



Final Exercise Report

Brunswick Nuclear Power Plant

Licensee: Progress Energy

Exercise Date: November 19-20,2002

Report Date: February 14,2003

**FEDERAL EMERGENCY MANAGEMENT AGENCY
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I. EXECUTIVE SUMMARY

On November 19-20, 2002, the Federal Emergency Management Agency (FEMA) Region IV conducted a full participation ingestion pathway exercise around the Brunswick Nuclear Power Plant. The purpose of the exercise was to assess the level of State and Local preparedness in responding to a radiological emergency. This exercise was conducted in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RRP) and procedures.

The previous exercise at this site was conducted on November 14, 2000. The qualifying emergency preparedness exercise was conducted on August 17-19, 1981.

FEMA wishes to acknowledge the efforts of the many individuals who participated in the development and conduct of this exercise including the employees and volunteers from the State of North Carolina, Brunswick, New Hanover, Bladen, Columbus and Fender Counties in North Carolina and Horry County in South Carolina.

Protecting the public health and safety is the full-time job of some of the exercise participants. 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.

One limiting factor to the excellent staff and operation in New Hanover County is the limited size of the Emergency Operations Center (EOC). Larger EOCs in New Hanover County and at the State level would generally enhance emergency response operations.

State and local organizations, except where noted, demonstrated knowledge of their emergency response plans and procedures and successfully implemented them. No Deficiencies were identified. One Area Requiring Corrective Action was identified at the Joint Information Center concerning the fact that the supplemental news release was not effectively linked to the EAS message.

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 government's 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:

- e Taking the lead in offsite emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;
- e 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, 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 Brunswick Nuclear Power Plant to FEMA

Region IV by the State of North Carolina occurred on March 15, 1981. Formal approval of the RERP was granted by FEMA under 44 CFR 350 on March 17, 1982.

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 evaluation of the Federal evaluator team, with final determinations made by the FEMA Region IV Chief Evaluator and 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 – "Radiological Emergency Preparedness: Exercise Evaluation Methodology," April 25, 2002

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 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 government's schedule of corrective actions for each identified exercise issue and (2) descriptions of unresolved ARCAs assessed during previous exercises along with the status of the OROs efforts to resolve them.

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the November 19-20, 2002, exercise to test the offsite emergency response capabilities in the area surrounding the Brunswick Nuclear Power Plant.

A. Plume Emergency Planning Zone Description

The Brunswick Nuclear Power Plant is located on North Carolina Highway 87 just west of the town of Southport, North Carolina in Brunswick County. The plant is owned and operated by Progress Energy. It has two generating units, each using a boiler water reactor. The two units have a combined generating capacity of 1,580,000 kilowatts of electricity.

The 10-mile EPZ consists of two North Carolina Counties: Brunswick and New Hanover which include part of the Cape Fear River, the Intercoastal Waterway and the Atlantic Ocean, evacuation routes include – U. S. Highways 17 and 421 and North Carolina Routes 211, 133 and 87. Some of the leading beaches include Carolina Beach, Wilmington Beach, Kure Beach, Oak Island and Southport. Some of the leading employers include General Electric, Wal-Mart, Cape Industries, Pharmaceutical Products Development, Corning and Belk Berry. The EPZ is divided into 9 evacuation zones. The 50-mile IPZ Counties include: Bladen, Brunswick, Columbus, New Hanover, Onslow, Pender, Sampson and Horry (SC).

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Brunswick Nuclear Power Plant exercise on November 19-20, 2002.

STATE OF NORTH CAROLINA

Governor's Office
Public Information
Office of Citizen's Affairs
Department of Crime Control and Public Safety
Division of Emergency Management
State Highway Patrol
National Guard
Public Affairs Office
Department of Environment, Wealth and Natural Resources
Department of Wildlife Resources
Division of Radiation Protection
Public Water Supply
Division of Adult Health. State Pharmacist

Division of Environmental Health
Department of Human Resources
Division of Social Services Department
Office of Emergency Medical Services
North Carolina State University, Cooperative Extension Service
Department of Insurance
Department of Transportation
Marine Patrol

FEDERAL AGENCIES

United States:

- e Nuclear Regulatory Commission
- e Environmental Protection Agency
- Food and Drug Administration
- Federal Emergency Management Agency
- e Department of Energy
- Department of Agriculture
- Coast Guard Auxiliary
- e Department of Health and Human Services

RISK JURISDICTIONS

Brunswick County
New Hanover County

INGESTION PATHWAY COUNTIES

Bladen County
Columbus County
Pender County
Horry County (SC)

PRIVATE/VOLUNTEER ORGANIZATIONS

American Red Cross
American Radio Emergency Service
American Nuclear Insurers
Leland Volunteer Fire Department
Radio Amateur Civil Emergency Service
Salvation Army

C. Exercise Timeline

Table 1, on the following page, presents the time at which **key** events and activities occurred **during** the Brunswick Nuclear Power Plant exercise on November 19-20, 2002. Also included are times notifications were made to the participating jurisdictions.

Table I Exercise Timeline

DATE AND SITE: November 19-20, 2002 - Brunswick Nuclear Power Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken							
		SEOC	JIC	Brunswick County	New Hanover County	Bladen County	Columbus County	Pender County	Horry County, SC
Unusual Event	0805	0813		0813	0813	0910	0823	0900	0840
Alert	0919	0933	0930	0940	0933	1040	0948	0955	0948
Site Area Emergency	1101	1113	1112	1116	1113	1105	1124	1137	1148
General Emergency	1242	1254	1245	1257	1254		1304	1320	1314
Simulated Rad. Release Started	1242	1244	1245	1242	1245		1242	1320	
Simulated Rad. Release Terminated	On-going								
Facility Declared Operational		0858	0945	0955	0818	0854	0945	0945	1125
Declaration of State of Emergency Local Declaration		1313	1315	1313 1312	1313 1312		1313	1330	
Exercise Terminated	1425	1415	1427	1420	1434	1210	1410	1420	1425
Early Precautionary Actions: Early dismissal of schools				1030	1033				
1st Protective Action Decision "No PADs for the general public at this time."		1126		1125	1125				
1st Siren Activation		1130		1130	1130				
1st EAS Message		1135		1135	1135				
2nd Protective Action Decision Evacuate: All Zones		1313		1312	1313				
2nd Siren Activation		1320		1320	1320				
2nd EAS Message		1325		1325	1325				
KI Administration Decision: EW Ingest		1315		1342	1333				

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IV. EXERCISE EVALUATION AND HESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the November 19-20, 2002 exercise to test the offsite emergency response capabilities of State and local governments in the IO-nule EPZ surrounding the Hrunswick Nuclear **Power** Plant.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in the evaluation criteria, dated April 25, 2002. 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 the evaluation criteria on the following page(s), presents the status of all exercise activities from, **which** were scheduled for **demonstration** during this exercise by all participating jurisdictions and functional entities. Exercise objectives are listed by number and the demonstration status of those objectives is indicated by the use of **the** following letters:

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

Table 2. Summary of Exercise Evaluation

DATE AND SITE: November 19-20, 2002 - Brunswick Nuclear Power Plant

ELEMENT/Sub-Element	State	Brunswick County	New Hanover County	Bladen County	Columbus County	Pender County	Horry County (SC)
1. EMERGENCY OPERATIONS MANAGEMENT							
1.a.1. Mobilization	M	M	M	M	M	M	M
1.b.1. Facilities	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
1.e.1. Equipment & Supplies to Support Operations	M	M	M	M	M	M	M
2. PROTECTIVE ACTION DECISION MAKING							
2.a.1. Emergency Worker Exposure Control	M	M	M				
2.b.1. Rad Assessment & PARs & PADs Based on Available Information	M	M	M				
2.b.2. Rad Assessment and PARs and PADs for the General Public							
2.c.1. Protective Action Decisions for Special Populations		M	M				
2.d.1. Radiological Assessment & Decision Making for Ingestion Exposure	M	M	M				
2.e.1. Rad Assessment/Decision Making for Relocation, Re-entry & Return	M	M	M				
3. PROTECTIVE ACTION IMPLEMENTATION							
3.a.1. Implementation of Emergency Worker Control	M	M	M				
3.b.1. Implementation of KI Decisions	M	M	M				
3.c.1. Implementation of PADs for Special Populations		M	M				
3.c.2. Implementation of PADs for Schools		M					
3.d.1. Implementation of Traffic and Access Control	M	M	M				
3.d.2. Impediments to Evacuation and Traffic and Access Control		M	M				
3.e.1. Implementation of Ingestion Pathway Decision	M	M	M				
3.e.1. Implementation of Ingestion Decisions Using Adequate Information	M	M	M				
3.e.2. Implementation of IP Decisions Showing Strategies & Instructional Materials	M	M	M				
3.f.1. Implementation of Relocation, Re-entry and Return Decisions	M	M	M				
4. FIELD MEASUREMENT and ANALYSIS							
4.a.1. Plume Phase Field Measurement & Analysis Equipment	M						
4.a.2. Plume Phase Field Measurement & Analysis Management	M						
4.a.3. Plume Phase Field Measurements & Analysis Procedures	M						
4.b.1. Post Plume Phase Field Measurement & Analysis	M						
4.b.2. Laboratory Operations	M						
5. EMERGENCY NOTIFICATION & PUBLIC INFO							
5.a.1. Activation of Prompt Alert and Notification System	M	M					
5.a.2. Activation of Prompt Alert and Notification 15 Minute (Fast Breaker)							
5.a.3. Activation of Prompt Alert & Notification Backup Alert & Notification.		M	M				
5.b.1. Emergency Information and Instructions for the Public and the Media	A	M	M				
6. SUPPORT OPERATIONS/FACILITIES							
6.a.1. Monitoring and Decon of Evacuees and EWs and Registration of Evacuees		M					
6.b.1. Monitoring and Decontamination of Emergency Worker Equipment		M					
6.c.1. Temporary Care of Evacuees		M					
6.d.1. Transportation and Treatment of Contaminated Injured Individuals		M					

Legend: M = Met D = Deficiency A = ARCA

W

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 are definitions of the terms used in this subsection status of demonstration.

- a **Met** - Listing of the demonstrated exercise criteria under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.
- **Deficiency** - Listing of the demonstrated exercise criteria under which one or more Deficiencies 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 criteria under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises 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.
- a **Not Demonstrated** - Listing of the exercise criteria, which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.
- **Prior ARCAs - Resolved** - Descriptions of ARCAs assessed during previous exercises, which were resolved in this exercise, and the corrective actions demonstrated.
- a **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 "Radiological Emergency Preparedness Exercise of Evaluation Methodology," April 25, 2002 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 “Radiological Emergency Preparedness Exercise of Evaluation Methodology,” April **25,2002** 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.
- **Criterion Number** - A digit/letter/digit combination corresponding to the criterion number in the Exercise **of** Evaluation Methodology.
- **Issue Classification Identifier** - (**D** = Deficiency. **A** = **ARCA**). Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise** number assigned **to** each issue identified in the exercise.

1. STATE OF NORTH CAROLINA

1.1 State Emergency Operations Center

The State Emergency Operations Center (SEOC) successfully demonstrated all criteria under the capable leadership of the Director of the State Emergency Response Team (SERT). SERT personnel worked consistently as an effective team. They consistently communicated with Brunswick and New Hanover Counties and coordinated with the Bladen, Columbus, and Pender Counties in North Carolina and Worry County, South Carolina, ingestion pathway emergency planning zone (IPZ) counties. The REP Technical Advisor, utility representatives, and Radiation Protection personnel helped formulate the 10 and 50-mile IPZ protective action decisions (PAD). The Director effectively coordinated the emergency response operation. The Public Information Officer and Amateur Radio Emergency Services (ARES) played supporting roles in transmitting information out to the public and providing back up communications to the SEQC operation.

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

1.2 SEOC Ingestion Pathway Activities

The ingestion pathway tabletop exercise was conducted on November 20, 2002 in the SEOC in Raleigh, North Carolina. State agencies were well represented, as were Brunswick, New Hanover, Pender and Horry Counties. Several Federal Agencies participated, including the Nuclear Regulatory Commission, the United States Department of Agriculture, the Environmental Protection Agency, the Food and Drug Administration, and the Department of Energy; a representative from the American Nuclear Insurers also participated. The tabletop was well facilitated as lively discussions took place among State and Federal Agencies. Agency discussions focused on required protective actions, the economic impact of deposition on business and agriculture, quarantining products, relocation, reentry and return, and how State and Federal agencies cooperatively resolve complex issues. An excellent exchange of information and sharing of ideas occurred during the exercise.

- a. **MET:** Criteria 2.d.1., 2.e.1., 3.e.1., 3.e.2. and 3.f.1.
- b. **DEFICIENCY:** NONE
- e. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.3 Dose Assessment

Two dose assessment specialists analyzed technical data. Dose assessment personnel worked well with the utility **staff** in confirming information, and **advising** the **Director** of the Radiation Protection Section (RPS) with useful data. The dose assessment staff utilized two different **computer** programs to verify proper dose assessment values. Members of the dose assessment staff understood their responsibilities, provided meaningful technical information, and were very professional,

- a. **MET:** Criteria 1.a.1., 1.d.1., 1.e.1., 2.a.1., 2.b.1. and 2.b.2.
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.4 Emergency Operations Facility

The utility operator's Emergency Operations Facility (EOF) is onsite and is an excellent facility from which **all** participating organizations can effectively manage ongoing emergency operations. Coordination, and the flow of technical information between the utility operator and the State officials were excellent. The State officials deployed to the EOF were **well** trained, followed procedures, and overall, performed their respective responsibilities in an efficient and professional manner.

- a. **MET:** Criteria 1.a.1., 1.b.1., 1.c.1., 1.d.1., 1.e.1, and 3.a.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 Joint Information Center

The two affected counties, State and utility Joint Information Center (JIC) staffs operated effectively and professionally to manage the flow of information *to* the public through press releases and press briefings. The public inquiry activity was efficient and was very well managed to ensure timely responses by organization spokespersons to emerging trends and inaccurate information.

- a. **MET:** Criteria 1.b.1., 1.d.1., 1.e.1, and 5.b.1.
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:**

Issue No.: 08-02-A-5.b.1-01

Condition: The Supplemental News Release for Emergency Alert System (EAS) messages was not effectively linked to **the** initial EAS broadcast and was not necessarily broadcast by the **EAS** station.

Possible Cause: The **EAS** broadcast message originates from the SEOC but the supplemental news release (containing required emergency instructions) is created, released and distributed **from** the JIC. **An** early news release with evacuation zone descriptions was provided *to* the media for background information prior to the

first EAS broadcast. It **was** not identified **as** supplemental information to be used by the EAS station following an EAS messages.

Although specific information on the evacuation zone description was provided to the media during a media briefing the State did not re-release the detailed information **as** a news release. Other information concerning reception centers, radiation decontamination/monitoring, **what** to take when evacuating, pets, medications, etc., **was** only included in County news releases from the JIC. The New Hanover and Rrunswick Counties' releases did not specifically identify them for use **as** EAS follow-up messages with supplemental information.

Reference: NUREG 0654, E.5,7; G.3.a; G.4.c

Effect: EAS stations would not necessarily **know** what supplemental information was expected to be broadcast following the EAS broadcast. **This** could result in the failure of critical emergency information being broadcast over the EAS station even though the information was covered in detail at the media briefing. Members of the public only listening to the EAS broadcast station might not promptly receive important information.

Recommendation: Specifically develop and identify news **releases** that contain emergency instructions that are to be broadcast **as** follow-on instructions with a header that provides unambiguous instructions to the media. The EAS supplemental information news release should contain priority handling instructions and be **faxed** to the EAS station along **with** the initial EAS message. Positive verification that the supplemental information has **to** be received **at** the station and that the station knows to make an immediate follow-on broadcast should be obtained from the originator at the JIC. **Early** advisory news **releases** that contain information related **to** the EAS should be re-released with broadcast instructions, as well,

Schedule of Corrective Action: The JIC and SEOC PIO checklists are being reviewed and modified to ensure that follow-on information is specifically identified so that all broadcast stations receiving the information can correctly correlate the information with the applicable EAS message.

- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

1.6 Radiological Field Monitoring Teams

Field Monitoring Teams (FMT) were pre-positioned at the North Carolina National Guard Armory located at the Wilmington International **Airport**. Particulate and iodine sampling were successfully demonstrated out-of-sequence. Supply inventories and instrumentation/source checks were completed, materials were in place [including dosimetry and potassium iodide (**KI**)], and equipment was calibrated. The FMTs demonstrated use of the primary and **backup** communication systems and routinely communicated results to the Field Monitoring Coordinator. Effective use of equipment, supplies and procedures facilitated the successful accomplishment of **all** tasks. **Team** members were cognizant of administrative and turn back exposure levels and routinely checked, recorded, and reported dosimeter readings. Both teams demonstrated competence and professionalism throughout the exercise.

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

1.7 Field Team Ingestion Pathway Activities

Teams were dispatched to field Locations within the 10-mile EPZ to collect water, soil and vegetation samples. The FMTs utilized prescribed procedures in identifying appropriate sample locations and collecting representative samples. Proper procedures were used **for** contamination control, packaging, labeling and securing **samples**. Both teams demonstrated competence and professionalaiism throughout the exercise.

- a. **MET:** Criterion 4.b.1.
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

1.8 Mobile Laboratory

Personnel from the State Division of Radiation Protection successfully demonstrated radiological analysis, and direction, and control of the state field teams. Seventeen individuals were directed from the mobile laboratory which was located at the National Guard armory at the Wilmington Airport. Contamination control by all personnel was excellent. The training and professionalism of all participants were evident.

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

1.9 Mobile Laboratory Ingestion Pathway Activities

Teams from the Department of Agriculture and Consumer Services, the Department of Environmental Health's Division of Public Water Supplies, and the DOE's RAP Teams from the Savannah River Site augmented state FMT's. Together they demonstrated the ability to successfully collect various environmental, food, water, and milk samples for analysis by the mobile laboratory.

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

1.10 River Clearing

River clearing was successfully demonstrated out-of-scquence by interview on October 23, 2002 with representatives from the U.S. Coast Guard Auxiliary (Marine Safety Office), the NC Department of Wildlife Resources and the North Carolina Marine Patrol. During the interview, personnei explained in detail the coordinated effort that would be utilized to provide waterway traffic and access control and warning on the Cape Fear River and the Inter-coastal Waterway within the ten Mile EPZ. Back-up route alerting is also accomplished by waterway warning operations that reach those areas that may be outside the range of utility sirens. Personnel interviewed were familiar with personal dosimetry. Federal and State personnel were professional and competent.

- a. MET: Criteria 3.d. 1., 3.a.I. and 5.a.3.
- b. DEFICIENCY: NONE
- e. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2. RISK JURISDICTIONS

2.1 BRUNSWICK COUNTY

2.1.1 Emergency Operations Center

The EOC Director demonstrated superb direction and control of his staff and led the risk counties through the Alert and Notification sequence in a very efficient and timely manner. The staff was dedicated, well trained and pro-active in preparing for contingencies. This resulted in a coordinated and successful demonstration of their capabilities to protect the county's citizens in the event of an incident at the Brunswick Nuclear Power Plant. The well trained staff should be commended for their hard work and dedication.

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

2.1.2 Protective Action for Schools

Officials from the Brunswick County Schools successfully demonstrated, by interview in the EOC, the ability to relocate school students. The Brunswick County Assistant Superintendent and the Director of Transportation participated in the interview as well as in all exercise activities in the EOC. Both individuals were knowledgeable of Brunswick County Schools and relocation plans and can adequately communicate with all schools and bus drivers. School officials demonstrated the early release of all students and the provision of buses for the relocation of the County's day care centers.

- a- **MET: Criteria 1.d.1. and 3.c.2.**
- b. **DEFICIENCY: NONE**
- e. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- a. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.1.3 Reception and Congregate Care

Brunswick County successfully demonstrated reception center and congregate care activities out-of-sequence at North Brunswick High School on October 24, 2002. Organizations participating in the demonstration included the Leland Fire and Rescue Squad and the Leland Emergency Medical services (EMS), both made up of strictly volunteers. North Brunswick High School has sufficient space for monitoring and decontamination of evacuees. The monitoring and decontamination areas were clearly designated with signs and ropes. Leland Fire and Rescue Squad personnel professionally registered, surveyed and decontaminated evacuees and their vehicles, and appropriately directed evacuees by pointing out the designated parking areas for clean and contaminated vehicles. Personnel were knowledgeable of dosimetry use, and wore appropriate self-reading and permanent record dosimetry. After being processed through the reception centers, evacuees were directed to the shelter.

The Cape Fear Chapter of the American Red Cross (ARC) professionally registered six evacuees on ARC forms. The Shelter Managers conducted a thorough walk-through of the

shelter and used a diagram to point out where various functions would be located. North Brunswick High School has all of the amenities to serve as a shelter for evacuees and emergency workers. All personnel were professional and cooperative.

- a. **MET:** Criteria 3.a.1., 6.a.1. and 6.c.1.
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.4 Emergency Worker Decontamination

The Leland Volunteer Fire Department successfully demonstrated emergency worker decontamination out-of-sequence on October **24,2002**. The decontamination station was set up in the parking lot of the North Brunswick High School where **signs** clearly designated monitoring, decontamination, re-monitoring, **and** parking areas. The monitoring and decontamination team was composed of an Incident Commander and four firemen from the Leland Volunteer Fire Department. Personnel conducted a thorough monitoring **and** decontamination sequence of a single vehicle and one emergency worker. The team **was well** trained **and** highly motivated.

- a. **MET:** Criteria 3.a.1. and 6.b.1.
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCAs - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.5 Traffic Control Points

A patrolman from the North Carolina Highway Patrol (NCHP) successfully demonstrated, by interview in the EOC, the ability to establish and maintain traffic **and** access control points (TCP). The officer was very familiar with TCP procedures, evacuation routes, steps necessary for impediments removal and the location of the reception centers. The

officer also demonstrated an excellent knowledge of the use of dosimetry, KI, and exposure limits for emergency workers.

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

2.1.6 Backup Route Alerting

Officers of the Brunswick County Sheriffs Department and the NCHP successfully demonstrated the ability to implement backup route alerting and notification of the public. **During** a silent test two sirens failed. The officers demonstrated through interview the ability to communicate with the Brunswick County Volunteer Fire and Rescue staff and local police departments to provide rescue vehicles with sirens and public address systems to alert and notify the public. The officers also displayed an excellent knowledge of the use of dosimetry, KI, and **exposure** limits for emergency workers.

- a. **MET:** Criteria 1.d.1., 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

2.1.7 Medical Drill

Hrunswick County successfully demonstrated the transportation and treatment of a contaminated-injured patient on Tuesday, October 22, 2002. Organizations participating in the medical drill included the Brunswick Emergency Medical Services (EMS) and Doshier Memorial Hospital. The EMS personnel appropriately surveyed the patient and the immediate surrounding area. They set up a perimeter around the area, used excellent

contamination control measures, wrapped **the** patient and transported him in a well-insulated ambulance to Doshier Memorial Hospital.

The Doshier Memorial Hospital Emergency Room (ER) personnel were prepared for the arrival of the patient. The walkway to the ER and the ER floor had protective coverings. Like the EMS personnel, the ER staff wore protective clothing and had appropriate direct reading and permanent record dosimetry. The ER staff were professional, and used appropriate monitoring, contamination control, and decontamination methods. The staff changed gloves frequently, consistently read their dosimetry, and thoroughly surveyed **the** patient and gurney before releasing the patient from the ER. Appropriate ER exit procedures were followed. The EMS and ER staff were very professional.

- a. **MET:** Criteria 3.a.1. and 6.d.1.
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCA -RESOLVED:** NONE
- f. **PRIOR ARCA -UNRESOLVED:** NONE

2.2 NEW HANOVER COUNTY

2.2.1 Emergency Operations Center

The EOC is staffed with experienced, dedicated, and knowledgeable professionals who worked well as a group. Communication among EOC staff was exceptional. The EOC Director provided excellent direction and control, frequent updates and briefings, and encouraged input from all personnel. The County Manager, Mayor of Carolina Beach, Sheriff's representative from Kure Beach, and a New Hanover County Commissioner participated in the protective action decision making process. Mobilization of response personnel, facilities and communication with Brunswick County, the State of North Carolina, and the Utility, were consistent. The EM 2000 system worked well,

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

24.2 Traffic Control Points

TCP's were demonstrated by interview in the New Hanover County Law Enforcement Center. The New Hanover County Sheriff's Department and NCHP Officers interviewed were thoroughly familiar with their responsibilities and duties. Each officer demonstrated professionalism and was well trained. The officers' knowledge of dosimetry, maximum authorized mission exposure, turn-back values, duties, and removing impediments was exceptional.

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

3. SUMMARY OF AREAS REQUIRING CORRECTIVE ACTION

3.1 2002 ARCAs

3.1.1 09-02-A-5.b.1-01
State of North Carolina
Joint Information Center

Condition: The Supplemental News Release for EAS messages **was** not effectively linked to the initial EAS broadcast and **was** not necessarily broadcast by the EAS station.

Possible Cause: The EAS broadcast message originates from the SEOC but the supplemental news release (containing required emergency instructions) is created, released and distributed from the JIC. An early news release with evacuation zone descriptions was provided to the media for background information prior to the first EAS broadcast. It was not identified as supplemental information to be used by the EAS station following an EAS messages.

Although specific information on the evacuation zone description **was** provided to the media during a media briefing the State did not re-release the detailed **information** as a news release. Other information concerning reception centers, radiation decontamination/monitoring, what to take when evacuating, pets, medications, etc., was only included in County news releases **from** the SIC. The New Hanover and Hrunswick Counties' releases did not specifically identify them for use **as** EAS follow-up messages with supplemental information.

Reference: NUREG 0654, E.5,7; G.3.a; G.4.c

Effect: EAS station? would not necessarily know what supplemental information was expected to be broadcast following the EAS broadcast. This could result in the failure of critical emergency information being

broadcast over the **EAS** station even though the information was covered in detail at the media briefing. Members of the public only listening to the **EAS** broadcast station might not promptly receive important information.

Recommendation: Specifically develop and identify news releases that contain emergency instructions that are *to be* broadcast as follow-on instructions with a header that provides unambiguous instructions to the media. **The EAS** supplemental information news release should contain priority handling instructions and be faxed to the **EAS** station along with the initial **EAS** message. Positive verification that the supplemental information has to be received at the station and that the station knows to make an immediate follow-on broadcast should be obtained from the originator at the **JIC**. Early advisory news releases that contain information related to the **EAS** should be **re-**released with broadcast instructions, *as well*.

Schedule of Corrective Action: The **JIC** and **SEOC** **PIO** checklists *are* being reviewed **and** modified to ensure that follow-on information is specifically identified *so* that all broadcast stations receiving the information can correctly correlate the information with *the* applicable **EAS** message.



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
ARES	Amateur Radio Emergency Services
CFR	Code of Federal Regulations
DOE	Department of Energy
DOT	Department of Transportation
DNR	Department of Natural Resources
DRD	Direct Reading Dosimeter
DRP	Division of Radiation Protection
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMS	Emergency Medical Service
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ER	Emergency Room
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
GE	General Emergency
JIC	Joint Information Center
KI	Potassium Iodide
mR	milliroentgen
mR/h	milliroentgen per hour
NCHP	North Carolina Highway Patrol
NCDRP	North Carolina Division of Radiation Protection
NOUE	Notification of Unusual Event

NRC NUREG-0654	Nuclear Regulatory Commission 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>
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIO	Public Information Officer
R	Roentgen
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
R/h	Roentgen(s) per hour
RO	Radiological Officer
RPS	Radiation Protection Section
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
SERT	State Emergency Response Team
SOG	Standard Operational Guide
SOP	Standard Operating Procedure
TCP	Traffic Control Point
TL	Team Leader
TLD	Thermoluminescent Dosimeter
IJSDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS

The following is a list of the personnel who evaluated the Brunswick Nuclear Power Plant exercise on November 19-20, 2002. The organization which each evaluator represents is indicated by the following abbreviations:

FEMA	- Federal Emergency Management Agency
ICF	- ICF Consulting, Incorporated
NRC	- Nuclear Regulatory Commission
FAA	- Federal Aviation Administration

Lawrence A. Robertson

RAC Chairman

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
------------------------	------------------	---------------------

Chief Evaluator

Robert Perdue

FEMA

STATE OF NORTH CAROLINA

State Emergency Operations Center

Robert Perdue

FEMA

Dose Assessment (SEOC)

Harry Harrison

ICF

Emergency Operations Facility

Robert Trojanowski

NRC

Joint Information Center

Brett Kriger

ICF

Mobile Laboratory

Bernie Hannah

ICF

Radiological Field Monitoring Team #1
(Observation/Training only)

Art Ball

ICF

Radiological Field Monitoring Team #2

Brad McCree

ICF

BRUNSWICK COUNTY

Emergency Operations Center

Tom Reynolds
Harold Dominey

FEMA
FAA

Protective Action for Schools

Rob Noecker

ICF

Reception Center
(10-24-02)

Robert Perdue
Dave Moffet

FEMA
ICF

Congregate Care (10-24-02)	Robert Perdue	FEMA
	Dave Moffet	ICF
Emergency Worker Decontamination (10-24-02)	Robert Perdue	FEMA
	Dave Moffet	ICF
Traffic and Access Control	Rob Noecker	ICF
Back-up <i>Route</i> Alerting (10-23-02)	Rob Noecker	ICF
Medical Drill (10-22-02)	Robert Perdue	FEMA
	Dave Moffet	ICF

NEW HANOVER COUNTY

Emergency Operations Center	Eddie Hickman Jennifer Roberson	FEMA ICF
Traffic Control Points	Jennifer Roberson	ICF

HOST COUNTIES EOC

BLADEN COUNTY

Emergency Operations Center	Helen Wilgus	FEMA
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COLUMBUS COUNTY

Emergency Operations Center	Dave Moffet	ICF
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PENDER COUNTY

Emergency Operations Center	Joseph Canoles	FEMA
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HORRY COUNTY

Emergency Operations Center	Josh Moore	ICF
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INGESTION PATHWAY FEDERAL EVALUATORS:

(11-20-02 – 9:00 a.m., SEOC Raleigh, NC)

Lawrence Robertson	FEMA
Robert Perdue	FEMA

APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

This appendix **lists** the exercise criteria, which were scheduled for demonstration in the Brunswick Nuclear Power Plant exercise on November 19-20, 2002 and the extent-of-play agreement approved by FEMA Region IV.

A. Exercise Criteria

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



Federal Emergency Management Agency

Region IV
3003 Chamblee-Tucker Rd
Atlanta, GA 30341

August 19, 2002

Mr. Scott Carpenter
Exercise Officer
Division of Emergency Management
4713 Mail Service Center
Raleigh, North Carolina 27699-4713

Dear Mr. Carpenter:

The Extent of Play Agreement for the Brunswick **full** participation-ingestion pathway scheduled for November 19, 2002 has been approved with the following clarifications:

- We recommend having someone fully explain the Alert and Notification System in the Federal Evaluators meeting prior to the exercise.
- The several agencies that the State of North Carolina has requested to play during the exercise have committed to playing. I have indicated this in telephone conversations with you and Steve Payne and in an August 14, 2002 letter.

Thank you for your cooperation and we look forward to receiving your scenario and technical data before or on September 20, 2002. Please call me at 770/220-5464 if you have questions.

Sincerely,

A handwritten signature in black ink, which appears to read "Robert E. Perdue".

Robert Perdue, EMPS
Technological Services Branch



North Carolina Department of Crime Control and Public Safety

Division of Emergency Management

4713 Mail Service Center • Raleigh, NC 27699-4713

Michael F. Easley
Governor

Bryan E. Beatty
Secretary

August 14, 2002

Robert E. Perdue, Ph.D.
Training, Exercise, and Evaluation Branch
Federal Emergency Management Agency, Region IV
3003 Chamblée - Tucker Rd.
Atlanta, Ga. 30341

Dear Dr. Perdue:

The attached Extent of Play Agreement is a revision of the one sent to your attention on July 30, 2002. All concerns addressed in your letter are included with the following exceptions:

Page 2, under Scenario does not include details of the communications failure, because this *is* sensitive information and not for general player awareness.

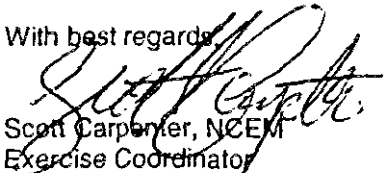
Page 13 does not need a detailed explanation of Alert & Notification procedures in **NC**. This is in the REP plan **for** each site.

Page 17 – an address for North Brunswick High School will be provided at the pre-exercise briefing to the federal evaluator.

We have invited several federal agencies to participate during the IPZ exercise on day two, through your office, **but** have received no feedback on *who* and what agencies *will* be participating. Please provide this information **as soon** as possible to this office.

Thank you for your time and consideration and we look forward to your letter of acceptance and of comment within the next two weeks.

With best regards,


Scott Carpenter, NCEM
Exercise Coordinator

c: Steve Payne
James Smith
Tom Collins
Doug Waas
Randy Thompson
Dan Summers
Mike Alford

116 West Jones Street 2 Raleigh, North Carolina 27603-1335 ☎ (979)733-3667

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**BRUNSWICK 2002 CRITERION MATRIX
FULLSCALE IPZ EXERCISE**

Evaluation Sub Elements	N C S E R T	N E W H A N O V E R	B R U N S W I C K	B L A D E N	C O L U M B U S	P E N D E R	H O R R Y S C
(EPZ) = Emergency Planning Zone County (IPZ) = Ingestion Pathway Zone County							
E - Evaluated T - Training Only O - Off Scenario							
Mole:							
• EPZ counties are also part of the IPZ • <i>Day Two Tabletop Demonstrations in Italics</i>		(EPZ)	(EPZ)	(IPZ)	(IPZ)	(IPZ)	(IPZ)
1. Emergency Operations Management							
1.a.1. Mobilization of Response Personnel	E	E	E	T	T	T	T
1.b.1. Facilities	E	E	E	T	T	T	T
1.c.1. Direction and Control	E	E	E	T	T	T	T
1.d.1. Communications Equipment	E	E	E	T	T	T	T
1.e.1. Equipment & Supplies to Support Operations	E	E	E	T	T	T	T
2. Protective Action Decisionmaking							
2.a.1. Emergency Worker Exposure Control	E	E	E				
2.b.1. Rad Assessment PARs & PADs Based on Available Information	E	E	E				
2.b.2. Rad Assessment of PARs & PADs for General Public	E	E	E				
2.c.1. Protective Action Decisions for Protection of Special Populations		E	E				
2.d.1. <i>Radiological Assessment and Decision Making for Ingestion Exposure</i>	E	E	E	T	T	T	T
2.e.1. <i>Radiological Assessment and Decision Making for Relocation, Re-entry & Return</i>	E	E	E	T	T	T	T
3. Protective Action Implementation							
3.a.1. Implementation of Emergency Worker Exposure Control	E	E	E				
3.b.1. Implementation of KI Decisions	E	E	E				
3.c.1. Implementation of PADs for Special Pops.			E				
3.c.2. Implementation of PADs for Schools			E				
3.d.1. Implementation of Traffic and Control	E	E	E				
3.d.2. Impediments to Traffic and Access Control	E	E	E				
3.e.1. <i>Implementation of Ingestion Pathway Decisions Using Adequate Information</i>	E	E	E	T	T	T	T
3.e.2. <i>Implementation of Ingestion Pathway Decisions Showing Instructional Materials</i>	E	E	E	T	T	T	T
3.f.1. <i>Implement Relocation, Re-entry, and Return</i>	E	E	E	T	T	T	T

Evaluation Sub Elements	N C S E R T	N E W H A N O V E R	B R U N S W I C K	B L A D E N	C O L U M B U S	P E N D E R	H O R R Y S C
(EPZ) = Emergency Planning Zone (IPZ) = Ingestion Planning Zone E - Evaluated T - Training Only O - Off Scenario Note: <ul style="list-style-type: none"> • EPZ counties are also part of the IPZ • <i>Day Two Tabletop Demonstrations in Italics</i> 		(EPZ)	(EPZ)	(IPZ)	(IPZ)	(IPZ)	(IPZ)
4. Field Measurement and Analysis							
4.a.1. Plume Phase Field Measurements & Analysis Equipment	E						
4.a.2. Plume Phase Field Measurements & Analysis management	E						
4.a.3. Plume Phase Field Measurements & Analysis Procedures	E						
<i>4.b. Post Plume Phase Field Measurements & Sampling</i>	E-O						
4.c. Laboratory Operations	E-O						
5. Emergency Notification and Public Information							
5.a.1. Activation of the Prompt Alert and Notification	E	E	E				
5.a.2. Activation of the Prompt Alert and Notification 15 Minute Fast Breaker	n/a	n/a	n/a				
5.a.3. Exception Areas and Back-up Alert and Notification	E		E				
5.b.1. Emergency Information & Instructions for the Public & Media	E	E	E	T	T	T	T
6. Support Operations/Facilities							
6.a.1. Monitoring & Decontamination of Evacuees & Emergency Workers' Registration of Evacuees			E-O				
6.b.1 Monitoring & Decontamination of Emergency Worker Equipment			E-O				
6.c.1. Temporary Care of Evacuees			E-O				
6.d.1. Transportation & Treatment of Contaminated, Injured Individuals (MS-1)			E-O				

** Revised by Task Force/FEMA Consensus, June 20, 2002

Brunswick Exercise Field Activities Schedule

<p>October 22, 2002 Brunswick</p>	<p>Transportation & Treatment of Contaminated individual Doshier Hospital Off-scenario at 6:30 p.m.</p>
<p>October 23, 2002 SERT</p>	<p>Traffic & Access Control (Waterway Security) (3.d.1) U.S. Coast Guard Auxiliary Office/Cape Fear River Off-scenario at 10:00 a.m.</p>
<p>SERT</p>	<p>Back-up Alert & Notification (Waterway Warning) (5.a.3) U.S. Coast Guard Auxiliary Office/Cape Fear River Off-scenario at 11:00 a.m.</p>
<p>October 24, 2002 Brunswick</p>	<p>Monitoring & Decon of Evacuees & Emergency Workers and Registration of Evacuees North Brunswick High School Off-scenario at 7:00 p.m.</p>
<p>Brunswick</p>	<p>Monitoring & Decon of Emergency Worker Equipment North Brunswick High School Off-scenario at 7:00 p.m.</p>
<p>Brunswick</p>	<p>Temporary <i>Care</i> of Evacuees North Brunswick High School Off-scenario at 7:00 p.m.</p>
<p>November 19, 2002 SERT</p>	<p>Plume Phase Field Measurement (4.a.1, 2, & 3) Army National Guard Facility @ Airport On-scenario at 9:30 a.m.</p>
<p>Brunswick</p>	<p>Traffic & Access Control Brunswick County EOC On-scenario at 10:00 a.m.</p>
<p>New Hanover</p>	<p>Traffic & Access Control New Hanover County EOC On-scenario at 10:00 a.m.</p>
<p>Brunswick</p>	<p>Protective Actions for School Children Brunswick County EOC On-scenario at 11:00 a.m.</p>
<p>Brunswick</p>	<p>Back-up Alert & Notification Brunswick County EOC On-scenario at 11:00 a.m.</p>
<p>November 20, 2002 SERT</p>	<p>Post Plume Phase Field Measurement (4.b.1 & 2) Army National Guard Facility @ Airport Off-scenario at 9:30 a.m.</p>

August 16, 2002

Brunswick Nuclear Power Plant Full-scale Ingestion Pathway Exercise

2002 Extent of Play Agreement

General Information

A. Bay **One: November 19, 2002 – Full Scale EPZ Exercise**

- Day One activities will begin at approximately 8:00 a.m.
- Sirens will be simulated by using an actual Silent Test at Site Area Emergency and General Emergency
- Day One activities for the Emergency Plume Exposure Phase of the exercise will conclude when all exercise criteria have been accomplished.
- IPZ counties will participate in Rumor Control and JIC operations for training purposes.
- Brunswick's Animal Response Team will demonstrate procedures for Training Only

Day **Two: November 20, 2002 – Large Scale IPZ Tabletop Exercise**

- Day Two activities will begin at 9:00a.m. in Raleigh, NC.
- Participants for Day Two of the exercise will include the SERT, CP&L, Brunswick, Bladen, Columbus, New Hanover, and Pender Counties. NC 2nd Horry County. SC. Federal participants will include representatives from FEMA, DOE RAP Team, NRC and others (refer to players list).
- Day Two activities will be based on guidance from NUREG-1514 "Guidance for a Large Tabletop Exercise for a Nuclear Power Plant".
- Radiation Protection will demonstrate sampling techniques and procedures for the ingestion Pathway Exposure portion of the exercise.

B. **Other Exercise Details**

- State and EPZ counties will establish a baseline for the new exercise evaluation criterion during this exercise.
- State and county participants will be pre-positioned at exercise locations.
- Utility will provide a liaison to State EOC, Brunswick and New Hanover County EOCs.
- A state or county escort will accompany Federal Evaluators to out-of-sequence demonstrations.

- A State Controller and Federal Evaluator will be located in the State EOC, Brunswick EOC, New Hanover County EOC, the JIC, and at off-scenario demonstrations and field activities.
- A Federal and SERT Representative will be located in each of the IPZ counties during Bay One of the exercise to provide input on facility operations, communications and PIO activities as part of the joint FEMA/State/ Local partnership agreement.
- Exercise participants will have the opportunity to remediate and re-demonstrate activities where a problem existed immediately upon identifying the error with the approval of the **federal** evaluator.
- All demonstrations will be in accordance with the approved Extent of Play Agreement.

C. Scenario

- Scenario's for Bay One & Two will be developed by the Utility in consultation with the State using FEMA guidelines.
- At least one wind shift will be built into the scenario on Day One for PAD process.
- At least one communication failure will occur,

D. Meeting Times

i. Federal Evaluator Briefing:

Brunswick Emergency Services Building
3325 Old Ocean Highway
Bolivia, NC

Date & Time: 2:00 p.m., Monday, November 18, 2002

ii. State & County Internal Critique:

State Emergency Operations Center
115 West Jones Street
Raleigh, NC

Date & Time: 3:30 p.m., Wednesday, November 20, 2002
(Immediately following the Ingestion Pathway Exercise)

iii. Participant's Out Brief:

Brunswick Nuclear Plant Visitor Center
Highway 87
Southport, NC

Date & Time: 10:00 a.m., Friday, November 22, 2002

iv. Public Out Brief:

Brunswick Nuclear Plant Visitor Center
Highway 87
Southport, NC

Date & Time: 11:30 a.m., Friday, November 22, 2002

1. EMERGENCY OPERATIONS MANAGEMENT

1.a. – Mobilization

Criterion 1.a.1

OROs will use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner.

(NUREG-0654, A.4., D.3., 4., E.1., 2., H.4.)

EXTENT OF PLAY:

- Participants: Evaluated: NC SERT, Brunswick & New Hanover Counties
Training Only: Bladen, Columbus & Pender Counties, NC & Horry County, SC.
- All state and local response personnel will be pre-positioned.
- Alert rosters will be provided to FEMA evaluators. Players will discuss alert notification procedures with the evaluator.
- Radiation Protection's Mobile Laboratory and other field activities will be conducted from the NC National Guard Facility near the Wilmington International Airport in Wilmington, NC. Field activities and demonstrations will take place on scenario the day of the exercise.
- **IPZ** Counties will simulate mobilization of response personnel. Discussion of mobilization will be at the **EOC** when demonstrating call down procedures. Some personnel may be called-up for "Training Only" and not for evaluation.

1.b. – Facilities

Criterion 1.b.1

Facilities **are** sufficient **to** support the Emergency Response.

(NUREG-0654, H.)

EXTENT OF PLAY:

- Participants: Evaluated: NC SERT, Brunswick & New Hanover Counties
Training Only: Bladen, Columbus & Pender Counties, NC & Horry County, SC.
- **IPZ** counties will demonstrate for "Training Only" as part of the joint FEMA/State partnership agreement.

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., 2.a., b.)

EXTENT OF PLAY:

- Participants: Evaluated: NC SERT, Brunswick & New Hanover Counties
Training **Only**: Bladen, Columbus & Pender Counties, NC & Horry County, SC.

- Brunswick County will be the lead-coordinating county in North Carolina until Site Area Emergency. Following the simulated sounding of sirens and issuance of the first PAD recommendations to the public, New Hanover will request the State assume direction and control.
- The State of North Carolina, Brunswick, New Hanover, Bladen, Columbus, and Pender Counties, NC and Horry County, SC, will coordinate decisions and keep each other advised *on* actions taken throughout the exercise.

1.d – Communications Equipment:

Criterion 1.d.1:

At least two communication systems are available and operate properly, and communication links are established with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1.2.)

EXTENT OF PLAY:

- **Participants: Evaluated:** NC SERT, Brunswick & New Hanover Counties
Training Only: Bladen, Columbus & Pender Counties, NC & Horry County, SC.
- There will be one planned Communication breakdown/failure during the exercise. A breakdown will test *one* alternate communication link as a back-up to the Decision Line.
- EM2000 will be demonstrated during this exercise.

1.e – Equipment and Supplies to Support Operation:

Criterion 1.e.1:

Equipment, maps, displays, dosimeters, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG-0654, H., J.10.a.b.e.f.j.k., 11, K.3.a.)

EXTENT OF PLAY:

- **Participants: Evaluated:** NC SERT, Brunswick & New Hanover Counties
Training Only: Bladen, Columbus & Pender Counties, NC & Horry County, SC.
- Availability and currency of KI will be verified by FEMA Staff Assistance Visit to the EPZ Counties prior to the exercise.
- Dosimeters will be inspected by FEMA Staff Assistance Visit to the EPZ Counties prior to the exercise.
- Ingestion Pathway (IPZ) protective measures (NUREG Para J.11) will be demonstrated on Bay Two during the IPZ Tabletop Exercise in Raleigh, NC.

2. PROTECTIVE ACTION DECISION MAKING

2.a – Emergency Worker Exposure Control:

Criterion 2.a.1:

OROs use a decision making process, considering **relevant** factors and appropriate coordination, **to** insure 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).

EXTENT OF PLAY:

- Participants: NC SERT, New Hanover & Brunswick Counties.
- Personnel at the State, Brunswick & New Hanover County EOCs will discuss the decision making process and distribution procedures for KI with the federal evaluator.
- No distribution of actual or simulated KI will be accomplished

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** on-site and off-site environmental conditions.

(NUREG-0654, I.8., 10., 11., & Supplement 3.)

EXTENT OF PLAY:

- Participants: NC SERT, New Hanover & Brunswick Counties.
- Radiation Protection will establish an independent dose assessment and projection team at the State EOC. This team will communicate with the Utility EOC, State Mobile Lab and deployed field survey teams to obtain data for developing dose projections.
- Back-up dose assessment will be demonstrated at State EOC.
- Federal resources available to assist the state in tracking the radioactive plume will be identified.

Criterion 2.b.2:

A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy).

(NUREG-0654, J.9., 10.m.)

EXTENT OF PLAY:

- **Participants:** NC SERT, New Hanover & Brunswick Counties.
- Radiation Protection will analyze technical data and make recommendations to SERT Leader who in turn will make recommendations to the Brunswick & New Hanover EM Coordinators.
- Weather data will be pre-determined and will include a wind shift during the exercise in order to demonstrate OROs capability to adapt to changes requiring protective actions.
- Brunswick & New Hanover Counties will participate in the decision making process for PARS.

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., 10.c.d.e.g.)

EXTENT OF PLAY:

- Participants: New Hanover & Brunswick Counties
- Counties will demonstrate their procedures through discussion with the Federal Evaluator, by using a special populations list.
- Distribution of KI to institutionalized individuals, who cannot be evacuated, will be discussed with the Federal Evaluator.

2.d - Radiological Assessment & Decision Making for Ingestion Exposure

Criterion 2.d. 1:

Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria.

(NUREG-0645 I.8., J.11.)

- ***Participants:*** NC SERT, Brunswick, New Hanover, Bladen, Columbus, Pender Counties, NC and Horry County, SC. Federal Agencies will also participate at the State EOC in Raleigh
- ***This activity will take place on Day Two during the IPZ tabletop exercise.***

2.e. - Radiological Assessment & Decision Making for Radiological Assessment and Decision Making for Relocation, Return, & Re-entry

Criterion 2.e.1:

Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plans and procedures.

(NUREG-0654, A.1.b., I.10.,M)

- *Participants: NC SERT, Brunswick, New Hanover, Bladen, Columbus, Pender Counties, NC and Horry County, SC, and invited Federal Agencies will participate at the State EOC in Raleigh*
- *This activity will take place on Day Two during the IPZ tabletop exercise.*
- *A Recovery/Re-entry Plan will be developed by participants.*

3. PROTECTIVE ACTION IMPLEMENTATION

3.a - Implementation of Emergency Worker Exposure Control:

Criterion 3.a.1:

The OROs issue appropriate dosimeters and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures.

Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart.

(NUREG-0654, K.3.)

EXTENT OF PLAY:

- Participants: NC SERT, New Hanover & Brunswick Counties
- Radiation Protection will provide technical advice and assistance to the state and counties.

3.b - Implementation of KI Decision:

Criterion 3.b.1:

KI and appropriate instructions are available should a decision to recommend Use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals is maintained.

(NUREG-0654, E.7., J.10. e, f.)

EXTENT OF PLAY:

- Participants: NC SERT, New Hanover & Brunswick Counties.
- State ARCA from Catawba Exercise will be corrected during this exercise for failure by the NC SERT to communicate to the counties the decision to ingest KI.
- Demonstration of KI will be through "Discussion Only" at State and County EOCs.
- Distribution of KI to the General Public will not be demonstrated during this exercise.

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

Criterion 3.c.1:

Protective action decisions are implemented for special population groups within areas subject to protective actions.

(NUR REG-0654, E.7.,J.9.,10.c.d.e.g.)

EXTENT OF PLAY:

- Participants: Brunswick County
- New Hanover County will demonstrate in 2004.
- A current list of Special Needs Populations will be provided to the Federal Evaluator.
- Evacuation/relocation requirements will be demonstrated through discussions at the EOC. based on the scenario and county implementation procedures.
- Contact via telephone with special population groups for PADs and transportation resources will be simulated. However, one actual phone call can be made to a special population facility at the request of the evaluator for demonstration purposes.

Criterion 3.c.2:

OROs/School officials decide upon and implement protective actions for schools.

(NUREG-0654, J.10.c.,d.,g.)

EXTENT OF PLAY:

- Participants: Brunswick County
- New Hanover County will demonstrate in 2004.
- School evacuation procedures and interviews will be demonstrated via discussion with key school staff members on scenario at County EOC.
- Law enforcement agencies will discuss school bus escort procedures during their traffic and access control interviews as described in 3.d.

Brunswick Schools for evaluation include:

Brunswick County School Administration
Southport Primary School

Time: On-Scenario, November 19,2002 @ 11:00 a.m.

3.d – Implementation of Traffic and Access Control.

Criterion 3.d.1:

Appropriate traffic and access control **is** established. Accurate instructions **are** provided **to** traffic and access control personnel.

(NUREG-0654, J.10.g., j, k.)

EXTENT OF PLAY:

- Participants: SERT, New Hanover & Brunswick Counties.
- Traffic control points will be discussed with the Federal Evaluator at each County EOC. Sheriff/police or State law enforcement personnel will discuss proper procedures, equipment and turn back values.
- When State is in direction & control the SERT Leader will determine appropriate access control measures to restrict access to contaminated areas.

New Hanover County representatives available for interview include:

New Hanover County Sheriff's Department
NC State Highway Patrol

Time: On-scenario, November 19, 2002 at 10:00 a.m.

Brunswick County Representatives available for interview include:

Brunswick County Sheriff's Department
NC State Highway Patrol

Time: On-scenario, November 19, 2002 at 10:00 a.m.

Waterway Warning:

Representatives available for interview include:

U.S. Coast Guard (Lead Agency)
NC Marine Fisheries
NC Wildlife (Enforcement Division)

Time: Off Scenario, October 23, 2002 at 10:00 a.m.

Location: U.S. Coast Guard Auxiliary Office & Cape Fear River.

Criterion 3.d.2:

impediments **to** evacuation **are** identified and resolved

(NUREG-0654, J.10.,j.,k.)

EXTENT OF PLAY:

- Participants: **NC SERT**, New Hanover & Brunswick Counties.
- During the interview process, **as** scheduled in 3.d.1 above, officers will identify impediments to evacuation based on a simulated set of circumstances and questions posed by the federal evaluator.

3.e Implementation of Ingestion Pathway Decisions

Criterion 3.e.1.

The ORO demonstrates the availability and appropriate use of adequate information regarding water, food, supplies, milk, and agricultural production within the ingestion exposure pathway emergency-planning zone for implementation of protective actions.

- *Participants: NC SERT, Brunswick, New Hanover, Bladen, Columbus, Pender Counties, NC and Worry County, SC, . and Federal Agencies will participate at the State EOC in Raleigh on Day Two during the IPZ Tabletop Exercise.*
- *Criteria will be based on FDA 2nd EPA document recommendations.*
- *Maps describing and showing pertinent data within the 50-mile ingestion pathway will be available during the exercise.*

Criterion 3.e.2

Appropriate measures, strategies, and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production.

- **Participants:** - NC SERT, Brunswick, New Hanover, Bladen, Columbus, Pender Counties, NC and Horry County, SC, . and Federal Agencies will participate at the State EOC in Raleigh on Day Two during the IPZ Tabletop Exercise.

Criterion 3.f.f

Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented.

- *Participants: NC SERT, Brunswick, New Hanover, Bladen, Columbus, Pender Counties, NC and Horry County, SC, . and Federal Agencies will participate at the State EOC in Raleigh on Day Two during the IPZ Tabletop Exercise.*
- *Tabletop scenario will include discussion items for relocating individuals from contaminated areas; ability to control re-entry and temporary re-entry needs; return of general public to areas evacuated during the plume phase.*

FIELD MEASUREMENT AND ANALYSIS

4.a - Plume Phase Field Measurement & Analysis

Criterion 4.a.1:

The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10, I.8., 9., 11.)

EXTENT OF PLAY:

- **Participants:** NC SERT, Radiation Protection.
- Radiation Protection will demonstrate this criterion using two field survey teams.

- Radiation Protection's mobile laboratory and other field activities will be conducted from the Army National Guard facility at the Wilmington International Airport
- Date and Time: On-scenario, November 19, 2002 @ approximately 9:30 a.m.

Criterion 4.a.2:

Field teams are **managed to** obtain sufficient information to help characterize the release and to control radiation exposure.

(NUREG-0654, I.8., 11., J.10.a).

EXTENT OF PLAY:

- Participants: NC SERT, Radiation Protection.
- Radiation Protection will demonstrate this criterion using two field teams.
- Radiation Protection's mobile laboratory and other field activities will be conducted from the Army National Guard facility at the Wilmington International Airport
- Date & Time: On-scenario, November 19, 2002 @ approximately 9:30 a.m.

Criterion 4.a.3:

Ambient radiation measurements are made and recorded at appropriate locations, **and** radioiodine and particulate samples are collected. Teams must **move to an** appropriate low background location to determine whether any significant (as specified **in** the plan and/or procedures) amount **of** radioactivity **has** been collected on the sampling media.

(NUREG-0654, I.8., 9., 11.)

EXTENT OF PLAY:

- Participants: NC SEWT, Radiation Protection
- Radiation Protection's mobile laboratory and other field activities will be conducted from the Army National Guard facility at the Wilmington International Airport
- Date & Time: On Scenario, November 19, 2002 @ approximately 9:30 a.m..

4.b - Post Plume Phase. Field Measurements & Sampling

Criterion 4.b.1

The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making.

- *Participants: NC SERT, Radiation Protection & Other Supporting Agencies as appropriate.*
- *Radiation Protection's mobile laboratory and other field activities will be conducted from: Army National Guard facility at the Wilmington International Airport*

- Date & Time: Off Scenario, November 20, 2002 @ approx. 9:30 a.m.

4.c. - Laboratory Operations

Criterion 4.c.1

The laboratory is capable of performing required radiological analyses to support protective action decisions.

- Participants: NC SERT, Radiation Protection.

- Radiation Protection's mobile laboratory and other field activities will be conducted from: Army National Guard facility at the Wilmington International Airport

- Date & Time: Off Scenario, November 20, 2002

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: (1) identification of the State or local government organization and the authority for providing the alert signal and instructional message; (2) identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant; (3) reference to REF-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and (4) a closing statement asking the affected and potentially affected population to stay tuned for additional information.
(NUREG 10 CFR Part 50, Appendix E & NUREG-0654, E.1.4.5.6., 7)

EXTENT OF PLAY:

- Participants: NC SERT, New Hanover & Brunswick Counties.
- At Site Area Emergency North Carolina's counties will be in Direction and Control. Following the sounding of the sirens (simulated) and the first PAD recommendations to the public, New Hanover County will request the State to take direction and control.
- Brunswick County will be the "Lead County", and will coordinate and conduct the countdown for siren activation. An actual silent test will be conducted to simulate the sounding of sirens. (Silent test may be terminated following receipt of siren data to prevent public concern)
- PAD messages and news releases will be coordinated by the states and counties. EAS messages will be in accordance with Part 11 of FCC Rules & Regulations, previously approved for North Carolina by FEMA.

Criterion 5.a.3:

Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by 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:

- Participants: U.S. Coast Guard, NC SERT & Brunswick County
- An actual silent test will be conducted and sounding of the sirens simulated. A feedback sheet will show if a siren has failed and if backup route alerting around the failed siren would be necessary.
- New Hanover will demonstrate in 2004
- If a siren has failed, back-up alerting will be discussed with the Federal Evaluator for a pre-determined zone (siren failure simulated).

Brunswick County will demonstrate by discussion only at the Brunswick County EOC.

Date and Time: On-Scenario, Tuesday, November 19, 2002 at 11:00 a.m.

U.S. Coast Guard & NC SERT (NC Wildlife Commission, Marine Fisheries): Back-up route alert and notification will be demonstrated at the US Coast Guard Auxiliary Office by discussion.

- If requested by the Federal evaluator a Marine Fisheries or Wildlife boat will be available to take the evaluator out on the Cape Fear River to demonstrate the actual procedures for marine warning of boaters.

Date and Time: Off-Scenario, October 23, 2002 at 11:00 a.m.

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.a.,b.,c.)

EXTENT OF PLAY:

- Participants: Evaluated: NC SERT, Brunswick & New Hanover Counties
Training Only: Bladen, Columbus & Pender Counties, NC & Worry County, SC.
- PIOs will receive rumor control calls at the JIC once it is activated. Approximately six calls per hour will be made to each state and county PIO represented at the JIC.
- Counties will receive three or four calls per hour prior to the activation of the JIC and will prepare "one" news release. News releases shall be coordinated between counties prior to JIC activation.

- Once JIC is operational two rumors will be identified as well as any trends and appropriate actions taken to address them,
- IPZ Counties will demonstrate for Training Only as part of the FEMA/State partnership agreement.

6. 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 adequate space, resources and trained personnel to provide monitoring, decontamination and registration of emergency workers and evacuees.
(NUREG-0654, J.10.h; K.5.b.)

EXTENT OF PLAY:

- Participants: Brunswick County
- One portal monitor will be demonstrated.
- Two emergency workers will be monitored.
- One emergency worker will be decontaminated using water.
- General population decontamination procedures will be simulated and conducted by interview.
- New Hanover County will demonstrate in 2004.

Brunswick County:

Leland Fire & Rescue will demonstrate at:

North Brunswick High School

Date & Time: Off-scenario, Thursday, October 24, 2002 at 7:00 p.m.

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:

- Participants: Brunswick County.
- New Hanover County will demonstrate in 2004 .
- Two vehicles will be monitored and decontaminated using water at the following times and locations:

Brunswick County:

Leland Fire & Rescue will demonstrate at:

North Brunswick High School

- address to be provided at pre-exercise briefing

Date & Time: Off-scenario, Thursday, October 24, 2002 at 7:00 p.m.

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 Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities.

(NUBEG-0654, J.10.h., 12.)

EXTENT OF PLAY:

- Participants: Brunswick County
- New Hanover County will demonstrate Alderman H.S. and Haggard H.S. in 2004
- Six individuals per monitoring station will be demonstrated.

Brunswick County:

American Red Cross will demonstrate at:

North Brunswick High School

Date & Time: Off-scenario, Thursday, October 24, 2002 at 7:00 p.m.

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:

- Participants: Brunswick County
- New Hanover County will demonstrate in 2003.

Brunswick County:

Brunswick County EMS and Doshier Hospital Personnel will demonstrate at Doshier Hospital

Date & Time: Off-scenario, Tuesday, October 22, 2002 at 6:30 p.m.

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 Runswick Nuclear **Power** Plant exercise on November 19-20,2002.

This exercise scenario was submitted by the State **of** North Carolina and Progress Power **and** Light Company and approved by **FEMA** Region IV.

**November 2002, Biennial Exercise
Narrative Summary**

Note:

The **Drill** will be conducted with the Brunswick Plant Simulator in the interactive mode. Times given are for planning purposes only. Actual times may vary due to dynamic response of the Simulator.

Initial Conditions

The exercise begins with Unit 1 at **94 %** power and Unit 2 is at 80% power.

Unit 1 Initial Plant Conditions:

The plant is at **94 %** power on day **488** of a continuous run.

Equipment Out of Service:

1A EHC Pump is under clearance after tripping, I&C is investigating.

Unit 2 Initial Plant Conditions:

The plant is at 80 % power, end of cycle with **GP-13** implemented.

Equipment Out of Service:

2B SBT is under clearance for charcoal replacement.

2B Core Spray Pump is under clearance for motor bearing replacement and will be returned to service tomorrow.

Meteorological Information:

Forecast:

Winds are **out** of the **SSE** and steady. No precipitation is anticipated for the next **few days**. Winds will shift to a more southerly direction later in the day. Wind Direction will be from 155 degrees at the start of the exercise.

Wind Speed 5 - 7 mph

Temperature High: **55** Low: 47

Conditions at time of release:

Wind Direction from 157 degrees

Wind speed 7 mph

Temperature: 50 degrees

Stability Class: D

0800 Unusual Event Classification

The initial plant conditions and shift briefing will be provided to the CR crew. During this time, the crew will be informed of equipment **out** of service and other irregularities. A Loss of Offsite Power (LOOP) to U-2 will occur due to a unknown grid problem. The 'Load dispatcher' will provide additional grid problem information. The LOOP results in a reactor scram, Group 1 isolation, all control rods fully insert and SRV's lift to control pressure, and a turbine trip. The LOOP will continue for the duration of the exercise, Unit 1 reports no visual damage and is proceeding with normal operations. DG 3 starts and synchronizes. DG 3 starts and synchronizes then trips 45 seconds later. The crew will enter AOP-036.1.

An **UNUSUAL EVENT** is declared due to a Loss of off-site power.

0915 Alert Classification

The operating crew will receive a LOCA initiation signal with falling RCS pressure with rising drywell pressure and temperature. This indicates > 50 GPM leak rate and an **ALERT** is declared due to abnormal primary leak rate. The line break does not cause initiation of LPCI, Core Spray, or **ADS** for adequate core cooling

An **Alert** is declared due to abnormal primary leak rate > 50 GPM

10:40 Site Area Emergency

LPCI initiation is required for adequate core cooling as a result of loss of coolant accident. After the LPCI initiation signal is received, the RHR A injection valve fails to open. **Also**, the HPCI system fails.

A **Site Area Emergency** is declared due abnormal primary leak rate with low-pressure coolant injection required for adequate core cooling.

12:15 General Emergency

RHR pumps will fail and the operation crew will **be** unable to provide adequate make-up for the reactor coolant system - **General Emergency** will be declared - **As** Rx level continues to drop and level reaches the top of active fuel (TAF), fission products from the damaged fuel are released into the RCS and then into the primary containment (Drywell & Torus). A RCIC steam line break will occur which will release significant amounts of coolant into the reactor building. When the crew, or personnel in the reactor building, notes the release, isolation of the system from the control board will be attempted **but** unsuccessful. This provides a release path through the Standby Gas Treatment System. The **Rx** Bldg atmosphere will be released through the 2R SGBT system with degraded filtering performance. This will provide the off-site release to exercise the Environmental

Monitoring teams. A continuous monitored release will occur until the exercise is terminated.

14:00-14:30: Terminate Exercise

Objectives **will be** validated and the exercise **will** terminate.