Harris Nuclear Plant Exercise March 3, 2009

Final Report - Radiological Emergency Preparedness Program

June 2, 2009

FEMA

Final Exercise Report

Harris Nuclear Plant

Licensee:	**Progress Energy**
Exercise Date:	**March 3, 2009**
Report Date:	**June 2, 2009**

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION IV

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I. EXECUTIVE SUMMARY

On March 3, 2009, the Department of Homeland Security, Federal Emergency Management Agency (FEMA), Region IV, Radiological Emergency Preparedness (REP) Program staff evaluated a plume exposure pathway exercise in the emergency planning zone (EPZ) around the Harris Nuclear Plant. The evaluation of out-of-sequence activities during the week of February 23 through 26, 2009, and March 3-4, 2009, is included in this report. The activities included: protective actions for schools; waterway warning; backup route alerting; emergency worker and equipment monitoring and decontamination; and reception and congregate care centers.

The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans and procedures. The previous Federally evaluated exercise was conducted on April 10, 2007. The qualifying emergency preparedness exercise was conducted February 28, 1987.

Officials and representatives from the State of North Carolina, Chatham, Harnett, Lee and Wake Counties, the Nuclear Regulatory Commission, Region II, and Progress Energy as well as numerous volunteers participated in this exercise. The cooperation and teamwork of the participants were evident throughout all the phases of the exercise. Conducting the exercise was particularly challenging due to adverse weather during the first week of March, which caused ground transportation problems from snow and ice on the road networks. This caused a number of traffic accidents in the central North Carolina area and required actual emergency response actions by many of the participating agencies. However, the only impact on the March 3 exercise was a two-hour delay in the scheduled exercise start time. The professionalism and dedication of the participating agencies and their determination to still conduct the exercise despite the adverse weather was commendable. FEMA wishes to acknowledge the efforts of the many individuals who participated and made the exercise a success.

State and local organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them. FEMA did not identify any Deficiencies; however, one Area Requiring Corrective Action (ARCA) was identified. The ARCA concerned the need for better planning and training of Raleigh Fire Department personnel in conducting emergency worker and equipment monitoring and decontamination operations in Wake County at Fire Station 12. Worthy of note throughout all phases of the exercise was the strength of the working relationships between the various State and local First Responder agencies in their mission planning and execution abilities.

II. INTRODUCTION

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all offsite nuclear planning and response. FEMA became a part of the Department of Homeland Security with its creation in 2002. The Radiological Emergency Preparedness (REP) Program conducts its activities pursuant to Title 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the REP Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

Title 44 CFR 350 establishes the policies and procedures for the REP Program'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 (FNF) include the following:

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

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

- Responding to requests from the Nuclear Regulatory Commission (NRC) to the REP Program pursuant to the Memorandum of Understanding between the NRC and FEMA (Federal Register, Vol. 58, No. 176, September 14, 1993).

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

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

Field 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 Harris Nuclear Plant to FEMA by the State of North Carolina and involved local jurisdictions occurred on March 28, 1988. Formal approval of the RERP was granted by FEMA on April 29, 1989, under 44 CFR 350.

A REP exercise was evaluated on March 3, 2009, and included evaluations of the following out-of-sequence activities held from February 23 through 26, 2009, and on March 3 and 4, 2009:

- Waterway Warning: Clearance of Lake Harris by representatives of the Wake County Sheriff's Office and the simultaneous clearance of Lake Jordan, Deep and Haw Rivers by representatives of the North Carolina Wildlife Resources Commission, Division of Enforcement; North Carolina Parks and Recreation; the US Army Corps of Engineers; and the North Carolina State Highway Patrol, Special Operation/Aviation Unit and Hazardous Materials Coordinator on February 25, 2009.

- Chatham County: Protective actions for schools at Moncure Elementary School on February 25, 2009; backup route alerting at North Chatham Fire Department Station 2 on February 25; reception and congregate care center operations at Chatham Central High School on February 25, 2009.

- Harnett County: Backup route alerting at Northwest Harnett Fire Department on February 23, 2009; emergency worker and equipment monitoring and decontamination at Angier/Black River Fire Department on February 23, 2009; and reception and congregate care center operations at Harnett Central Middle School on February 24, 2009.

- Lee County: Emergency worker and equipment monitoring and decontamination at Northview Fire Department on February 23, 2009; backup route alerting at Cape Fear Fire Department on March 3, 2009; and reception and congregate care at Southern Lee High School on March 4, 2009.

- Wake County: Protective actions for schools at Holly Springs High School on February 26, 2009; emergency worker and equipment monitoring and decontamination at Raleigh Fire Station 12 on February 26, 2009; and reception and congregate care center operations at Southeast Raleigh High School on March 3, 2009.

FEMA assessed the capabilities of State and local emergency preparedness organizations to implement their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Harris Nuclear Plant. This report presents the results of the exercise and findings on the performance by offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented are based on the evaluations of the Federal evaluator team, with final determinations being made by the RAC Chair and final approval by the FEMA Region IV Regional Administrator.

The criteria used in the 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," dated November 1980.

- FEMA "Interim Radiological Emergency Preparedness Manual," dated August 2002.

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

Section IV, entitled "Exercise Evaluation and Results," presents summary information on the demonstration of applicable exercise criteria at each jurisdiction or functional entity evaluated in a results only format.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the March 3, 2009, exercise and out-of-sequence activities held from February 23 through 26, 2009, and on March 3 and 4, 2009. The purpose of the exercise was to test Federal, State and local response capabilities in the area surrounding the Harris Nuclear Plant.

A. Plume Emergency Planning Zone Description

The Harris Nuclear Plant, operated by Progress Energy, is located in the Southwest corner of Wake County, approximately 22 miles southwest of Raleigh, North Carolina and 22 miles northeast of Sanford, North Carolina. The 10-mile emergency planning zone (EPZ) encompasses portions of Chatham, Harnett, Lee, and Wake Counties. Approximately 61,845 people live within the 10-mile EPZ. The primary land use around the plant is agricultural with some light manufacturing. The Jordan Lake and Harris Lake recreational areas fall within the 10-mile EPZ. The EPZ is sub-divided into 14 protective action zones lettered A through N.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Harris Nuclear Plant exercise on March 3, 2009.

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 and Natural Resources
- Division of Environmental Health,
  - Radiation Protection Section
- Division of Parks and Recreation
- Wildlife Resources Commission

Department of Health and Human Services
- Division of Public Health,
  - Office of Public Health and Response
- Division of Facility Services

FEDERAL AGENCIES

Nuclear Regulatory Commission, Region II
U.S. Army Corps of Engineers

RISK JURISDICTIONS

Chatham County
- Emergency Management
- Emergency Medical Services
- Fire/Rescue
- Sheriff's Office
- Board of Education
- Moncure Elementary School
- Social Services
- Health Department
- Mental Health Department
- Bonlee Fire Department
- North Chatham Volunteer Fire Department

Harnett County
- Emergency Management
- Emergency Medical Services
- Fire/Rescue
- Sheriff's Office
- Social Services
- Health Department
- Mental Health Department
- Angier & Black River Fire Department
- Northwest Harnett Volunteer Fire Department
- Summerville Fire Department
- Coats-Grove Fire Department
- Buies Creek Fire and Rescue Department

Lee County
- Emergency Management
- Emergency Medical Services
- Fire/Rescue
- Sheriff's Office
- Social Services
- Health Department
- Northview Fire Department
- Cape Fear Rural Fire Department
- Sanford Fire Department
- Lemon Springs Fire Department
- Tramway Rural Fire Department
- Northwest Pocket Fire Department

Wake County
- Emergency Management
- Emergency Medical Services
- Fire/Rescue
- Sheriff's Office

Human Services
Health Department
Environmental Services
Public School System
General Services
Geographical Information Services (GIS)
Community Services
Raleigh Police Department
Raleigh Fire Department

PRIVATE/VOLUNTEER ORGANIZATIONS

Amateur Radio Emergency Services/Radio Amateur Civil Emergency Service (All County Chapters)
American Red Cross (All County Chapters)

C. Exercise Timeline

Table 1 on the following page presents the time at which key events and activities occurred during the Harris Nuclear Plant exercise on March 3, 2009. Also included are times notifications were made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: March 3, 2009 - Harris Nuclear Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken							
		SERT/ SEOC	RPS Dose Assessment	Central Branch	JIC	Chatham County	Harnett County	Lee County	Wake County
Notice of Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0956	1009	1009	1024	1022	1004	1014	1011	1007
Site Area Emergency	1140	1154	1158	1153	1150	1153	1155	1150	1151
General Emergency	1403	1417	1432	1420	1423	1417	1424	1417	1416
1st Simulated Radiation Release Started	1130	1131	1202	1131	1131	1325	1131	1131	1151
1st Simulated Radiation Release Ended	1139	1139	1300	1139	1139	1417	1139	1139	1342
2nd Simulated Radiation Release Started	1345	1417	1404	1403	1403	1530	-	1331	1505
2nd Simulated Radiation Release Ended	1514	1532	1522	1543	1543	1530	1335	1339	-
Facility Declared Operational	1033	1025	1020	1025	1050	1047	1015	0958	1000
Exercise Terminated	1630	1621	1621	1622	1642	1624	1628	1621	1629
Declaration of State of Emergency									
State		1421			1421	1440	1440	1421	-
Local – Chatham, Harnett, and Lee		-			1244	1143	1139	1233	-
Local – Wake		-			1600				1417
State Assumes Direction and Control		1212							
Early Precautionary Actions:			-						
Evacuate Schools		1125	-			1102	-	1155	1105
Early Dismissal Schools		-	-			-	-	-	-
Special Needs Facilities		-	-			1102	1221	1155	1150
Clear Lake Jordan		-	-			1132	-	-	-
Clear Lake Harris and Park		-				-	-	-	1105
Clear Rivers		-				-	-	-	1105
1st Protective Action Decision: Public Warning		1203		1158	1205	1210	1203	1205	1203
1st Siren Activation		1205		1205	1205	1205	1205	1205	1205
1st EAS Message (Stay Tuned)		1210		1210	1210	1210	1210	1210	1210
1st NWS Message (Stay Tuned)		1215		1215	1215	1215	1215	1215	1215
2nd Protective Action Decision:		1444		1444	1444	1444	1444	1445	1444
Evacuate Zones: A, B and C									
Shelter in Place Zones: D through N									
2nd Siren Activation		1450		1450	1450	1450	1450	1450	1450
2nd EAS Message		1455		1455	1455	1455	1455	1455	1455
2nd NWS Message		1500		1500	1500	1500	1500	1500	1500
KI Decision:									
Emergency Workers		1215	1154	1156	1230	1513	1208	1219	1230
Emergency Workers onsite		-	-	-	-	1331	-	-	-
General Public—Do not ingest		-	1528	-	-	1513	1511	-	-

IV. EXERCISE EVALUATION AND RESULTS

This section contains the results and preliminary findings of the evaluation for all jurisdictions and functional entities that participated in the exercise on March 3, 2009 and out of sequence activities during the exercise week. The exercise tested the offsite emergency response capabilities of State and local governments within the 10-mile EPZ around the Harris Nuclear Plant.

Each jurisdiction and functional entity was evaluated based on their demonstration of criteria as delineated in FEMA "Interim Radiological Emergency Preparedness Manual," dated August 2002. Detailed information on the exercise criteria and the extent-of-play agreement used are found in Appendix 3 of this report.

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

The matrix presented in Table 2, on the following page, presents the status of all exercise criteria that were scheduled for demonstration during this exercise, by all participating jurisdictions and functional entities. Exercise criteria are listed by number. The demonstration status of those criteria is indicated by the use 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)

Table 2. Summary of Exercise Evaluation

DATE AND SITE: March 3, 2009 - Harris Nuclear Plant

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

LEGEND: M = Met **A** = ARCA

B. Status of Jurisdictions Evaluated

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

- **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 that remain unresolved. Included is a description of the ARCA 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 criteria, which were not demonstrated as scheduled during this exercise and the reason, they were not demonstrated.

- **Prior ARCAs - Resolved** – Description(s) of ARCA(s) assessed during previous exercises, which were resolved in this exercise and the corrective actions demonstrated.

- **Prior ARCAs - Unresolved** – Description(s) of ARCA(s) 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 may be discussed in this report.

- A **Deficiency** is defined in the REP Manual 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 the REP Manual 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."

1. STATE OF NORTH CAROLINA

1.1 State Emergency Operations Center

The North Carolina State Emergency Response Team (SERT) led the State's emergency response actions in an outstanding manner. The SERT Team Leader effectively directed his staff throughout the exercise. The State Emergency Operations Center (SEOC) Operations Chief periodically conducted briefings which kept the staff informed of key events and decisions. All personnel were knowledgeable of their responsibilities and successfully coordinated necessary actions with the risk counties of Chatham, Harnett, Lee and Wake Counties; the Harris Nuclear Plant emergency operations facility (EOF), the North Carolina Emergency Management (NCEM) Central Branch Office, and various other State and Federal agencies throughout the exercise.

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

1.2 Dose Assessment

The North Carolina Department of Environment and Natural Resources (DENR), Radiation Protection Section (RPS) dose assessment staff effectively monitored and evaluated plant equipment, radiological conditions, and meteorological data. This information was used to perform independent dose projections that validated the projections performed by the utility. The RPS Director was actively engaged with his staff and other members of the SERT. Information from the field monitoring teams (FMT) and the dose assessment team enabled the RPS Director to provide effective updates to the SERT Leader and the entire SERT in frequent briefings, including protective action recommendations. Dose assessment and FMT operations were well integrated into the overall SERT activities.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.b.1, 2.b.2, 3.a.1 and 4.a.2

b. **DEFICIENCY:** NONE

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

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs – RESOLVED: NONE

f. PRIOR ARCAs – UNRESOLVED: NONE

1.3 NCEM Central Branch

The Central Branch Office Regional Coordination Center (CBO-RCC) participated in the response to a simulated emergency at the Harris Nuclear Plant by monitoring the events and providing support and assistance as required. The staff proactively prepared to provide assistance, anticipating the information requests from the SEOC, and provided their expertise during conference calls and through use of the WebEOC. The CBO-RCC staff was thorough and professional in executing their responsibilities.

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

b. DEFICIENCY: NONE

c. AREAS REQUIRING CORRECTIVE ACTION: NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs – RESOLVED: NONE

f. PRIOR ARCAs – UNRESOLVED: NONE

1.4 Emergency Operations Facility

The Harris Nuclear Plant emergency operations facility (EOF), located on-site in the training complex, is an excellent facility from which all participating organizations can effectively manage emergency operations. Communications, coordination, and the flow of technical information between and among the State officials deployed to the EOF, and with the utility operator and the SEOC were outstanding. All officials deployed to the EOF were well trained, knowledgeable, followed applicable procedures and overall performed their respective responsibilities in an efficient and professional manner.

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

1.5 Joint Information Center

The Joint Information Center (JIC) was mobilized, staffed, and operated in a very professional manner that resulted in the timely preparation, coordination and dissemination of emergency public information. The State Lead Public Information Officer (PIO) and her staff along with the PIO staffs from Chatham, Harnett, Lee, and Wake Counties worked in harmony and interacted well with the JIC staff of Progress Energy. The recently rearranged media operations area, new visuals, and updated procedures for the JIC aided in a well-coordinated activity. The Rumor Control and Public Inquiry staffs from the State and counties interfaced well with their counterparts in the Progress Energy activity. The success of the JIC portion of the exercise is credited to the efforts of Progress Energy and the leadership of the State and county emergency management organizations.

a. MET: Criteria 1.a.1, 1.e.1 and 5.b.1

b. DEFICIENCY: NONE

c. AREAS REQUIRING CORRECTIVE ACTION: NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: Yes

Issue No.: 030-07-A-5.b.1-01

Description: State and local representatives staffing the JIC failed to follow established plans and procedures that would have enabled effective JIC function. State and local public information officers (PIO) did not effectively coordinate their actions. County news releases were not processed through the system quickly, resulting in a minimal flow of county news releases to the media. State and county PIOs did not effectively coordinate with rumor control personnel, and the process for reviewing messages prior to release from the JIC was ineffectual. Progress Energy personnel were unaware of State and local procedures that impacted their mission to effectively communicate emergency information to the public.

Corrective Action Demonstrated: The State and local public information personnel's training, standard operating procedure changes, and physical reconfiguration of the JIC media operations room resulted in a significant improvement of the overall media operations function. These actions correct the findings in the prior ARCA.

f. PRIOR ARCAs - UNRESOLVED: NONE

1.6 Waterway Warning

Representatives of the North Carolina State Highway Patrol (NCSHP), Wake County Sheriff's Office, North Carolina Wildlife Resources Commission, North Carolina Parks and Recreation, and the US Army Corps of Engineers conducted simultaneous waterway warnings on the two lakes in the emergency planning zone, Lakes Harris and Lake Jordan. The Wake County Sheriff's Office had responsibility to clear Lake Harris. The Sheriff's Deputies assigned quickly established effective incident command (IC), issued equipment, launched the assigned boats, and successfully cleared the lake. The four agencies responsible for Lake Jordan and the Deep and Haw Rivers (North Carolina Wildlife Resources Commission, North Carolina State Parks, US Army Corps of Engineers and NCSHP) also effectively and quickly cleared Lake Jordan. The North Carolina Wildlife Resources Commission established IC and successfully oversaw clearance operations involving the multiple-agency boat crews. The NCSHP supported operations with helicopter aviation support to conduct airborne alert and notification in the event boat operators were unable to reach their assigned areas due to water conditions. All law enforcement officers were well versed in their mission assignments and personal radiological safeguards.

a. **MET:** Criteria 1.a.1, 1.d.1, 1.e.1, 3.a.1, 3.b.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. RISK JURISDICTIONS

2.1 CHATHAM COUNTY

2.1.1 Emergency Operations Center

The Chatham County Emergency Management Director and his emergency operations center (EOC) staff successfully demonstrated their ability to effectively respond to a radiological emergency. The EOC staff was not pre-positioned, but was activated upon Alert notification, which demonstrated the county's flexibility when encountering technical notification failures. A back-up telephonic recall resulted in the facility reaching an operational status within 32 minutes. EOC representatives were professional in their approach to tasks, fully conversant with plans and procedures, and proactive in their implementation. The low-key management style of the Director was very effective in his

execution of direction and control. The full participation by the County Manager was acknowledgement of the county leadership's commitment to understanding emergency response procedures and improving response capability capabilities.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.1.2 Traffic Control Points

A NCSHP Trooper who would establish a traffic control point (TCP) in Chatham County participated in the exercise by interview. The Trooper was very conversant with traffic and access control procedures and guidelines established by both the NCSHP and the county. He knowledgably discussed how he would perform his role, to include describing actions he would take to remove impediments. Similarly, he was thoroughly familiar with the dosimetry issued emergency workers and exposure control measures.

a. **MET:** Criteria 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.1.3 Backup Route Alerting

The North Chatham Fire Department demonstrated backup route alerting for a failed siren within their jurisdiction. The department firefighters demonstrated a professional and dedicated approach while implementing their emergency procedures. All firefighters were well trained in personal protective measures as well as in activities to safeguard the public.

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

2.1.4 Protective Actions for Schools

The principal and selected staff of Moncure Elementary School were interviewed on actions they would be take to safeguard students, staff, and faculty in the event of a radiological emergency. All participants were extremely familiar with current plans and procedures, and provided a detailed description of how they would execute their responsibilities. They understand the similarities between radiological emergency response measures and other emergency challenges they may face. The school is commended for conducting a practice evacuation drill based on an emergency at the Harris Nuclear Plant that concluded with students loading on buses for their relocation.

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

b. DEFICIENCY: NONE

c. AREAS REQUIRING CORRECTIVE ACTION: NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.5 Reception and Congregate Care

The Chatham County Reception and Congregate Care Center (RCCC) were located at Chatham Central High School in Bear Creek, NC. It was operated by the Chatham County Department of Social Services (DSS), with support from the Raleigh Triangle Chapter of the American Red Cross (ARC); the Chatham County Board of Education, Environmental Health Department, Sheriff's Office, Emergency Medical Services (EMS) Department, Health Department, Chatham Counseling Center, Amateur Radio Emergency Services; and the Bonlee Fire Department. Firefighters of the Bonlee Fire Department correctly used a portal monitor to conduct initial radiological contamination screening of evacuees. Evacuees were directed to the reception area or the decontamination showers. Reception registration was well organized and staffed with competent personnel. Use of fire department escorts, control lines, signage, and effective

communications among fire department responders were in place to ensure no evacuees were permitted to enter the RCCC without having been monitored for contamination and decontaminated, as needed. The DSS Facility Manager was knowledgeable of the RCCC operations and did a commendable job in directing shelter activities. The DSS and support personnel effectively demonstrated the assessment of medical and counseling needs of the evacuees and referral to appropriate professionals or medical facilities for those evacuees with special needs.

a. **MET:** Criteria 1.e.1**,** 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

2.2 HARNETT COUNTY

2.2.1 Emergency Operations Center

The EOC Director, Assistant Director, and Radiation Officer were well versed in operational procedures. The EOC was activated in accordance with plans and procedures. Direction in the EOC was guided by established procedures, forward thinking, and inclusive coordination that valued the opinions and input of all staff members in the EOC. The EOC staff members were knowledgeable, actively involved in carrying out their functions, and displayed a positive attitude. The staff was briefed on a consistent basis. Briefings were informative and productive, and contributed to the ability of the leadership to focus on their responsibilities and resulted in critical, timely, well thought-out and effective decisions. The Director and staff effectively demonstrated the ability to manage the county's emergency response and to protect the public and emergency workers.

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

b. **DEFICIENY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.2 Traffic Control Points

A NCSHP Master Trooper successfully demonstrated the establishment of TCPs. A traffic and access control evaluation was conducted in accordance with the extent of play at the Harnett County EOC by interview with the Master Trooper, who followed his plans and procedures to successfully establish and activate a predetermined traffic and access control point. He was knew the location of both the reception center and the single emergency worker decontamination center in the county. Besides equipment normally carried in his patrol vehicle he knew that additional equipment (such as barriers and cones) could be requested through his dispatching point.

a. MET: Criteria 3.d.1 and 3.d.2

b. DEFICIENCY: NONE

c. AREAS REQUIRING CORRECTIVE ACTION: NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.3 Backup Route Alerting

The Northwest Harnett and Summerville Fire Departments demonstrated a well-designed plan to conduct backup route alerting in Harnett County. The volunteers were fully knowledgeable of their responsibilities, enthusiastically approached and completed their tasks, and set a standard worthy of emulation.

a. MET: Criteria 1.d.1, 1.e.1, 3.a.1, 3.b.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

2.2.4 Emergency Worker & Equipment Monitoring & Decontamination

The Angier & Black River Fire Department successfully demonstrated the capability to conduct emergency worker radiological monitoring and decontamination operations. Dosimetry and radiation monitoring instrument issue and operation were correctly performed. Radiation monitoring instruments were properly calibrated and properly used for contamination monitoring. The emergency vehicle decontamination area provided adequate drainage and water runoff. Available parking lot areas were sufficient for contaminated vehicles. Personnel interviewed displayed an understanding of exposure and contamination control measures and exposure reporting requirements. All personnel conducted their roles competently, professionally, and in accordance with procedures.

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

2.2.5 Reception and Congregate Care

The Coats-Grove and the Buies Creek Fire Departments, Harnett County Departments of Emergency Management, Social Services, EMS, Health, Mental Health, Sherriff's Office, Animal Services, and Harnett County Schools jointly demonstrated excellent evacuee monitoring, decontamination, reception and congregate care operations. The volunteers and full-time county staff worked well together in implementing well-designed emergency procedures. It was evident that previous recommendations had been accepted and included in procedures. All personnel were well trained in personal protective measures as well as in activities to safeguard the public.

a. **MET:** Criteria 1.e.1, 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

2.3 LEE COUNTY

2.3.1 Emergency Operations Center

The EOC was staffed with enthusiastic and professional individuals who successfully demonstrated their capabilities during the exercise. The Emergency Management Director served as Operations Chief for the EOC and effectively directed the EOC staff using a highly inclusive, low-key style, alternately coaching their current activities while inviting them to anticipate future requirements. He led the participating agencies through the process of ensuring 24-hour staffing of the EOC, then requested the State provide a qualified Incident Management Team to provide direction and control and ensure his own work/rest cycle. The EOC maintained communications with the State and other counties and effectively using the Decision Line to obtain information and relay information. Briefings were accomplished on a regular basis and the Director used the knowledge and experience of his staff to ensure proper actions were taken and planning was done to prepare for upcoming needs. The County Policy and Control Group (Chairman of the County Commissioners, County Manager, and Mayor of Sanford) were present and participated in the decision process for precautionary actions and protective decisions.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.3.2 Traffic Control Points

TCPs were demonstrated by interview with members of the NCSHP, Lee County Sheriff's Office, and Sanford Police Department. The officers were knowledgeable of the procedures for setting up traffic and access control in the event of a nuclear emergency at the Harris Nuclear Plant. They were well equipped with primary and backup communications equipment and computers, were familiar with roads and designated TCP locations, and were confident they could obtain any supplemental information needed to direct evacuees and answer questions as to where to go for help. The officers were knowledgeable of allowed radiation exposure, knew how to zero and read dosimeters, and understood the aspects of ingesting potassium iodide (KI) and completing the required forms.

a. **MET:** Criteria 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.3.3 Backup Route Alerting

The Cape Fear Rural Fire Department demonstrated backup route alerting for a failed siren within their jurisdiction. The department firefighters demonstrated a professional and dedicated approach while implementing their emergency procedures. It was evident that all staff was well trained in personal protective measures as well as in activities to safeguard the public.

a. **MET:** Criteria 1.d.1, 1.3.1, 3.a.1, 3.b.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

2.3.4 Emergency Worker & Equipment Monitoring & Decontamination

The Northview Fire Department successfully demonstrated emergency worker and equipment monitoring and decontamination procedures at the Northview Fire Station in Sanford, North Carolina. The Incident Commander provided clear and effective command and control. The facility was well set up with decontamination tents, signs, barriers and plastic cones, which clearly identified areas for entering, vehicle registration, monitoring, and decontamination of vehicles and personnel. The firefighters demonstrated good contamination control measures, monitoring and decontamination techniques, and were well trained and competent.

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

2.3.5 Reception and Congregate Care

The RCCC established at Southeast Lee High School successfully demonstrated monitoring, decontamination, reception and mass care of evacuees. Lee County Departments of Emergency Management, Social Services, Health, and Public School System; Sanford, Lemon Springs, Tramway Rural and Northwest Pocket Fire Departments; American Red Cross; and Central Carolina Amateur Radio Communications Team all effectively provided support. The staff assembled at the RCCC facility demonstrated proper monitoring, decontamination, contamination control, radiological protection, mass care, and registration functions.

a. MET: Criteria 1.e.1, 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

2.4 WAKE COUNTY

2.4.1 Emergency Operations Center

The Emergency Management Agency Director displayed excellent command and control of the Wake County EOC. He effectively used experienced staff while training new key members. All the functional groups effectively used the Tracker System to input requests for actions or equipment and to track their completion. Plans and checklists were used extensively to ensure proper actions were taken, and briefings were frequently held to keep all staff members up-to-date. The Director effectively coordinated all protective actions with other counties and the State. All personnel in the EOC performed professionally and displayed good teamwork.

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

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.2 Traffic Control Points

A Sheriff's Deputy from the Wake County Sheriff's Office effectively demonstrated TCP set-up and operations by interview. The deputy was knowledgeable in the use of personal dosimetry and radiological exposure control and about his duties and responsibilities in manning a TCP.

a. **MET:** Criteria 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.3 Backup Route Alerting

Wake County demonstrated backup route alerting by interview with a Sheriff's Deputy from the Wake County Sheriff's Office. The Deputy was knowledgeable in the use of personal dosimetry and radiological exposure control and how to ensure all residents in an area covered by a failed siren would be promptly notified.

a. **MET:** Criteria 1.d.1, 1.3.1, 3.a.1, 3.b.1 and 5.a.3

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

2.4.4 Protective Actions for Schools

The Wake County Public School System (WCPSS) demonstrated its ability to execute protective measures for schools through interviews with staff from Holly Springs High School, Holly Ridge Middle School, Holly Grove, Holly Ridge, and Holly Springs Elementary Schools and representatives from WCPSS Transportation Division, WCPSS Risk Management, Wake County Emergency Management Agency, North Carolina Division of Emergency Management, and Progress Energy. The participants were fully conversant with their responsibilities and emergency plans and prepared to implement these if required.

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

b. DEFICIENCY: NONE

c. AREAS REQUIRING CORRECTIVE ACTION: NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

2.4.5 Emergency Worker & Equipment Monitoring & Decontamination

Monitoring and decontamination of emergency workers and equipment was demonstrated by the Raleigh Fire Department at Raleigh Fire Station #12 by the Raleigh Fire Department Hazardous Materials (HazMat) Response Team, stationed at Raleigh Fire Station #15. The HazMat Response Team actions, while appropriate for an emergency roadside response, were not optimal for a pre-planned radiological monitoring and decontamination station. HazMat Response Team personnel did not have a written standard operating procedure (SOP) on equipment requirements, radiological monitoring or decontamination, or a site-specific diagram to establish operations. In addition to lacking a diagram for set-up of operations, the facility (Fire Station #12) was a small two-bay building, with only one shower facility and limited inside space and outside parking capacity. Overall, equipment and supplies were not adequate, the facility was not optimal, and HazMat Response Team personnel did not demonstrate familiarity with radiation monitoring equipment or effective decontamination procedures.

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

b. DEFICIENCY: NONE

c. AREAS REQUIRING CORRECTIVE ACTION: 6.b.1

Issue No.: 030-09-A-6.b.1-01

Condition: Due to the lack of an SOP to provide guidance to the HazMat Response Team for the setup and conduct of operations, the following was observed:

a. Equipment and supplies needed for effective operations such as Level C personal protective equipment, forms, decontamination kits, signage, waste containers, garbage bags, cones, guidance tape, paper/rubber runners, step-off pads for contamination control, and so forth were not available. Equipment and supply needs should be listed in a SOP and available.

b. There were no procedures on performing radiological meter operational checks.

c. No personnel monitoring and decontamination records were generated for the two people and two vehicles that were monitored and decontaminated. Forms should be available and listed in a SOP with instructions on when and how to complete them.

d. Lack of control of the pathways taken by contaminated individuals to the shower area and the pathway taken by uncontaminated individuals to the clean area did not prevent personnel from wandering between the two areas without knowing it because of the lack of signage, paper or rubber runners, cones or guidance tape.

e. The HazMat Team performed personnel decontamination using a bucket of soapy water and a sponge to wash off contamination, then re-used the same bucket and sponge. This could have caused the soapy water in the bucket to get contaminated, which would then re-contaminate the person or the next person. No decontamination kits were available nor was there guidance on how to use them.

f. Since there was only one way in and out of the shower area, people who had just been decontaminated had to walk about ten feet through a potentially contaminated area to get to the clean area.

g. The vehicle decontamination catch basin created cross-contamination potential for vehicles and personnel. After the first contaminated vehicle was decontaminated, the second vehicle pulled into the catch basin also became contaminated.

h. Emergency workers were issued Thermo Scientific Mk2 Electronic

Personal Dosimeters (EPD). No direct reading dosimeters (DRD) were available. Luxel permanent-record dosimeters (PRD) were available, but were not issued. When questioned, the HazMat Team personnel stated they believed the electronic personal dosimeters (EPD) alone were the only dosimetry needed. This was not in accordance with Wake County Standard Operating Procedure (WCSOP) – 101, Radiological Exposure Control and Dosimetry. The HazMat Team did not have this SOP on hand.

Possible Cause:

a. The lack of an SOP on planning and conducting operations at Fire Station 12.

b. The lack of adequate equipment for exposure control and dosimetry, assembled into emergency kits for emergency workers and response organizations as needed.

c. The lack of adequate guidance to emergency workers on the requirement to wear adequate DRD and PRD dosimetry.

Reference: NUREG-0654/FEMA-REP-1, Rev. 1: Sections H.7, 10; J.10.e; J.12; K.3.a, b; K.5.a, b

Effect:

a. The lack of a well-developed, site-specific SOP resulted in a failure to provide effective monitoring and decontamination activities at the facility.

b. The lack of DRD and PRD dosimetry prevented recording an accurate record of emergency worker exposure during the accident.

Recommendations:

a. Develop an adequate Wake County SOP to provide effective planning and operational instructions.

b. Package dosimetry in kits (per current Wake County SOP) for issue to emergency workers. Include forms for recording DRD and PRD serial numbers.

c. Initiate training to emergency workers on dosimetry use.

Schedule of Corrective Actions: The Wake County Emergency Management Director reviewed in detail the exercise activity and will enhance plans to improve response mechanisms with the following corrective actions:

a. Coordinate with the Raleigh Fire Department on the development of a standard SOP that provides effective planning and operational instructions on conducting emergency worker and vehicle monitoring and decontamination operations by September, 2009.

b. Update WCSOP-101, Radiological Exposure Control and Dosimetry, to incorporate electronic personal dosimeters in use by the Raleigh Fire Department by May 21, 2009.

c. Provide refresher training to the Raleigh Fire Department on the updated WCSOP-101, as well as dosimetry use, handheld radiation survey meter operation, and use of standard forms for recording dosimetry and personal exposure information on May 21 and May 26, 2009.

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

2.4.6 Reception and Congregate Care

The Wake County Department of Human Services successfully demonstrated monitoring, decontamination, reception and congregate care of evacuees at Southeast Raleigh High School. Wake County Emergency Management, Department of Health Services, Public School System, and Raleigh Police and Fire Departments provided assistance in the operation. Each agency demonstrated proper monitoring, decontamination, contamination control, radiological protection, and registration functions for the evacuees.

a. MET: Criteria 1.e.1, 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

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

3. SUMMARY OF AREAS REQUIRING CORRECTIVE ACTION

3.1 2008 ARCAs

3.1.1 030-09-A-6.b.1-01 Wake County EW & Equip Monitoring & Decontamination

Condition: Due to the lack of an SOP to provide guidance to the HazMat Response Team for the setup and conduct of operations, the following was observed:

a. Equipment and supplies needed for effective operations such Level C personal protective equipment, forms, decontamination kits, signage, waste containers, garbage bags, cones, guidance tape, paper/rubber runners, step-off pads for contamination control, and so forth were not available. Equipment and supply needs should be listed in a SOP and available.

b. There were no procedures on performing radiological meter operational checks.

c. No personnel monitoring and decontamination records were generated for the two people and two vehicles that were monitored and decontaminated. Forms should be available and listed in a SOP with instructions on when and how to complete them.

d. Lack of control of the pathways taken by contaminated individuals to the shower area and the pathway taken by uncontaminated individuals to the clean area did not prevent personnel from wandering between the two areas without knowing it because of the lack of signage, paper or rubber runners, cones or guidance tape.

e. The HazMat Team performed

personnel decontamination using a bucket of soapy water and a sponge to wash off contamination, then re-used the same bucket and sponge. This could have caused the soapy water in the bucket to get contaminated, which would then re-contaminate the person or the next person. No decontamination kits were available nor was there guidance on how to use them.

f. Since there was only one way in and out of the shower area, people who had just been decontaminated had to walk about ten feet through a potentially contaminated area to get to the clean area.

g. The vehicle decontamination catch basin created cross-contamination potential for vehicles and personnel. After the first contaminated vehicle was decontaminated, the second vehicle pulled into the catch basin also became contaminated.

h. Emergency workers were issued Thermo Scientific Mk2 Electronic Personal Dosimeters (EPD). No direct-reading dosimeters (DRD) were available. Luxel permanent record dosimeters (PRD) were available, but were not issued. When questioned, the HazMat Team personnel stated they believed the electronic personal dosimeters (EPD) alone were the only dosimetry needed. This was not in accordance with Wake County Standard Operating Procedure (WCSOP) – 101, Radiological Exposure Control and Dosimetry. The HazMat Team did not have this SOP on hand.

Possible Cause:

a. The lack of an SOP on planning and conducting operations at Fire Station 12.

b. The lack of adequate equipment for exposure control and dosimetry, assembled into emergency kits for emergency workers and response organizations as needed.

c. The lack of guidance to emergency workers on the requirement to wear adequate DRD and PRD dosimetry.

Reference: NUREG-0654/FEMA-REP-1, Rev. 1: Sections H.7, 10; J.10.e; J.12; K.3.a, b; K.5.a, b

Effect:

a. The lack of a well-developed, site-specific SOP resulted in a failure to provide effective monitoring and decontamination activities at the facility.

b. The lack of DRD and PRD dosimetry prevented recording an accurate record of emergency worker exposure during the accident.

Recommendations:

a. Develop an adequate Wake County SOP to provide effective planning and operational instructions.

b. Package dosimetry in kits (per current Wake County SOP) for issue to emergency workers. Include forms for recording DRD and PRD serial numbers.

c. Initiate training to emergency

workers on dosimetry use.

Schedule of Corrective Actions: The Wake County Emergency Management Director reviewed in detail the exercise activity and will enhance plans to improve response mechanisms with the following corrective actions:

a. Coordinate with the Raleigh Fire Department on the development of a standard SOP that provides effective planning and operational instructions on conducting emergency worker and vehicle monitoring and decontamination operations by September, 2009.

b. Update WCSOP-101, Radiological Exposure Control and Dosimetry, to incorporate electronic personal dosimeters in use by the Raleigh Fire Department by May 21, 2009.

c. Provide refresher training to the Raleigh Fire Department on the updated WCSOP-101, as well as dosimetry use, handheld radiation survey meter operation, and use of standard forms for recording dosimetry and personal exposure information on May 21 and May 26, 2009.

4.1 PRIOR ARCAs - RESOLVED

4.1.1 030-07-A-5.b.1-01
State of North Carolina
SEOC
JIC

Description: State and local representatives staffing the JIC failed to follow established plans and procedures that would have enabled effective JIC function. State and local public information officers (PIO) did not effectively coordinate their actions. County news releases were not processed through the system quickly, resulting in a minimal flow of county news releases to the media. State and county PIOs did not effectively coordinate with rumor control personnel, and the process for reviewing messages prior to release from the JIC was

ineffectual. Progress Energy personnel were unaware of State and local procedures that impacted their mission to effectively communicate emergency information to the public.

Corrective Action Demonstrated: The State and local public information personnel's training, standard operating procedure changes, and physical reconfiguration of the JIC media operations room resulted in a significant improvement of the overall media operations function. These actions correct the findings in the prior ARCA.

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

ARES	Amateur Radio Emergency Services
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
BAT	Boron Acid Tank
CBO-RCC	Central Branch Office- Regional Coordination Center
CSIP	Core Safety Injection Pump
CCW	Circulating Cooling Water
CFR	Code of Federal Regulations
DENR	Department of Environment and Natural Resources
DG	Diesel Generator
DRD	Direct Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EFPD	Effective Full Power Days
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOL	End of Life
EP	Emergency Planning
EPA	Environmental Protection Agency
EPD	Electronic Personal Dosimeter
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
EW	Emergency Worker
FPB	Fission Product Barrier
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FNF	Fixed Nuclear Facility
GE	General Emergency
GPM	Gallons per Minute
HNP	Harris Nuclear Plant

IC	Incident Command
I&C	Instrumentation and Control
JIC	Joint Information Center
KI	Potassium Iodide
MCR	Main Control Room
mrem	millirem
MOV	Motor Operated Valve
NC	North Carolina
NCEM	North Carolina Emergency Management
NCSHP	North Carolina State Highway Patrol
NI	Nuclear Instrumentation
NLO	Nuclear Licensed Operator
NRC	Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980*
ORO	Offsite Response Organization
RAC	Regional Assistance Committee
PAD	Protective Action Decision
PAR	Protective Action Recommendation
RCCC	Reception and Congregate Care Center
RCP	Reactor Cooling Pump
PIO	Public Information Officer
PPM	Parts per Million
PRD	Permanent-Record Dosimeter
R	Roentgen
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RCS	Reactor Coolant System
rem	roentgen equivalent in man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RPS	Radiation Protection Section
RWST	Reactor Water Storage Tank
SAE	Site Area Emergency
SEC	Sequential Events Controller
SEOC	State Emergency Operations Center

SERT	State Emergency Response Team
SG	Steam Generator
SI	Safety Injection
SOG	Standard Operating Guide
SOP	Standard Operating Plan
SSO	Shift Supervisor- Operations
TCP	Traffic Control Point
TEDE	Total Effective Dose Equivalent
TSC	Technical Support Center
USDA	U.S. Department of Agriculture
WCPSS	Wake County Public School System

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Harris Nuclear Plant exercise on March 3, 2009. The organizations represented are indicated by the following abbreviations:

FEMA - Federal Emergency Management Agency
ICF - ICF Consulting Incorporated

EVALUATION SITE	EVALUATOR	ORGANIZATION
State of North Carolina – NCEM Director: Mr. Doug Hoell, Jr.		
State Emergency Operations Center	Michael Dolder	FEMA
	Glenn Kinnear	ICF
Dose Assessment (SEOC)	Alan Bevan	ICF
	David Seebart	ICF
NCEM- Central Branch Office	William O'Brien	ICF
Emergency Operations Facility	Kevin Keyes	FEMA
Joint Information Center	Dave White	ICF
	Bob Lemeshka	ICF
Waterway Warning	Michael Dolder	FEMA
	Joe Harworth	FEMA
	Bill Larrabee	ICF
	Alan Bevan	ICF
	Gary Bolander	ICF
	Brad McRee	ICF
Chatham County – EM Director: Mr. Tony Tucker		
Emergency Operations Center	Bill Larrabee	ICF
	William McCance	ICF
Traffic Control Points	William McCance	ICF
Backup Route Alerting	Gary Bolander	ICF
Protective Actions for Schools	Bill Larrabee	ICF
Reception and Congregate Care Center	Brad McRee	ICF
	Alan Bevan	ICF

Harnett County – EM Director: Mr. Gary Pope

Emergency Operations Center	Odis Spencer	FEMA
	Gary Bolender	ICF
Traffic Control Points	Gary Bolender	ICF
Backup Route Alerting	Bill Larrabee	ICF
Emergency Worker and Equipment Monitoring and Decontamination	Brad McRee	ICF
Reception and Congregate Care Center	Bill Larrabee	ICF
	Gary Bolander	ICF

Lee County – EM Director: Mr. Eric Griffin

Emergency Operations Center	Obhie Robinson	FEMA
	Carl Wentzell	ICF
Traffic Control Points	Carl Wentzell	ICF
Backup Route Alerting	Gary Bolander	ICF
Emergency Worker and Equipment Monitoring and Decontamination	Alan Bevan	ICF
Reception and Congregate Care Center	Bart Ray	ICF
	Pat Taylor	ICF

Wake County – Mr. Josh Creighton

Emergency Operations Center	Joe Harworth	FEMA
	Matthew Bradley	FEMA
Traffic Control Points	Rosemary Samsel	ICF
Backup Route Alerting	Rosemary Samsel	ICF
Protective Actions for Schools	Bill Larrabee	ICF
	Gary Bolander	ICF
Emergency Worker and Equipment	Brad McRee	ICF
	Alan Bevan	ICF
Reception/Congregate Care Center	Bart Ray	ICF
	Pat Taylor	ICF

APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

This appendix contains the criteria and the extent-of-play agreement which were demonstrated in the Harris Nuclear Plant exercise on March 3, 2009. The State of North Carolina submitted and FEMA Region IV approved the extent-of-play agreement on the following pages.

The extent-of-play was modified by mutual agreement with the State of North Carolina and FENA Region IV on March 2, 2009, to allow pre-positioning of personnel due to adverse weather during the first week of March, which caused ground transportation problems from snow and ice on the road networks. This caused a number of traffic accidents in the central North Carolina area and required actual emergency response actions by many of the participating agencies. However, the only impact on the March 3 exercise was a two-hour delay in the scheduled exercise start time.

HARRIS 2009 CRITERION MATRIX Partial Participation EPZ Exercise						
Evaluation Sub Elements **(EPZ) = Emergency Planning Zone County** **(IPZ) = Ingestion Pathway Zone County** **E – Evaluated** **T – Training Only** **O – Off Scenario Activity** *Elements in Italics for Ingestion Pathway Exercise Only*	**NC SERT**	**RAD PROTECTION**	**CHATHAM (EPZ)**	**HARNETT (EPZ)**	**LEE (EPZ)**	**WAKE (EPZ)**
1. Emergency Operations Management						
1.a.1. Mobilization of Response Personnel	E	E	E	E	E	E
1.b.1. Facilities	E *Baseline Set 2002*	E *Baseline Set 2002*	E *Baseline Set 2002*	E *Baseline Set 2002*	E	E *Baseline Set 2002*
1.c.1. Direction and Control	E	E	E	E	E	E
1.d.1. Communications Equipment	E	E	E	E	E	E
1.e.1. Equipment & Supplies to Support Operations	E	E	E	E	E	E
2. Protective Action Decision-making						
2.a.1. Emergency Worker Exposure Control	E	E	E	E	E	E
2.b.1. RAD Assessment of PARs & PADs Based on Available Information	E	E	E	E	E	E
2.b.2. RAD Assessment of PARs & PADs for General Public	E	E	E	E	E	E
2.c.1. Protective Action Decisions for Protection of Special Populations	N/A	N/A	E	E	E	E
2. d.1. Radiological Assessment and Decision Making for Ingestion Exposure	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*
2. e.1. Radiological Assessment and Decision Making for Relocation, Re-entry & Return	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*
3. Protective Action Implementation						
3.a.1. Implementation of Emergency Worker Exposure Control	E	E	E	E	E	E

3.b.1. Implementation of KI Decisions	E	E	E	E	E	E
3.c.1. Implementation of PADs for Special Pops.	N/A	N/A	E	E	E	E
3.c.2. Implementation of PADs for Schools	N/A	N/A	E	E	E	E
3.d.1. Implementation of Traffic and Control	E	N/A	E	E	E	E
3.d.2. Impediments to Traffic and Access Control	E	N/A	E	E	E	E
3.e.1. Implementation of Ingestion Pathway Decisions Using Adequate Information	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*
3.e.2. Implementation of Ingestion Pathway Decisions Showing Instructional Materials	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*
3.f.1. Implement Relocation, Re-entry, and Return	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*	*IPZ Exr 2013*

Evaluation Sub Elements **(EPZ) = Emergency Planning Zone County** **(IPZ) = Ingestion Pathway Zone County** **E – Evaluated** **T – Training Only** **O – Off Scenario Activity** *Elements in Italics for Ingestion Pathway Exercises Only*	**NC SERT**	**RAD PROTECTION**	**CHATHAM (EPZ)**	**HARNETT (EPZ)**	**LEE (EPZ)**	**WAKE (EPZ)**
4. Field Measurement and Analysis						
4.a.1. Plume Phase Field Measurements & Analysis Equipment	N/A	T	N/A	N/A	N/A	N/A
4.a.2. Plume Phase Field Measurements & Analysis Management	N/A	T	N/A	N/A	N/A	N/A
4.a.3. Plume Phase Field Measurements & Analysis Procedures	N/A	T	N/A	N/A	N/A	N/A
4.b. Post Plume Phase Field Measurements & Sampling	N/A	*IPZ Exr 2013*	N/A	N/A	N/A	N/A

4.c. Laboratory Operations	N/A	T	N/A	N/A	N/A	N/A
5. Emergency Notification and Public Information						
5.a 1. Activation of the Prompt Alert and Notification	E	N/A	E	E	E	E
5.a 2. Activation of the Prompt Alert and Notification 15 Minute Fast Breaker	N/A	N/A	N/A	N/A	N/A	N/A
5.a.3. Exception Areas and Back-up Alert and Notification	E	N/A	E	E	E	E
5.b.1. Emergency Information & Instructions for the Public & Media	E	N/A	E	E	E	E
6. Support Operations / Facilities						
6.a.1. Monitoring & Decontamination of Evacuees & Emergency Workers; Registration of Evacuees	N/A	N/A	E-O	E-O	E-O	E-O
6.b.1 Monitoring & Decontamination of Emergency Worker Equipment	N/A	N/A	E-O	E-O	E-O	E-O
6.c.1. Temporary Care of Evacuees	N/A	N/A	E-O	E-O	E-O	E-O
6.d.1. Transportation & Treatment of Contaminated, Injured Individuals (MS-1)	N/A	N/A	N/A	N/A	N/A	REX 2009

Harris Nuclear Power Plant Exercise
2009 Extent of Play Agreement

A. General Information

- Activities will be conducted as follows:
  - Off-Scenario – Monday, February 23 – Friday, February 27, 2009
  - Graded exercise - Tuesday, March 3, 2009

- Utility will provide a liaison to State EOC, Chatham, Harnett, Lee, & Wake County EOCs

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

- A State Controller will be located in the State EOC, Chatham County EOC, Harnett County EOC, Lee County EOC, Wake County EOC, and the JIC.

- Exercise participants will have the opportunity to remediate and re-demonstrate exercise criterion immediately upon identifying any error/s with the approval of the federal evaluator.

- North Carolina OROs (State and County) are in agreement with extent of play requirements, as outlined in FEMA's Radiological Exercise Methodology Guidance, September 12, 2001, unless otherwise noted in this EOP Agreement.

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

B. Scenario

- Scenario was developed by the Utility in consultation with the State using FEMA guidelines.

- State and County participants will **not** be pre-positioned. Exercise participants are expected to respond to their respective exercise locations from their normal work stations. (Due to construction and moving activity, the Harnett County EOC will be allowed to conduct setup activity prior to event notification. Staff will not be pre-positioned)

- All siren soundings when required will be simulated by using a silent test.

- At least one wind shift is built into the scenario for the PAD making process.

- A communication failure will be discussed at the County and State EOCs.

- Evaluation Area 4 - Field Measurement and Analysis activity will be for Training only. Prepositioning of the Radiation Protection Mobile Lab will be permitted.

C. Meeting Times

I. Federal Evaluator Briefing:

Harris Plant Energy and Environmental Center, HEEC Auditorium
New Hill, North Carolina

Date & Time: 2:00 p.m., Monday, March 2, 2009

II. State & County Internal Critique:

State Disaster Response Operations Center (DROC)
1830 B Tillery Place
Raleigh, NC. 27604

Date & Time: 1:00 p.m., Wednesday, March 4, 2009

This meeting will take place only if needed.

III. Participant's Out Briefing:

Harris Plant Energy and Environmental Center, HEEC Auditorium
New Hill-Holleman Road (SR 1127)
New Hill, North Carolina

Date & Time: 10:00 a.m. Thursday, March 5, 2009

IV. Public Briefing:

Harris Plant Energy and Environmental Center, HEEC Auditorium
New Hill-Holleman Road (SR 1127)
New Hill, North Carolina

Date & Time: 11:00 a.m. Thursday, March 5, 2009

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**: NC SERT, Chatham, Harnett, Lee & Wake Counties

- State and County participants will **not** be pre-positioned. Exercise participants are expected to respond to their respective exercise locations from their normal work stations.

- Notification rosters will be provided to FEMA evaluators. Emergency management personnel 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 at Raleigh-Durham International Airport, Raleigh. The Mobile Lab will be allowed to preposition. Lab personnel will deploy from normal work stations when notified.

1.b. – Facilities

Criterion 1.b.1
Facilities are sufficient to support the Emergency Response.
(NUREG-0654, H.)

EXTENT OF PLAY:

Participants: NC SEOC Chatham, Harnett, Lee & Wake Counties

- State, Chatham, Harnett, and Wake Counties EOC facilities baseline for this exercise evaluation criterion was established in 2002.

- Lee County EOC has been renovated and requires evaluation of facility and support system adequacy.

- Harnett County EOC is involved with transfer of Harnett County Sheriff Office facilities and will be allowed to conduct setup activity prior to event notification.

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**: NC SERT, Chatham, Harnett, Lee & Wake Counties

- Wake County will be the lead-coordinating county for the Harris Counties until Site Area Emergency. Following the simulated sounding of sirens (silent test) and issuance of the first PAD recommendations to the public, Counties will request the State assume direction and control.

- State and county EOCs will provide periodic briefings to keep all staff members informed.

- The State of North Carolina and the counties of Wake, Chatham, Harnett and Lee 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.)

EXENT OF PLAY:

- **Participants**: NC SERT, Chatham, Harnett, Lee & Wake Counties

- Communication breakdown/failures will be discussed with the federal evaluators during the exercise at state and county EOCs.

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: Chatham, Harnett, Lee & Wake Counties

- Lee County EOC has been renovated and requires evaluation of facility and support system adequacy.

- Availability and currency of emergency worker KI will be verified during FEMA Staff Assistance Visit to the EPZ Counties prior to or during the exercise.

Chatham County:

- Staffs Assistance Visit will take place off-scenario, **February 25, 2009** at **10:30 am,** at the Chatham County Emergency Operations Center, located at 297 West St. Pittsboro, NC.

Harnett County:

- Staff Assistance Visit will take place off-scenario, on **February 23, 2009** at **1:00 pm** at the Harnett County Emergency Operations Center, 1005 Edwards Drive, Lillington, NC

Lee County:

- Staff Assistance Visit will take place off-scenario, **February 24, 2009** at **1:00 pm,** at the Lee County Emergency Operations Center, 225 South Steele Street, Sanford, NC 27330

Wake County:

- Staff Assistance Visit will take place off-scenario, **February 26, 2009** at **9:00 am,** at the Wake County Emergency Operations Center 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, Chatham, Harnett, Lee & Wake Counties

- No distribution of actual or simulated KI will be accomplished during the exercise.

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

- Radiation Protection will establish an independent dose assessment and projection team at the State EOC. This team will communicate with the

Utility EOF, State Mobile Lab and deployed field survey teams to obtain data for developing dose projections.

- Dose assessment team will communicate with the Utility EOF, Mobile Lab and deployed field survey teams to obtain data for developing dose projections. Radiation Protection will analyze technical data and make recommendations to SERT Leader and County EM Coordinators.

- Federal resources needed to assist the state in tracking the radioactive plume activity 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, Chatham, Harnett, Lee & Wake Counties

- Radiation Protection will analyze technical data and make recommendations to SERT Leader who in turn will make recommendations to the County 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.

- Evaluated counties will participate in the decision making process for PARS.

Demonstration of KI distribution for the General Public will be accomplished during Off-Scenario activity by local Public Health officials through discussion and with presentation of distribution documentation to the Federal Evaluator. (Demonstration times and locations are in the Off-Scenario Event Matrix)

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:** Chatham, Harnett, Lee & Wake 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.

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, Chatham, Harnett, Lee & Wake Counties

- Chatham, Lee, Harnett and Wake Counties will *demonstrate* their process during out-of-sequence activities.

- Turn back values will be in accordance with state plans. Personnel will describe procedures used when turn back values are reached.

- Progress Energy and NC 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, Chatham, Harnett, Lee & Wake Counties

- Demonstration of KI will be through “Discussion Only” at State and County EOCs.

- No distribution of actual or simulated KI will be accomplished during the exercise.

- Decision to take KI is made by the State Health Director in consultation with the State Pharmacist and County Health Directors.

  Demonstration of KI distribution for the General Public will be accomplished during Off-Scenario activity by local Public Health officials through discussion and with presentation of distribution documentation to the Federal Evaluator. (Demonstration times and locations are in the Off-Scenario Event Matrix)

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

EXTENT OF PLAY:

- **Participants:** Chatham, Harnett, Lee & Wake Counties

- A current list of Special Needs Populations will be shown to the Federal Evaluator for review.

- Evacuation/relocation requirements will be demonstrated through discussions at the EOCs, based on the scenario and county implementation procedures.

- Distribution of KI to institutionalized individuals, who cannot be evacuated, will be discussed with the Federal Evaluator.

- 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:** Chatham & Wake Counties

- School evacuation procedures and interviews will be demonstrated via discussion with key school staff members at each individual school location being evaluated.

Chatham Schools for evaluation:

Location: Moncure Elementary

Address: 600 Moncure Road
Moncure, NC 27559

Time: Off-Scenario, **February 25, 2009 at 9:00 am.**

Wake Schools for evaluation include:

Location: Holly Springs High School
Address: 5329 Cass Holt Road
Holly Springs, NC

Time: Off-Scenario, **February 26, 2009 at 1100.**

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, Chatham, Harnett, Lee & Wake Counties

- Traffic control points will be discussed with the Federal Evaluator at each County EOC. Law enforcement personnel will discuss proper procedures, equipment and turn back values. At least one agency representative will be available for interview.

- When State is in direction & control the SERT Leader will determine appropriate access control measures to restrict access to contaminated areas.

Chatham County representatives available for interview include:

NC State Highway Patrol
Chatham County Sherriff's Department

Time: On-scenario, March 3, 2009

Harnett County Representatives available for interview include:

Harnett County Sheriff's Department
NC State Highway Patrol

Time: On-scenario, Tuesday, March 3, 2009

Lee County Representatives available for interview include:

Sanford Police Department
Lee County Sheriff's Department

State Highway Patrol

Time: On-scenario, Tuesday, March 3, 2009

Wake County Representatives available for interview include:

Wake County Sheriff's Department

Time: On-scenario, Tuesday, March 3, 2009

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

EXTENT OF PLAY:

- Participants: NC SERT, Chatham, Harnett, Lee & Wake 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.

4. 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

- This criterion will be demonstrated for "***Training Only***" as part of the joint federal/state partnership agreement.

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

- This criterion will be demonstrated for "***Training Only***" as part of the joint federal/state partnership agreement.

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 SERT, Radiation Protection

- This criterion will be demonstrated for "***Training Only***" as part of the joint federal/state partnership agreement.

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 official with 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 REP-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, Chatham, Harnett, Lee & Wake Counties

- At Site Area Emergency North Carolina's counties will be in Direction and Control. Following the simulated sounding of the sirens and the first PAD recommendations to the public, the Counties will request the state to take over direction & control.

- Wake County will be the "Lead County", and will coordinate and conduct the countdown for simulated siren activation. An actual silent test will be conducted to simulate the sounding of sirens.

- EAS messages will be in accordance with Part 11 of FCC Rules and Regulations, previously approved for North Carolina by FEMA.

- PAD messages and news releases will be coordinated by the states and counties.

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**: NC SERT, Chatham, Harnett, Lee & Wake Counties

- **An actual silent test will be conducted to simulate sounding of the sirens. A feedback sheet will show if a siren has failed and if backup route alerting around the failed siren would be necessary.**

- **If a siren is deemed to have failed, back-up alerting will be discussed with the federal evaluator for a pre-determined zone (siren failure simulated).**

  Chatham County will demonstrate at:

  North Chatham Fire Department
  1442 Farrington Point
  Chapel Hill, NC 27514

  Date and Time: Off-scenario, **February 25, 2009 at 4:00 p.m.**

  Harnett County will demonstrate at:

  Northwest Harnett Fire Department and
  Summerville Fire Department
  6056 Christian Light Road
  Fuquay Varina, NC

  Date and Time: Off-scenario, **February 23 2009 at 6:00 p.m.**

  Northwest Harnett and Summerville Fire Department personnel will also discuss procedures for backup Alert & Notification activity for the Cape Fear River.

  Lee County will demonstrate at:

  Cape Fear Fire Department
  100 Johns Street
  Broadway, NC 27505

  Date and Time: Off-scenario, **February 23, 2009 at 7:00 p.m.**

Wake County will demonstrate at Holly Springs Staging Area

Location:
West Lake Road Elementary School
4500 West Lake Rd
Apex, NC 27539

Date and Time: On Scenario

The Evaluator will be escorted from the Wake County EOC to the demonstration site.

- *Lake and River Alert & Notification will be accomplished at Jordan Lake, Harris Lake and the Cape Fear & Haw River*.

  Participants: **Chatham Co EM, NC Wildlife Commission, NC Park Service, Highway Patrol, Aviation Section, US Army Corps of Engineers, Wake County Sheriff Office**

  Date and Time: Off-scenario, **February 25, 2009 at 1:00 p.m.**

  Locations: Jordan Lake
  Jordan Lake State Park Service Center

  Harris Lake
  Boat Storage Shelter
  Harris Visitors Center
  New Hill, NC

  Cape Fear & Haw Rivers
  NC Highway Patrol, Aviation Section

Agencies with water borne responsibilities will have one boat available to take a federal evaluator out on the lake if requested.

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**: NC SERT, Chatham, Harnett, Lee & Wake Counties

- PIOs or designated staff 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.

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:** Chatham, Harnett, Lee & Wake Counties

- Six evacuees will be monitored; *two (1 male and 1 female)* will be found to be contaminated.

- Evacuee decontamination procedures will be via discussion and walk through of facilities ***(No actual or simulated decontamination of evacuees**)*

- Two emergency workers will be monitored.

- Emergency Worker decontamination procedures will be via discussion and walk through of facilities ***(No actual or simulated decontamination of workers**).*

- ***Two*** vehicles will be monitored and decontamination of ***one*** vehicle will be discussed and demonstrated without use of water. ***(Current state water restrictions do not permit use of water for demonstration purposes.)***

Chatham County:

Public Reception Center, Monitoring and Decontamination:

Location: Chatham Central High School
14950 HC Highway 902
Bear Creek, NC 27207

Date & Time: **Off-scenario,** February 25 2009 at 7:00 pm

Emergency Worker and Vehicle Decontamination:

This activity will be demonstrated by Pittsboro Fire Department in 2011.

Harnett County:

Public Reception Center:

Location: Harnett Central Middle School
2529 Harnett Central School Road
Angier, NC

Date & Time: **Off-scenario,** February 24, 2009 at 7:00 pm.

Emergency Worker Decontamination:

Location: Angier Fire Department
309 North Broad Street
Angier, NC

Date & Time: **Off-scenario,** February 23, 2009 at 8:30 pm.

Lee County:

Public Reception Center:

Location: **Southern Lee High School – discussion will be conducted at:**
225 South Steele Street
Sanford, NC 27330

Date & Time: Off Scenario, Wednesday, March 4, 2009

Emergency Worker Decontamination:

Location: Northview Fire Department
104 Perkinson Road
Sanford, NC 27330

Date & Time: **Off-scenario,** February 23, 2009 at 7:00pm.

Wake County:

Public Reception Center:

Location: South East High School
2600 Rock Quarry Road
Raleigh, NC 27610

Date & Time: **Off-scenario,** March 3, 2009 at 7:00 p.m.

Emergency Worker and Vehicle Decontamination:

Raleigh Fire Department will demonstrate at:

Location: Raleigh Fire Station #12
Poole Road
Raleigh, NC 27607

Date & Time**: Off-scenario,** February 26, 2009 at 3:00 pm.

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:** Chatham, Harnett, Lee & Wake County.
- ***Two*** vehicles will be monitored and decontamination of ***one*** vehicle will be discussed and demonstrated without use of water. ***(Current state water restrictions do not permit use of water for demonstration purposes.)***

Chatham County:

This activity will be demonstrated in the 2011 exercise by Pittsboro Fire Department.

Harnett County:

Angier Fire Department will demonstrate at:

Angier Fire Department
309 Broad Street
Angier, NC

Date & Time**: Off-scenario,** February 23, 2009 at 8:30 pm

Lee County:

Emergency Vehicle Decontamination:

North View Fire Department
104 Perkinson Road
Sanford, NC

Date & Time: **Off-scenario,** February 23, 2009 at 7:00 pm.

Wake County:

Raleigh Fire Department will demonstrate at:

Fire Station #12
3409 Poole Road
Raleigh, NC 27610

Date & Time: **Off-scenario,** February 26, 2009 at 3:00 pm.

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

EXTENT OF PLAY:

- **Participants:** Chatham, Harnett, Lee & Wake Counties

Six individuals per site will be demonstrated.

Chatham County:

DSS, Public Health & American Red Cross will demonstrate at:

Chatham Central High School
14950 NC Highway 902
Bear Creek, NC 27207

Date & Time: **Off-scenario,** February 25, 2009 at 7:00 pm

Harnett County:

DSS, Public Health & American Red Cross will demonstrate at:

Harnett Central Middle School
2529 Harnett Central School Road
Angier, NC

Date & Time: **Off-scenario,** February 24, 2009 at 7:00 pm

Lee County:

DSS, Public Health & American Red Cross will demonstrate:

Southern Lee High School
2301 Tramway Road
Sanford, NC

Date & Time: **Off-scenario,** Wednesday, March 4, 2009

(Congregate Care activity will be accomplished via discussion at the Lee County Emergency Management office by members of the Lee County DSS, Public Health & American Red Cross)

Lee County Emergency Management
225 South Steele Street
Sanford, NC 27330

Wake County:

Wake County Human Services will demonstrate at

Southeast Raleigh High School
2600 Rock Quarry Road
Raleigh, NC 27610

Date & Time: **Off-scenario**, **Tuesday, March 3, 2009 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: Betsy Johnson Hospital, Harnett County EMS

Date & Time: September 15, 2009

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events (Exercise Scenario) used as the basis for invoking emergency response actions by OROs in the Harris Nuclear Plant exercise on March 3, 2009.

This State of North Carolina and Progress Energy submitted the scenario and it was approved by FEMA Region IV.

EXERCISE 09-02 TIME LINE (0730 – 1600)

An Operations crew will be prestaged at 0645 to perform turnover and operations in the simulator. On-shift Nuclear Licensed Operators (NLOs), Chemistry, and Instrumentation and Control (I&C) will be prestaged at 0730 to support initial simulator operations. The Dialogic System will page/call all other Emergency Response Organization (ERO) members to report to their Facilities. All Emergency Response Facilities will participate. All players must be ready to respond to pagers and announcements by 0745.

07:30	**Initial Conditions** **Core Burnup: 469 Effective Full Power Days (EFPD) End of Life (EOL)** **Reactor Power: 100 %** **∆I Target - 1.46 @ 100%** **Reactor Coolant System (RCS) Boron: 178 parts per million (ppm) Pressurizer (Pzr) Boron: 178 ppm** **Required Shutdown Boron Concentrations (from Main Control Room (MCR) Status Board):** **1075 ppm @ 70°F; 894 ppm @ 300°F; 401 ppm @ 557°F** **"B" Train in service, "B" Train protected** All Major Equipment is Operable with the following exceptions: NI-32, Source Range reactor power instrumentation has short in detector pre-amp cable leading into nuclear instrumentation (NI) cabinet. The cable is scheduled to be replaced at 1600 today. "B" Boron Acid Tank (BAT) out of service for repair to pump seals. Pump under clearance, maintenance scheduled to begin at 0800.
07:45	"B" Heater Drain Pump trips on overcurrent.
07:47	"A" Heater Drain Pump trips due to fluctuations in drain tank pressures resulting in Turbine Run Back. H-14 & J-13 Control Rods will become physically bound as a result of fuel rod bowing within the associated region of the reactor core. Reactor Coolant activity level increase is detected.
07:48	Reactor expected to be manually tripped. H-14 & J-13 Control Rods stuck out of core.
07:50	NI-31 fails to energize.
07:50	Reactor Coolant activity level increase is detected. Letdown heat

	exchanger valve gallery goes into alarm.
~08:05 or before	Fuel breach area radiation monitors >1000x normal. (2% fuel failure)
~08:05	"A" BAT pump trips upon start on overcurrent.
~08:10	Boric acid supplied to RCS from Reactor Water Storage Tank (RWST) 291/292.
(W/I 15 min of radiation (rad) monitors >1000x normal) **~08:20**	The Shift Supervisor – Operations (SSO) declares an **ALERT** (Emergency Action Level (EAL) 2-1-2). **ALERT** **EAL 2-1-2, one fission product barrier is breached due to fuel breach area radiation monitors >1000x normal.** **(Breach of Fuel barrier)**
09:30	300 gallons per minute (gpm) "B" Steam Generator tube rupture occurs. Manual Safety Injection (SI) initiated. "B" Core Safety Injection Pump (CSIP) immediately trips on overcurrent.
On or before **09:45**	**SITE AREA EMERGENCY** **EAL 2-1-3, two fission product barriers are breached/jeopardized due to RCS leakage greater than 50 gpm OR any steamline radiation monitor >10 mrem/hour** **AND** **Fuel breach area radiation monitors >1000x normal.** **OR** **EAL 1-1-3 projected dose >50 mrem Total Effective Dose Equivalent (TEDE)** **or beyond site boundary using adverse met data with estimated duration of release >30 minutes** **(Breach of Fuel & RCS barrier)**
~09:50	Sequential Events Controller (SEC) initiates Accountability.
On or before **10:00**	Notification to off-site authorities should include the fact that an "Emergency Release" is in progress (filtered). Effect of release is dissipated by 10:30.
~10:30	Anticipate "C" CSIP preps finished and started for inventory control. "C" CSIP lined up on "B" train and started contingent on Ops or Technical Support Center (TSC) initiating actions.
10:45	"A" CSIP trips on overcurrent.
10:55	Inlet isolation valve (Motor Operated Valve (MOV)) Circulating Cooling Water (CCW)-207, CCW Inlet To Reactor Coolant Pump (RCP) Motor Coolers, closes.
10:57	RCPs are tripped due to high motor temperatures.
~12:30	Inlet isolation valve CCW-207, CCW Inlet To RCP Motor Coolers

	repaired. Preps begin to start RCPs.
~12:45	RCPs may be started in real time contingent on RCP Evaluation.
12:48	The ruptured ("B" Steam Generator (SG)) SG safety partially opens (20%, flow rate 31 lbs/sec) due and will not reseat resulting in a more significant off-site radiological release. This release contains some Iodine and Particulate activity contribution with measured doses off-site in the mR/hr range. On-site report confirms (plume of steam) from safety valve.
On or before **13:08**	SEC-TSC should classify the event as a General Emergency. (EAL 2-1-4) **GENERAL EMERGENCY** **EAL 2-1-4, three fission product barriers are breached/jeopardized due to RCS leakage greater than 50 gpm OR any steamline rad monitor > 10 mR/HR** **AND** **Fuel breach area radiation monitors >1000x normal** **AND** **Primary to secondary leakage in any SG >10 gpm and affected safety valve not shut.** **(Breach of Fuel, RCS & Containment Fission Product Barriers (FPBs)**
On or before **13:08**	Wind direction is from 205°. Wind speed is at 3 mph. "G" stability class. Evacuate 2 mile radius and 5 miles downwind; shelter remaining Protective Action Recommendation (PAR) required: • **Evacuate Subzones A, B** • **Shelter Subzones C, D, E, F, G, H, I, J, K, L, M & N.** (Dose assessment results will confirm the adequacy of the plant condition based PARs)
13:20	Loss of 1B-SB feeder breaker, B Diesel Generator (DG) picks up loads.
14:00	Wind shift changes PAR. Wind direction is from 265°. New PAR, PAR – evacuate all 2 miles and downwind 5 miles, A, B, C. Shelter D, E, F, G, H, I, J, K, L, M, N. [Add C, but do not remove B because plume already went over it and it is already evacuated.]
14:20	Release is terminated when SG Safety valve is successfully gagged by accessing the steam tunnel.
14:30 or when all objectives have been completed.	Drill terminates and drill critique and facility restoration is conducted.

APPENDIX 5

RECOMMENDATIONS

Joint Information Center (JIC):

Recommendation #1: The status board showing the times of various facility activations in the utility portion of the JIC and the one in the State/county part did not agree. The lead State and county PIOs should provide the times to the designated contact posting critical data for the utility.

Recommendation #2: Designated PIO spokespersons in the media briefing room from the county and State were rushed with their status updates and the brevity distracted from the mock media capturing the information. Future sessions should focus on more use and reference to the Harris Nuclear Plant Safety Information Brochure and less brevity and more clarity.

Recommendation #3: There was some uncertainty as to whether the utility or the State should brief on wind directions and other meteorological data. This responsibility should be determined and a visual placed in the briefing area to facilitate reference at future sessions.

Recommendation #4: A professional public health representative was not at the JIC, which resulted in several media questions not being accurately answered. Recommend action be taken to assure a representative from the NC Department of Public Health or a representative from the NC DENR/Radiological Protection Section to serve as a technical advisor to the State Lead PIO.

Recommendation #5: Some counties claimed they did not receive press releases prepared at the JIC even though WebEOC logs indicated they were made available. Recommend that in future operations, the JIC Operations PIO assure contact is made with each county EOC to assure they are receiving the documents by WebEOC, or if they do not have access to WebEOC, send the press releases by facsimile.

Recommendation #6: It was noted that some of the county PIOs did not receive a copy of the EAS messages that was originated in the SEOC. These messages are a critical reference source, and recommended that the SEOC send copies to the JIC for distribution to the counties in a prompt manner.

Chatham County:

Recommendation #1: A computer was assigned in the EOC to depict WebEOC information; however, it was not monitored to the extent that critical information was passed to the EM Director. The individual assigned in the EOC as the WebEOC monitor should scan information and alert the EM Director when critical

information is posted, such as declarations of emergency, news releases from the JIC, agricultural advisories, and so forth.

Recommendation #2: The county prepared both Spanish and English news releases. There were delays in the transmission times because there weren't standard message templates in both languages. The PIO should have bi-lingual electronic templates of news releases correlated to the standard EAS messages.

Recommendation #3: Determine a means of avoiding potential contamination of evacuee paperwork and/or monitoring of evacuee paperwork in the Reception and Congregate Care Center.

Recommendation #4: Conduct a comprehensive review of Inspector EXP cables to ensure sufficient working cables are available to enable reliable instrument operation.

Harnett County:

Recommendation #1: In the Reception and Congregate Care Center, the Department of Social Services should review the American Red Cross Safe and Well website (https://disastersafe.redcross.org/) and consider adding this capability to its shelter program.

Wake County:

Recommendation #1: Potassium iodide (KI) for emergency workers performing Waterway Warning activities at Harris Lake is maintained in a secured metal cabinet at the Harris Lake storage facility. Wake County should ensure that the KI is stored within the manufacturers recommended temperature ranges.

Recommendation #2: Revise Wake County Standard Operating Procedure (SOP) 101, Radiological Exposure Control and Dosimetry, to make the following procedure enhancements:

- Determine if the Thermo Scientific Mk2 Electronic Personal Dosimeters (EPD) are an official part of the dosimerty program for Wake County. If so, then revise WCSOP-101 to provide guidance on their use and requirements.
- Add the requirement to perform a radiological briefing to emergency workers prior to activity operations. Include what subjects must be covered during the briefing.
- Evaluate the need to issue KI to emergency workers who would not be exposed to the plume, such as those involved in monitoring and decontamination activities outside the 10 mile EPZ. If it is determined that not all emergency workers covered by WCSOP-101 need KI, then revise it to define which ones need KI and which don't. For example, have two

categories of emergency workers, such as Category 1 (need KI) versus Category 2 (don't need KI).

- When the operators of radiation detection equipment respond to a monitoring and decontamination facility, they should perform operational checks on the equipment prior to leaving the issue location.
- Make provisions for appropriate exposure control and dosimetry forms to be available emergency workers prior to activities that require the use of dosimetry. The appropriate forms are included in WCSOP -101, but reinforce the need to use these forms any time dosimetry is issued.

Recommendation #3: In the Reception and Congregate Care Center, vehicles may be contaminated even though the occupants aren't. These vehicles would go undetected under current procedures. It is recommended to monitor all vehicles. Contaminated vehicles should then be separated from clean vehicles.