



Final Exercise Report

Hatch Nuclear Power Plant

Licensee: Southern Nuclear Operating Company

Exercise Date: March 14, 2001

Report Date: June 14, 2001

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

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FEDERAL EMERGENCY MANAGEMENT AGENCY

Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341

June 14, 2001

Mr. Luis A. Reyes
Regional Administrator - RII
Nuclear Regulatory Commission
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30323

Dear Mr. Reyes:

Enclosed is a copy of the final exercise report for the March 14, 2001, partial participation plume phase pathway exercise of the offsite radiological emergency response plans site-specific to the Hatch Nuclear Plant. This report addresses the evaluation of the plans and preparedness for the State of Georgia and the Counties of Appling, Jeff Davis, Tattnall, and Toombs Counties that are within the 10-mile EPZ. Copies of this report will be forwarded to the State of Georgia, FEMA and NRC Headquarters by my staff.

The Georgia Emergency Management Agency (GEMA) and Appling, Jeff Davis, Tattnall and Toombs Counties activated their emergency response plans to coordinate their response to the evacuation caused by the anticipated landfall of Hurricane Floyd. Their response showed the effectiveness and dedication of their emergency response organizations and the efficiency of their response plans. FEMA, after review of submitted documentation, granted credit for exercise objectives regarding actions to protect the special needs population; protective actions for schools; congregate care; shift change; and off hours and unannounced exercises.

All objectives of the exercise were demonstrated. No Deficiencies or Areas Requiring Corrective Action (ARCA) were identified during the exercise.

Based on the results of the March 14, 2001, exercise, and FEMA's review of the annual letters of certification for 1998 and 1999, the offsite radiological emergency response plans and preparedness for the State of Georgia and the affected local jurisdictions site-specific to the Hatch Nuclear Plant can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site.

The Title 44 CFR, Part 350, approval of the for the State of Georgia offsite radiological emergency response plans and preparedness site-specific to the Hatch Nuclear Plant, granted on May 5, 1981 will remain in effect.

If you should have any questions, please contact Don Cornell at 770/220-5470.

Sincerely,



Mary Lynne Miller
Acting Regional Director

Enclosure

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I. EXECUTIVE SUMMARY

On March 14, 2001, the Federal Emergency Management Agency (FEMA), Region IV, conducted a partial participation plume pathway emergency planning zone (EPZ) exercise for the Hatch Nuclear Power 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 October 20, 1999. The qualifying emergency preparedness exercise for the Hatch Nuclear Power Plant was conducted on October 8 and 9, 1980.

FEMA wishes to acknowledge the efforts of the representatives of the State of Georgia as well as Appling, Jeff Davis, Tattnall and Toombs Counties who participated in this exercise. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still 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.

The Georgia Emergency Management Agency (GEMA) and Appling, Jeff Davis, Tattnall and Toombs Counties activated their emergency response plans to coordinate their response to the evacuation caused by the anticipated landfall of Hurricane Floyd. Their response showed the effectiveness and dedication of their emergency response organizations and the efficiency of their response plans. FEMA, after review of submitted documentation, granted credit for some exercise objectives that are indicated by a "C" in Table 2.

The State and local organizations demonstrated knowledge of their emergency response plans and procedures and appropriately implemented them. No Deficiencies or Areas Requiring Corrective Action (ARCA) were identified as a result of this exercise.

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of radiological emergency response plans and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993); and
- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
 - Department of Commerce,
 - Nuclear Regulatory Commission,
 - Environmental Protection Agency,
 - Department of Energy,
 - Department of Health and Human Services,
 - Department of Transportation,
 - Department of Agriculture,
 - Department of the Interior, and
 - Food and Drug Administration.

Representatives of these agencies serve on the FEMA Region IV Regional Assistance Committee (RAC), which is chaired by FEMA. Formal submission of the RERPs for the Hatch Nuclear Power Plant to FEMA Region IV by the State of Georgia and involved

local jurisdictions occurred on January 23, 1980. Formal approval of the RERP was granted by FEMA on May 5, 1981, under 44 CFR 350.

A REP exercise was conducted on March 14, 2001 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 Power Plant. The purpose of this exercise 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 in this report are based on the evaluations of the federal evaluator team, with final determinations made by the Chief Evaluator and FEMA Region IV 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-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991; and
- FEMA-REP-15, "Radiological Emergency Preparedness Exercise Evaluation Methodology," September 1991.

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

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

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the March 14, 2001 exercise to test the offsite emergency response capabilities in the area surrounding the Hatch Nuclear Power Plant. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

A. Plume Pathway Emergency Planning Zone Description

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

The EPZ is rural in nature. The population of the EPZ is estimated to be 7,865. There are no major parks, recreational areas, or transportation facilities in the EPZ. There are 16 evacuation zones in the EPZ.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Hatch Nuclear Power Plant exercise on March 14, 2001.

STATE OF GEORGIA

Georgia Emergency Management Agency
Department of Natural Resources

PARTICIPATING JURISDICTIONS

Appling County
Jeff Davis County
Tattnall County
Toombs County

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the plume phase of the Hatch Nuclear Power Plant exercise on March 14, 2001. Included are times notifications were made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: March 14, 2001 - Hatch Nuclear Power Plant

Emergency Classification Level of Event	Time	1st NOAA Notification						
		FEOC	DOSE	ENC	APPLING COUNTY	JEFF DAVIS COUNTY	TATTNALL COUNTY	TOOMBS COUNTY
Unusual Event								
Alert	0806				0810	0829	0816	0835
Site Area Emergency	0916	0930	0929		0935	0925	0920	0920
General Emergency	0940	0941	1001	0945	1000	0956	0952	1002
Simulated Rad. Release Started	0940	1001	1004	0945	1000	0956	0952	1002
Simulated Rad. Release Terminated	1130							
Facility Declared Operational		0925	0925	0925	0935	1010	0853	0928
Declaration of State of Emergency		0941	0945	0955	0935 - Local		1031 - Local	
Exercise Terminated		1200	1200	1223	1210	1200	1204	1200
Early Precautionary Actions: Evacuate special needs Evacuate Schools River Clearance		0940			0935		1015	0945
1st Protective Action Decision Evacuate Zones: A, B5, B10, C5, C10, D10 and E10 Shelter Zones:		1015			1015	1015	1015	1015
1st NOAA Tone Alert Radio Notification:		1028	1028	1028	1028	1028	1028	1028
KI Administration Decision: Do not distribute		1040	1040					

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IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities, which participated in the March 14, 2001 exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile Plume EPZ, surrounding the Hatch Nuclear Power Plant.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in exercise objectives contained in FEMA-REP-14, REP Exercise Manual, dated September 1991. Detailed information on the exercise objectives and the extent-of-play agreement used in this exercise are found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation - Table 2

The matrix presented in Table 2, on the following page(s), presents the status of all exercise objectives from FEMA-REP-14, that were scheduled for demonstration during this exercise, by all participating jurisdictions and functional entities. Exercise objectives are listed by number with the demonstration status of those objectives indicated by the use of the following letters:

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

Table 2. Summary of Exercise Evaluation

DATE AND SITE: March 14, 2001 - Hatch Nuclear Power Plant

Jurisdiction or Functional Entity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
STATE OF GEORGIA																																		
Forward Emergency Operations Center	M	M	M	M					M	M	M													M										
Dose Assessment		M	M	M			M		M					M										M										
Emergency Operations Facility		M		M																														
Emergency News Center		M		M							M	M	M																					
APPLING COUNTY																																		
Emergency Operations Center	M	M	M	M					M	M					C	C								C						C	M	C	C	
Traffic Control Points					M												M																	
Reception Center					M													M	C											C				
E W Decontamination					M																		M											
JEFF DAVIS COUNTY																																		
Emergency Operations Center	M	M	M	M	M				M	M					C					C				C						C		C	C	
TATTNALL COUNTY																																		
Emergency Operations Center	M	M	M	M	M				M	M					C					C				C						C		C	C	
TOOMBS COUNTY																																		
Emergency Operations Center	M	M	M	M	M				M	M					C	C				C				C						C	M	C	C	

LEGEND: M = Met D = Deficiency A = ARCA C = Credit

NOTE: Credit granted for actual activation/response to Hurricane Floyd (June 28, 2000).

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B. Status of Jurisdictions Evaluated

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

- **Met** - Listing of the demonstrated exercise objectives under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.
- **Deficiency** - Listing of the demonstrated exercise objectives 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 objectives 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 objectives 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."

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

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

- **Plant Site Identifier** - A two-digit number corresponding to the Utility Billable Plant Site Codes.
- **Exercise Year** - The last two digits of the year the exercise was conducted.
- **Objective Number** - A two-digit number corresponding to the objective numbers in FEMA-REP-14.
- **Issue Classification Identifier** - (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise Issue Identification Number** - A separate two (or three) digit indexing number assigned to each issue identified in the exercise.

1. STATE OF GEORGIA

1.1 Forward Emergency Operations Center

The Forward Emergency Operation Center (FEOC) is co-located with the Emergency News Center (ENC) in Vidalia, Georgia. The Governor's Authorized Representative (GAR) was involved in making protective action decision (PAD). All activities conformed with established objectives and the extent-of-play. Knowledge of emergency response requirements was excellent. The direction, control and professionalism displayed by the FEOC staff and support agencies was exceptional. Message tracking and graphic displays were computerized, easy to see, and displayed continuously. Backup communication was demonstrated when the Southern Linc communication phone briefly failed.

- a. MET: Objectives 1, 2, 3, 4, 9, 10, 11 and 23**
- b. DEFICIENCY: NONE**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. NOT DEMONSTRATED: NONE**
- e. PRIOR ARCAs - RESOLVED: NONE**
- f. PRIOR ARCAs - UNRESOLVED: NONE**

1.2 Dose Assessment

The Dose Assessment group of the Georgia Department of Natural Resources (DNR) successfully demonstrated the ability to make timely analysis of the radiological consequences of an accident at the Hatch Nuclear Power Plant and to make timely recommendations to GEMA for the protection of the public around the plant. The Radiation Emergency Coordinator (REC) worked well with his professional staff, and was especially effective in briefing the GAR, FEOC Chief, and the GEMA staff.

- a. MET: Objectives 2, 3, 4, 7, 9, 14 and 23**
- b. DEFICIENCY: NONE**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. NOT DEMONSTRATED: NONE**
- e. PRIOR ARCAs - RESOLVED: NONE**
- f. PRIOR ARCAs - UNRESOLVED: NONE**

1.3 Emergency Operations Facility

The Emergency Operations Facility (EOF) for the Hatch Nuclear Power Plant, located onsite in the facility's training complex, is an excellent facility from which all participating organizations can effectively manage emergency operations. Coordination of technical information by the utility operator with offsite officials and representatives from the Nuclear Regulatory Commission (NRC) was exemplary. All State officials deployed at the EOF were well trained, knowledgeable, followed applicable procedures; and performed their respective responsibilities efficiently and professionally.

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

1.4 Emergency News Center

The utility's designated Public Information Officer (PIO) activated the Emergency News Center (ENC). Public affairs personnel from GEMA, Georgia Department of Human Resources (DHR), NRC, and Toombs County jointly manned the ENC. Appling, Jeff Davis and Tattnall Counties have assigned areas in the ENC, but did not participate from this location. The personnel in the ENC rapidly melded into a responsive and focused team. During the course of the exercise ENC personnel demonstrated the ability to gather and disseminate information pertinent to the safety and welfare of the public in a timely and efficient manner. Three news conferences were conducted over a relatively short period. 12 news releases were also prepared and disseminated, and the rumor control staff responded to over 60 calls.

- a. **MET: Objectives 2, 4, 11, 12 and 13**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2. RISK JURISDICTIONS

2.1 APPLING COUNTY

2.1.2 Emergency Operations Center

The Emergency Operations Center (EOC) is a well-equipped, well-managed facility with a very proactive staff that worked well as a team. There were frequent staff briefings to update plant status, and inform the other agencies of on-going activities. Staff activation, communications, direction and control and public notification were successfully demonstrated.

Particularly noteworthy was the excellent and expeditious handling, processing and posting of EOC message traffic. The Appling County staff, including the elected officials, demonstrated their ability to protect the citizens of the county.

- a. **MET:** Objectives 1, 2, 3, 4, 9, 10 and 31
- 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 demonstrated out-of-sequence through an interview with an Appling County Deputy Sheriff. 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 included mitigating highway impediments, knowledge of the location of reception and congregate care centers and the availability of traffic cones, signs and barricades.

- a. **MET:** Objectives 5 and 17
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE

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

2.1.3 Reception Center

Appling County activated its reception center out-of-sequence at Appling Comprehensive High School in Baxley, GA. This location offers sufficient space for all reception center activities. Cooperation between the various agencies assigned to this location was excellent. The Health Department performed personnel monitoring and the Baxley Volunteer Fire Department monitored vehicles. The Department of Family and Children's Services registered and counseled evacuees. Appling County Emergency Management personnel were available to assist in any capacity needed.

- a. **MET: Objectives 5 and 18**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.1.4 Emergency Worker Decontamination

Emergency worker monitoring and decontamination was successfully demonstrated, out-of-sequence, by the Baxley Volunteer Fire Department at the Appling County Comprehensive High School walking track in Baxley, GA.

One emergency worker and one vehicle were monitored using Eberline model E-120 instruments. The vehicle was found to be contaminated and decontamination procedures were discussed. Each emergency worker was issued one 0-5R direct reading dosimeter, a simulated thermoluminescent dosimeter (TLD), potassium iodide (KI) and an exposure record. Dosimeters were read at 30-minute intervals and personnel were aware of exposure limits.

- a. **MET: Objectives 5 and 22**
- 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 EOC staff successfully demonstrated the capability to respond to an emergency at the Hatch Nuclear Power Plant. The Chairperson of the County Commission and the Mayor of Hazlehurst were present and participated during the exercise. The GEMA Area Coordinator, Chief of Operations, County Radiation Safety Officer, and County Deputy Emergency Manager effectively supported the Jeff Davis County Emergency Manager.

- a. **MET: Objectives 1, 2, 3, 4, 5, 9 and 10**
- 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 TATTNALL COUNTY

2.3.1 Emergency Operations Center

The EOC, co-located with the 911 Center and the Emergency Medical Station, is a new, spacious and well equipped facility. The all volunteer staff did an excellent job disseminating information, coordinating actions and working well as a team. The Mayor of Reidsville, Chairman of the County Commissioners, and the County Manager were present and participated in the decision making process. A Deputy from the Reidsville Sheriff's Office provided security and maintained a sign-in roster and badges. The entire EOC staff should be recognized for doing an excellent job.

- a. **MET: Objectives 1, 2, 3, 4, 5, 9 and 10**
- 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 excellent support to the county residents. The Director and Operations Officer provided consistent direction and control to the EOC staff. Information from the plant and the FEOC was promptly posted for the staff to see. City and County governments were represented in the EOC. The presence of these individuals is reflective of Toombs County's commitment to the emergency management program and to the citizens of Toombs County. Early precautionary actions included the high school evacuation, river clearance and assistance to the special needs population. PADs were appropriate and promptly implemented.

- a. **MET: Objectives 1, 2, 3, 4, 5, 9, 10 and 31**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs – UNRESOLVED: NONE**

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

ACP	Access Control Point
AMA	American Medical Association
ANI	American Nuclear Insurers
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
CCC	Congregate Care Center
CD-V	Civil Defense - Victoreen
CFR	Code of Federal Regulations
CPM	Counts Per Minute
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
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EEM	Exercise Evaluation Methodology
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ETA	Estimated Time of Arrival
ETE	Evacuation Time Estimate
EWMS	Emergency Worker Monitoring and Decontamination Station
FAA	Federal Aviation Agency
FCC	Federal Communications Commission
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FEOC	Forward Emergency Operations Center
FMT	Field Monitoring Teams
FR	Federal Register

FTC	Field Team Coordinator
ft/min	feet per minute
ft ³ /min	cubic feet per minute
GAR	Governor's Authorized Representative
GE	General Emergency
GEMA	Georgia Emergency Management Agency
GM	Guidance Memorandum
IP	Implementing Procedure
JIC	Joint Information Center
JPIC	Joint Public Information Center
KI	Potassium Iodide
mR	milliroentgen
mR/h	milliroentgen per hour
NOAA	National Oceanic and Atmospheric Administration
NOUE	Notification of Unusual Event
NRC	Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, <i>"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980</i>
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
PIO	Public Information Officer
PNS	Public Notification System
POR	Point Of Review
R	Roentgen
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RC	Reception Center
REA	Radioactive Emergency Area
REC	Radiation Emergency Coordinator
REM	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness

RERP	Radiological Emergency Response Plan
R/h	Roentgen(s) per hour
RO	Radiological Officer
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
TCP	Traffic Control Point
TDD	Telecommunications Device for the Deaf
TL	Team Leader
TLD	Thermoluminescent Dosimeter
UHF	Ultra High Frequency
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
VHF	Very High Frequency
WP	Warning Point

APPENDIX 2

EXERCISE EVALUATORS

Following is a list of personnel who evaluated the Edwin I. Hatch Nuclear Power Plant exercise on March 14, 2001. The organizations represented are indicated by the following abbreviations:

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

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
STATE		
Forward Emergency Operations Center	Don Cornell	FEMA
Dose Assessment	Bernie Hannah Lyle Slagle	ICF ICF
Emergency Operations Facility	Robert Trojanowski	NRC
Emergency News Center	Bill Larrabee	ICF
APPLING COUNTY		
Emergency Operations Center	Tom Reynolds Helen Wilgus	FEMA FEMA
Traffic Control Points/Reception Center/E W Decontamination	Al Hall	ICF
JEFF DAVIS COUNTY		
Emergency Operations Center	Robert Perdue	FEMA
TATTNALL COUNTY		
Emergency Operations Center	Eddie Hickman	FEMA
TOOMBS COUNTY		
Emergency Operations Center	Tom Trout	FDA
Federal Observer	Chet Morris	FDA

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise objectives, which were scheduled for demonstration in the Edwin I. Hatch Nuclear Power Plant exercise on March 14, 2001 and the extent-of-play agreement approved by FEMA Region IV.

A. Exercise Objectives

Following are the specific REP objectives scheduled for demonstration during this exercise.

Hatch Evaluated Exercise March 14, 2001

#	Objective	Group	State of Georgia	Appling County	Jeff Davis County	Tattnall County	Toombs County
1	Mobilization of emergency personnel	A	✓	✓	✓	✓	✓
2	Adequacy of facilities & displays	A	✓	✓	✓	✓	✓
3	Direction & Control of emergency	A	✓	✓	✓	✓	✓
4	Communicate with all appropriate locations	A	✓	✓	✓	✓	✓
5	Control emergency worker exposure	A		✓	✓	✓	✓
6	Demonstrate equipment & procedures to measure radiation in the field	A	▼				
7	Dose projection	A	✓				
8	Measurement of radioiodine & particulates	A	▼				
9	Plume protective action decision making	A	✓				
10	Alert & notification	A	✓				
11	Public instruction & emergency information	A	✓				
12	Emergency information media	A	✓				
13	Emergency information rumor control	A	✓				
14	Use of KI	B	✓				
15	Implementation of protective actions special populations	B		▼	2003	2005	2005
16	Protective actions for schools	B		▼			▼
17	Traffic & access control	B		▼	2003	2005	2005
18	Reception center - monitoring, decon & registration	B		✓	2003	2005	2005
19	Congregate care	B		▼	▼	▼	▼
20	Medical services - transportation	B		▼			2003
21	Medical services - facilities	B		▼			2003
22	Emergency worker decontamination	B		✓	2003	2005	2005
23	Other assistance	C	▼	▼	▼	▼	▼
24	Post-emergency sampling	C					
25	Laboratory operations	C					
26	Project dosage via ingestion pathway	C					
27	Implementation of ingestion protective actions	C					
28	Relocation, re-entry, and return decision making	C					
29	Relocation, re-entry, and return implementation	C					
30	Continuous, 24-hour staffing	C	▼	▼	▼	▼	▼
31	Offsite support for the evacuation of onsite personnel	C		✓			✓
32	Unannounced exercise or drill	C	▼	▼	▼	▼	▼
33	Off-hours exercise or drill	C	▼	▼	▼	▼	▼

Hatch Evaluated Exercise March 14, 2001

"Extent of Play"

Referencing the description under "Guidance" (C.2-1) in REP 14, this is a "partial participation" exercise for the State of Georgia and the Counties of Appling, Jeff Davis, Tattnall and Toombs.

▼ **Objective 5.** Will be demonstrated by the issuance of radiation self-protection equipment and instruction to the traffic and access control personnel in Appling County. The counties of Jeff Davis, Tattnall and Toombs may issue radiation self-protection equipment to other participants.

▼ **Objectives 6. and 8.** Will not be demonstrated.

▼ **Objectives 15., 16., 19., 23., 30., 32. and 33.** are exempted from evaluation in the Counties of Appling, Jeff Davis, Tattnall and Toombs due to credit for response to actual events during Hurricane Floyd (letter from Donald Cornell, dated July 5, 2000).

▼ **Objective 17.** Credit for Traffic and Access Control was given for actual events as described above (letter from Donald Cornell, dated July 5, 2000). Knowledge of radiological self-protection will be evaluated through interviews of law enforcement personnel. These interviews will be conducted at the Appling County Emergency Operations Center.

▼ **Objectives 18. and 22.** Will be demonstrated for evaluation out of sequence of the exercise and after school hours (3:30 pm).

▼ **Objectives 20. and 21.** Will be demonstrated for evaluation on April 18, 2001 at the Appling General Hospital, Baxley, Georgia.

▼ **Objective 31.** Will be demonstrated by discussion and communications only.

Other than the above variants, the Objectives will be demonstrated as indicated on the Objectives Matrix submitted for the March 14, 2001, Plant Hatch Evaluated Exercise.

The FEMA Region IV RAC Chair will establish and provide the date, time and location of the pre-exercise briefing, the post-exercise Participants Critique and the Public Meeting.

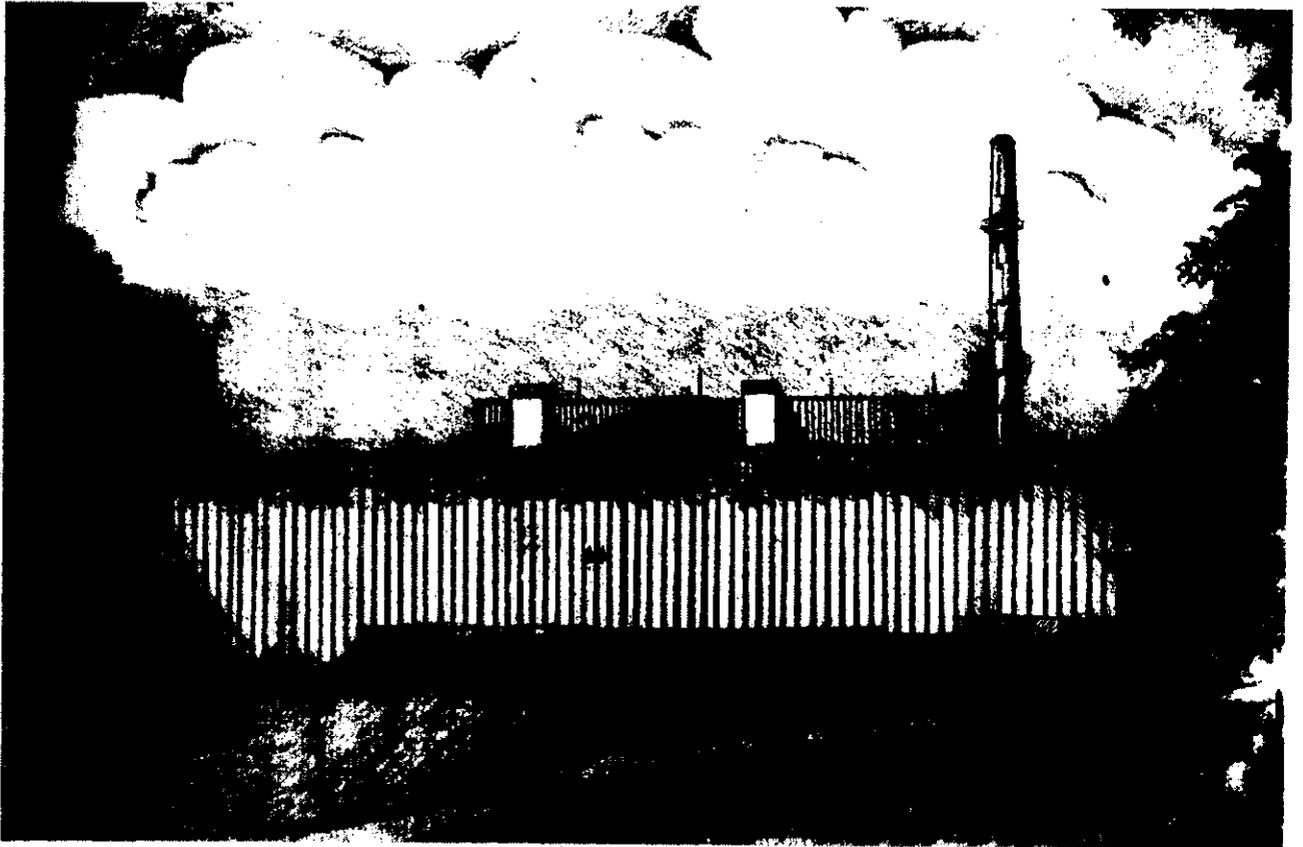
APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events, Exercise Scenario, which was used as the basis for invoking emergency response actions by OROs in the Hatch Nuclear Power Plant exercise on March 14, 2001.

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

Hatch Emergency Preparedness 2001 Evaluated Exercise



March 14, 2001

**EDWIN I. HATCH NUCLEAR PLANT
EMERGENCY PREPAREDNESS
2001 Evaluated Exercise**

3.1 NARRATIVE SUMMARY

Initial conditions establish Unit 2 operating at 100% power, in late core life. Power history has been full power operation for the last 200 days. Unit 1 is at the end of a refueling outage with the core loaded and startup scheduled for the weekend. Meteorological and plant radiochemistry conditions are normal.

EDG 1B was taken out of service on 3/13/2001 at 2000 (EST) for preventative maintenance. EDG 1B is scheduled to be back in service by 1600 (EST) today.

The scenario begins with the Control Room (Simulator) Operating Crew receiving a phone call from the load dispatcher indicating that they are having trouble maintaining grid voltage and Plant Hatch should remain on-line, if possible. The Operating Crew observes decreased voltage on the 520 kV lines and enters the abnormal operating procedure "Operation with Degraded System Voltage".

The Operating Crew observes an increase in drywell pressure and temperature and receives a LOCA signal. The reactor scrams, all Control Rods fully insert. The Operating Crew monitors the drywell temperature and pressure. Reactor water level is maintained with available make up systems. An Alert is declared based on the determination that the leak rate is greater than 50 gpm. The Operating Crew performs emergency response actions including offsite notifications and the public address announce to initiate actions of site emergency responders. Emergency responders report to the emergency facility and initiate activation procedures.

The Control Room (Simulator) experiences a loss of lights and receives multiple annunciator alarms, as a LOSEP has occurred. The available Diesel Generators autostart and tie to their respective 4160 V buses. The leak rate on the RWCU line is increasing. The Operating Crew responds to the LOSEP and LOCA per Abnormal and Emergency Operating Procedures (AOPs & EOPs). High pressure injection systems, if not running, automatically initiate.

The OSC and TSC are activated and the EOF is in a standby condition. The SNC Corporate Emergency Response Organization activates the corporate facility and the GPC Corporate Emergency Response Organization activates the Emergency News Centers (ENC). State and Local agencies initiate response procedures.

The TSC begins assessment of plant conditions and assists the Control Room with development of mitigation strategies. Repair teams are dispatched to troubleshoot and repair needed equipment throughout the plant. An investigation into restoration of offsite power and the 1B Diesel Generator takes place. Other emergency repair teams are assembled and dispatched to evaluate plant conditions and initiate repair activities.

**EDWIN I. HATCH NUCLEAR PLANT
EMERGENCY PREPAREDNESS
2001 Evaluated Exercise**

3.1 NARRATIVE SUMMARY

The HPCI Turbine trips. The remaining high pressure systems are inadequate to maintain reactor water level. Diesel Generator 2A then trips causing the loss of additional plant Emergency Core Cooling Systems (ECCS). As the reactor water level approaches the Top of Active Fuel (TAF), the Operating Crew depressurize the Reactor to allow use of the remaining low pressure systems for core cooling.

Multiple mechanical failures do not allow adequate injection capability to maintain the reactor water level. A **Site Area Emergency** is declared based on a confirmed reactor coolant leak greater than available ECCS capacity. The EOF activates and the Emergency Director (ED) transfers along with Offsite (ENN) notifications and dose assessment activities to the EOF. External Radiological Emergency Teams (Field Teams) will be assembled and prepare for dispatch. Mandatory site evacuation and accountability are performed. State and Local facilities activate.

As the reactor water level drops below the Top of Active Fuel (TAF), the core heats up rapidly. Clad damage occurs releasing gas gap activity into the reactor water. Levels of radioactive material increase in the Drywell and Torus atmospheres. Dose rates in these areas and the adjacent Reactor Building areas increase. Design based leakage to the reactor building causes the radiation levels and effluent monitors to slowly rise.

The TSC dispatches OSC teams to investigate and repair failed plant systems. Internal RET teams monitor the radiation levels in the Reactor Building and plant environs. Repair of the 2A DG and the restoration of offsite power allows the Operating Crew to cover the core, maintain water level and stabilize the reactor.

A shorted relay in the drywell venting system opens the 18" drywell vent valves. The activity in the drywell is released through SBGTS to the Main Stack. The effluent monitors increase rapidly. External Field Monitoring teams are dispatched to track the release. A **GENERAL EMERGENCY** is declared based on multiple symptoms criteria (failure of fuel cladding, breach of the reactor coolant system and loss of primary containment). Protective Action Recommendations (PARs) are issued to State and local authorities.

The Field Monitoring Teams continue to track and monitor the radioactive plume. The emergency response organization continues to assess plant conditions, restore needed systems and attempts to isolate the release path until the exercise is terminated.