leak exceeds the capacity of the available ECCS.
	The EOF is activated.
4030	Drywell & Torus post-LBCA monitors and Drywell Wide Range Radiation Monitors (DWWRM) trend upward.
	Area Radiation Monitors (ARMs) alarm in the reactor building
1030 +	Successful repair of the 1B EDG will allow the recovery of **the** 2F 4160V emergency bus. This will allow the starting of the 2C and 2D RHR pumps. LPCI 2C and 2D provide feed, fiooding-up and covering the exposed fuel.
	Repair *of* the supply breaker from 600V Bus 2D will allow recovery of the 2R24-S012, S012A and S012B buses. This will allow operation of the crosstie valve from RHR to RHRSW (2E11-F073).
1100	The 18" Drywell purge line valve 2T48-F320 opens allowing the Drywell atmosphere **to** be drawn into the operating train of SBGTS
	Inventory contained in the drywell will flow to the main stack via the Standby Gas Treatment System (SBGT). A filtered release of radioactivity to the environment begins through SBGT and the Plant Stack.
1115	**A GENERAL** emergency will be declared based on multiple failure criteria.
	Stack monitors begin to ramp up.
	Dose Assessment Staff dispatches field teams to locate, track, and evaluate the release.
1230 +	The exercise is terminated.