Final Exercise Report

Shearon Harris Nuclear Power Plant

Licensee: **Carolina Power and Light Company**

Exercise Date: **April 24, 2001**

Report Date: **July 24, 2001**

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

ML012990085

Parker - ML012990168

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

July 24, 2001

Mr. Luis A. Reyes
Regional Administrator – RII
Nuclear Regulatory Commission
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303

Dear Mr. Reyes:

Enclosed is a copy of the final exercise report for the April 24, 2001, full participation plume exposure pathway exercise of the offsite radiological emergency response plans site-specific to the Shearon Harris Nuclear Power Plant. This report addresses the evaluation of the plans and preparedness for the State of North Carolina and the affected county governments within the 10-mile Emergency Planning Zone.

The State of North Carolina, the risk counties of Chatham, Harnett, Lee and Wake, and the host counties of Alamance and Randolph participated in the exercise. The Federal Emergency Management Agency Region IV staff prepared the final exercise report. Copies of this report will be forwarded to the State of North Carolina, FEMA Headquarters and NRC Headquarters by my staff.

All objectives for this exercise were demonstrated. Activities that were demonstrated out-of-sequence included the evaluation of preparedness for schools, reception and congregate care centers, mobile route alerting, traffic control and emergency worker decontamination stations. No Deficiencies and two Areas Requiring Corrective Action (ARCA) were identified during this evaluation. One ARCA was identified during the demonstration of the Wake County congregate care center and the second was identified during the medical drill in July The medical drill ARCA concerned monitoring, contamination control and the decontamination of the patient. Wake County corrected its ARCA during a demonstration of the congregate care center in July. The ARCA identified during the previous exercise was also corrected during the April exercise.

Based on the results of the April 24, 2001, exercise and FEMA's review of North Carolina's annual Letter of Certification for 1999 and 2000, the offsite radiological emergency response plans and preparedness for the State of North Carolina and the affected local jurisdictions site-specific to the Shearon Harris Nuclear Power Plant can be implemented and are adequate to provide a reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site. The Title 44 CFR, Part 350 approval of the State of North Carolina offsite radiological emergency response

plans and preparedness site-specific to the Shearon Harris Nuclear Power Plant, granted on April 29, 1989, will remain in effect.

Should you have questions please contact Robert Perdue at 770-220-5464.

Sincerely,

Mary Lynne Miller
Acting Regional Director

Enclosure

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I. EXECUTIVE SUMMARY

On April 24, 2001, a full participation exercise was conducted in the plume exposure pathway emergency planning zone (EPZ) around the Shearon Harris Nuclear Power Plant by the Federal Emergency Management Agency (FEMA), Region IV. 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 (RERP) and procedures.

The previous exercise at this site was conducted on June 27, 2000. The qualifying emergency preparedness exercise was conducted on February 28, 1987.

FEMA wishes to acknowledge the efforts of the many individuals in the State of North Carolina and Risk Counties of Chatham, Harnett, Lee and Wake, as well as volunteers who participated in this exercise.

Protecting the public's health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise, especially among the volunteer organizations and personnel.

This report contains the evaluation of the biennial exercise and the following out-of-sequence activities that where demonstrated in April 2001: Protective actions for schools, reception and congregate care centers, mobile route alerting, emergency worker and vehicle decontamination stations, and traffic control points.

State and local organizations demonstrated knowledge of their emergency response plans and procedures and implemented them. There were no Deficiencies and two Areas Requiring Corrective Action (ARCA) were identified during the out-of-sequence activities. One ARCA concerned the congregate care center demonstration for Wake County. The County successfully demonstrated the correction of this ARCA on July 11, 2001. The second ARCA was identified during the July 12, 2001 Medical Drill concerning contamination control and decontamination techniques. The ARCA identified during the 1999 McGuire Nuclear Station exercise, 37-99-06-A-01, concerning the field monitoring teams was corrected during this exercise.

II. INTRODUCTION

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

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;

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

- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993); and

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

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

Representatives of these agencies serve on the FEMA Region IV Regional Assistance Committee (RAC) which is chaired by FEMA.

Formal submission of the RERPs for the Shearon Harris Nuclear Power Plant to FEMA Region IV 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 conducted on April 24, 2001, by FEMA Region IV to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Shearon Harris Nuclear Power Plant. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the Federal Evaluator team, with final determinations made by the FEMA Region IV Chief Evaluator and RAC Chairperson, and approved by the Regional Director.

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

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

- FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991; and

- FEMA-REP-15, "Radiological Emergency Preparedness Exercise Evaluation Methodology," September 1991.

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

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

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the April 24, 2001 exercise to test the offsite emergency response capabilities in the area surrounding the Shearon Harris Nuclear Power Plant.

A. Plume Emergency Planning Zone Description

The Carolina Power and Light Company operates the Shearon Harris Nuclear Power Plant. The facility is located in the State of North Carolina in the Southwest corner of Wake County, approximately 16 miles southwest of Raleigh, the County seat and State Capitol. The 10-mile EPZ encompasses portions of Wake, Chatham, Harnett and Lee Counties. Approximately 29,185 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. U. S. Highways 1, 64 and 401 with NC 42, 55 and 751 comprise the major road transportation arteries, along with rail lines controlled by Norfolk & Southern (NS) and CSX railroads. The EPZ is sub-divided into 14 Protective Action Zones.

B. Exercise Participants

In addition to the Carolina Light and Power Company, the following agencies, organizations, and units of government participated in the Shearon Harris Nuclear Power Plant exercise on April 24, 2001.

STATE OF NORTH CAROLINA

Department of Crime Control and
Public Safety, Division of Emergency Management (DEM)
Department of Environment, Health and Natural
Resources, Division of Radiation Protection (DRP)
Wildlife Resources Commission
Health and Human Resources
State Capitol Police

RISK JURISDICTIONS

Chatham County
Harnett County
Lee County
Wake County

FEDERAL

U. S. Army Corps of Engineers
FEMA

PRIVATE/VOLUNTEER ORGANIZATIONS

American Red Cross
Amateur Radio Operators
Pittsboro Volunteer Fire Department
Chatham County Chapter of the First Carolinas
Silk Hope Volunteer Fire Department
North Chatham Volunteer Fire Department
Angie/Black River Volunteer Fire Department
Buies Creek Volunteer Fire Department
Northwest Harnett County Volunteer Fire Department
Northview Fire Department
Cape Fear Rural Fire Department

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the Shearon Harris Nuclear Power Plant exercise on April 24, 2001. Also included are times notifications were made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: April 23, 2001 – Shearon Harris Nuclear Power Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken					
		SEOC	JIC	CHATHAM COUNTY	HARNETT COUNTY	LEE COUNTY	WAKE COUNTY
Unusual Event							
Alert	0918	0928	1040	0934	0930	0930	0931
Site Area Emergency	1155	1201	1217	1205	1208	1202	1206
General Emergency	1420	1429	1430	1432	1440	1432	1432
Simulated Rad. Release Started	1145	1205		1205	1206	1202	1206
Simulated Rad. Release Terminated	1530				1530	1530	1548
Facility Declared Operational		0950	1045	1018	1027	1020	1002
Declaration of State of Emergency		1315		1348	1250	1300	1255
Exercise Terminated		1530	1540	1530	1530	1530	1548
Early Precautionary Actions: Notify Schools/Special Needs Close Parks, Lakes and Rivers Evacuate Special Needs close/evacuate schools and daycare ctrs. Agriculture advisory				1030 1250 1250	1030 1215 1215 1301	1030	1030 1240 1240
1st Protective Action Decision: Public Warning		1211		1211	1211	1211	1211
1st Siren Activation		1225		1225	1225	1225	1225
1st EAS Message and NOAA: Stay Tuned		1225		1225	1225	1225	1225
2nd Protective Action Decision Evacuate Zones: A, B and C Shelter Zones: D, E, F, G, H, I, J, K, L and M		1443		1443	1443	1443	1443
2nd Siren Activation		1450		1450	1450	1450	1450
2nd EAS Message and NOAA		1451		1451	1451	1451	1451
KI Administration Decision: Workers ingest as well as residents unable to evacuate		1500		1516		1508	1519

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the April 24, 2001 exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Shearon Harris Nuclear Power Plant.

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

A. Summary Results of Exercise Evaluation - Table 2

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

M - Met (No Deficiency or 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 Results of Exercise Evaluation

DATE AND SITE: April 24, 2001 – Shearon Harris Nuclear Power Plant

Jurisdiction/Functional Entity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
STATE OF NORTH CAROLINA																																	
SEOC	M	M	M	M					M	M	M		M										M							M		M	M
Dose Assessment	M			M			M		M					M																M			
Radiological Monitor. Teams	M			M	M	M		M																									
Joint Information Center	M	M	M	M								M	M																				
Emergency Operations Facility	M	M	M	M																													
CHATHAM COUNTY																																	
Emergency Operations Center	M	M	M	M					M	M	M		M	M	M								M							M		M	M
Protective Actions for Schools					M											M																
Traffic Control Points					M												M																
Emergency Worker Decon					M																	M										
Reception/Congregate Care					M													M	M														
Mobile Route Alerting					M					M																							
HARNETT COUNTY																																	
Emergency Operations Center	M	M	M	M					M	M	M		M	M	M								M							M		M	M
Traffic Control Points					M												M																
Emergency Worker Decon					M																	M										
Reception/Congregate Care					M													M	M														
Mobile Route Alerting					M					M																							
LEE COUNTY																																	
Emergency Operations Ctn.	M	M	M	M					M	M	M		M	M	M								M							M		M	M
Traffic Control Points					M												M																
Emergency Worker Decon					M																	M										
Reception/Congregate Care					M													M	M														
Mobile Route Alerting					M					M																							
WAKE COUNTY																																	
Emergency Operations Ctn.	M	M	M	M					M	M	M		M	M	M								M							M		M	M
Staging Area	M			M	M																												
Traffic Control Points					M												M																
Vehicle Monitoring/Decon					M																	M										
Reception/Congregate Care					M													M	A														
Mobile Route Alerting					M					M																							
Medical Drill					M															A												

LEGEND: **M = MET** **D = Deficiency** **A = ARCA**

B. Status of Jurisdictions Evaluated

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

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

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

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

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

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

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

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

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

- An **ARCA** is defined in FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by

itself, to adversely impact public health and safety."

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

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

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

1. STATE OF NORTH CAROLINA

1.1 State Emergency Operations Center

The activation and mobilization of the State Emergency Response Team (SERT) was well demonstrated. The Director of Emergency Management and the Director of Operations provided positive direction and control, involved a competent and cooperative staff in the decision making process and conducted frequent and informative briefings and agency updates. The staff consistently coordinated with the utility, 10-mile EPZ counties and external agencies. The technical advisor, utility liaison, and radiation protection representatives worked cooperatively and provided valuable input in the formulation and implementation of the protective action decisions (PAD). The Public Information Officer (PIO) effectively coordinated with the Joint Information Center (JIC). Rumor control was demonstrated.

a. **MET:** Objectives 1, 2, 3, 4, 9, 10, 11, 13, 23, 30, 32 and 33

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

Dose assessment staff from the Division of Radiological Protection made dose projections and commensurate protective action recommendations (PAR). The dose assessment staff continuously monitored the plant status using their Emergency Response Data System (ERDS). "In house" software was used to calculate projected doses based on source term data supplied by the utility and the field team information. These assessments were consistent with those reported by the utility.

a. **MET:** Objectives 1, 4, 7, 9, 14 and 30

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 Radiological Field Monitoring Teams

The North Carolina Division of Radiation Protection deployed two field monitoring teams. These teams were pre-positioned at the North Carolina Armory adjacent to the Raleigh-Durham Airport and participated in the exercise from their arrival at 0938 until exercise termination. The teams were used to locate the extent of the downwind plume and to determine the magnitude of offsite radiation levels. Both teams demonstrated the ability to properly take radiation survey measurements, collect and analyze air samples for radionuclide content and monitor and record accumulated radiation exposure.

a. **MET:** Objectives 1, 4, 5, 6 and 8

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:**

Issue No.: 37-99-06-A-01

Description: The Red Field Team did not follow the Division of Radiation Protection SOPs for Radiological Emergency Sampling Monitoring Team Members. The team did not enclose the survey instruments and/or instrument probes in thin plastic as required in Section 2, Item 3. The procedures states: *Survey meters should be placed inside plastic bags to protect the instruments from particulate contamination. It may be appropriate to only cover the probe with protective plastic.* During the air sample collection, the team did not take the open and closed window measurements with the GM survey meter at the beginning and middle of the sample collection. Section 3, Item 5, Emergency Procedures for use of Low Volume Air Samplers, Note 1 (b) states: *open and closed measurements with the GM survey meter should be taken and recorded near the beginning, the middle and the end of the sample collection period to assure constant plume presence during the sampling period.*

Corrective Action Demonstrated: The field monitoring teams correctly took radiological readings before, during and after taking an air sample to verify that the sample was from the airborne plume. The field teams properly wrapped their survey instruments in plastic to prevent contamination.

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

1.4 Joint Information Center

The JIC staff demonstrated their ability to coordinate the development and dissemination of clear, accurate, and timely information to the news media to include, the interface with and integration of the rumor control function. The four affected counties, State and utility staffs operated effectively and professionally to manage the flow of information to the public through press releases and press briefings. Supplemental information to support the EAS broadcasts for the public was accomplished in the media center using displays and briefings on the evacuation and shelter data. The rumor control activity was very efficient. There was a timely response to emerging trends and the assurance of accurate dissemination of information.

a. **MET:** Objectives 1, 2, 3, 4, 11, 12 and 13

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

1.5 Emergency Operations Facility

The Shearon Harris 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, to include the coordination of field monitoring team activities, and the flow of technical information among the State officials deployed to the EOF, and with the utility operator, were exemplary. All State officials deployed to the EOF were well trained, knowledgeable, followed applicable procedures, and performed their respective responsibilities in an efficient and professional manner.

a. **MET:** Objectives 1, 2, 3 and 4

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2. RISK JURISDICTIONS

2.1 CHATHAM COUNTY

2.1.1 Emergency Operations Center

The County Emergency Management Director and the County Manager provided effective direction and control and coordinated decision-making throughout the Emergency Operations Center (EOC) operation. The EOC staff demonstrated the ability to respond to an incident at the Shearon Harris Nuclear Power Plant in a professional manner. They also coordinated with the neighboring EPZ counties, and other State and county agencies. The entire EOC staff from the County Manager to 911 center operators and volunteers worked well as a team. Chatham County demonstrated that it had all of the resources and plans needed to care for the special needs population.

a. **MET:** Objectives 1, 2, 3, 4, 9, 10, 11, 13, 14, 15, 23, 30, 32 and 33

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.1.2 Protective Action for Schools

The Chatham County School relocation interview was conducted at the Moncure Elementary School on April 10, 2001. The principal and a receptionist/bus driver were interviewed. Both were knowledgeable of school relocation plans, KI ingestion and evacuation routes. The school plans to update the REP school relocation plan and include it as a part of the school comprehensive emergency plan. The faculty and staff are provided annual in-service training on school relocation. The trained bus drivers include teachers, custodians and secretaries who work at the school. The bus drivers are classified as emergency workers. Teachers ride the buses with class attendance rolls to keep track of the students. Six buses drive in convoy with the lead and rear buses having cellular telephones. There are ample resources to successfully evacuate approximately

240 students. Parents are informed about school relocation plans, through brochures and information packets that are provided by the utility and the school on an annual basis.

a. **MET:** Objectives 5 and 16

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 Traffic Control Points

The North Carolina Highway Patrol established and manned traffic control points. All personnel demonstrated an excellent knowledge of their responsibilities with traffic and access control. Each had appropriate equipment for radiological exposure control and were knowledgeable of its use. They were also knowledgeable of the location of relocation centers, shelters and evacuation routes and knew what to do in case of road impediments.

a. **MET:** Objectives 5 and 17

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.14. Emergency Worker Decontamination

Emergency worker and vehicle decontamination was demonstrated by the Pittsboro Volunteer Fire Department and the Chatham County Chapter of the First Carolinas in an out-of-sequence drill on April 12, 2001. One vehicle and two individuals were appropriately surveyed and effectively decontaminated. Paper was spread on the walkways to prevent the spread of contamination and plans are in place to separate contaminated and clean individuals. Likewise, male and female emergency workers are

kept separate during the decontamination process. Clean and contaminated vehicles are also kept separate. Vehicles that cannot be readily decontaminated are parked, secured and retained until the emergency is over.

a. **MET:** Objectives 5 and 22

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.1.5 Reception and Congregate Care

Chatham County professionally demonstrated reception and congregate care operations at Jordan Mathews High School on April 12, 2001. The Chatham County Department of Social Services effectively managed the reception and congregate care center. The Silk Hope Volunteer Fire Department and Silver City Fire Department performed monitoring, contamination control and decontamination of the evacuees and their vehicles that came to the reception center. The volunteer personnel were knowledgeable of exposure limits, dosimetry use, turn back value, KI ingestion and contamination control measures for processing evacuees.

Congregate care was co-located at Jordan Mathews High School. Clean evacuees came through the reception center and were sent directly to the congregate care center. The Chatham County Department of Social Services and Red Cross staff were highly motivated, thoroughly trained and committed to their community.

The center was completely set up and personnel manned all key functions. Key areas such as mental health, medical assistance, child care nursing station, separate male and female restrooms, shelter office, and cooking and serving areas were clearly designated on a building diagram. Signs had also been put up throughout the shelter to designate key areas. Six evacuees were registered on American Red Cross forms. Signs designating the shelter location and directions were very visible.

a. **MET:** Objectives 5, 18 and 19

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.1.6 Mobile Route Alerting

The North Chatham Volunteer Fire Department ran two of the designated routes. The volunteer personnel were knowledgeable of dosimetry use, KI and route alerting procedures. When notified by the EOC that a siren is non-operational, back up route alerting will be initiated. An emergency vehicle with a public notification system is used. The firemen are provided folders that have route alerting maps and the names and addresses of the special needs population. Personnel interviewed demonstrated a strong awareness of emergency protective actions and manifested a strong community commitment.

a. **MET:** Objectives 5 and 10

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2 HARNETT COUNTY

2.2.1 Emergency Operations Center

Direction and control and interaction of the EOC staff were outstanding. Briefings were held frequently and established the tone for a very pro-active operation. Participation by the State, utility, public officials and volunteer organizations added realism and enhanced the overall operation. Maps, displays and status boards were prominently displayed and utilized. The county utilized the State EM2000 logging program and also maintained a computerized log, which was provided to the staff. A notebook containing operational procedures, the EOC layout, position descriptions, message forms, shift change information and operational logs was provided to each EOC member. Harnett County demonstrated that it had all the necessary resources and plans to care for special needs population.

a. **MET:** Objectives 1, 2, 3, 4, 9, 10, 11, 13, 14, 15, 23 30, 32 and 33

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2.2 Traffic Control Points

Harnett County fully demonstrated the organizational capability and resources necessary to control evacuation traffic flow. Personnel demonstrated radiological exposure control. The North Carolina Highway Patrol manned the TCPs. This activity, demonstrated at the time of the GE, was a coordinated effort between Harnett County and the North Carolina Highway Patrol. Plans and procedures, along with instruments and equipment were appropriate. The emergency workers demonstrated a good knowledge of their objectives.

a. **MET:** Objectives 5 and 17

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2.3 Emergency Worker Decontamination

The emergency worker and emergency vehicle equipment decontamination was conducted April 2, 2001. The Angier/Black River Volunteer Fire Department (ABRVFD) established and performed the necessary steps to monitor emergency vehicles and emergency workers at the ABRVFD station. The ABRVFD utilized their personnel, the fire station, parking and the surrounding area to ensure the efficient flow of emergency equipment and personnel. This allowed for a quick return to service and impoundment of vehicles beyond their decontamination capability. The emergency workers, after leaving the vehicle, are sent through personal monitoring and if necessary decontaminated within the fire station.

a. **MET:** Objectives 5 and 22

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.2.4 Reception and Congregate Care

Reception and congregate care activities were successfully demonstrated, out-of-sequence at Harnett Central High School on Monday, April 2, 2001. Procedures, facilities and equipment were available to demonstrate that the County is prepared to care for evacuees at the reception and congregate care center. Evacuees and vehicles coming from the plume area were appropriately surveyed and decontaminated. The clean and contaminated evacuees were kept separate and were subsequently escorted to the congregate care center where six evacuees were appropriately registered on ARC registration forms. The shelter manager and staff were knowledgeable of food availability, caring for the handicapped, medical needs and other shelter requirements. The emergency workers had 0-200 mR and permanent-record dosimetry, and they performed operational checks on their survey equipment (the portal monitors and CDV 700 survey meters). The ABRVFD and the Buies Creek Volunteer Fire Department effectively demonstrated monitoring and decontamination of evacuees and vehicles.

a. **MET:** Objectives 5, 18 and 19

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 Mobile Route Alerting

Route alerting for Harnett County was conducted on April 5, 2001. The Northwest Harnett County Volunteer Fire Department (NHVFD) demonstrated issuing of the appropriate dosimetry according to the current Standard Operating Guidance (SOG). NHVFD drove all seven of their assigned routes within the SOGs estimated times. Direction and control of route alerting was professionally conducted by the control team at the NHVFD station. The control team's knowledge of each vehicle's location and progress allowed for efficient utilization of equipment to assist on routes not completed. On completion of their assigned routes, vehicles are sent to the emergency worker monitoring and decontamination station at the Angier/Black River Volunteer Fire Department.

a. **MET:** Objectives 5 and 10

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.3 LEE COUNTY

2.3.1 Emergency Operations Center

The EOC is equipped and staffed to support continuous 24-hour operations during an emergency situation. The close proximity of the Emergency Communications Center and fixed amateur radio station facilitate the flow of information. The Director of Emergency Management actively coordinated the efforts of the staff and provided guidance on response activities and shift change procedures. All members of the staff displayed a professional and positive attitude while carrying out their duties. Highlighting EOC exercise participation was the active involvement of the Chairman of the County Commission, the Mayors of Sanford and Broadway, City and County Managers, and members of the City Council. The County has all of the plans and resources to care for the special needs population.

a. **MET:** Objectives 1, 2, 3, 4, 9, 10, 11, 13, 14, 15, 23, 30, 32 and 33

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

Traffic control point and security road block activities were demonstrated through interviews with two North Carolina State Patrolmen at the Lee County EOC. The patrolmen were equipped with appropriate exposure control devices and standard operating procedures (SOP) for their assigned locations. The officers were knowledgeable and thoroughly understood their duties.

a. **MET:** Objectives 5 and 17

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.3.3 Emergency Worker Decontamination

Emergency worker and vehicle decontamination was successfully demonstrated by the Northview Fire Department on April 3, 2001, at the Northview Fire Station in Lee County. Personnel were issued 0-200 mR, 0-20 R, and permanent record dosimetry. Personnel performed operational checks on the CDV-700 survey equipment and the direct-reading dosimetry had recently been leak tested. The monitors appropriately surveyed and decontaminated the emergency workers and vehicles who came into the fire station. Provisions are in place to separate clean and contaminated evacuees and vehicles. Appropriate monitoring and decontamination of one contaminated emergency worker and vehicle was demonstrated. Staff was appropriately trained in dosimetry use, KI, exposure limits, and other duties. These volunteers were conscientious in performing their duties and were dedicated to their community.

a. **MET:** Objectives 5 and 22

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.3.4 Reception and Congregate Care

Reception and congregate care were professionally demonstrated at the West Lee Middle School on April 4, 2001. Emergency workers had appropriate dosimetry. Six evacuees were monitored by passing through a portal monitor that had been operationally checked. Evacuees and vehicles were surveyed as they entered the reception center ground. Clean evacuees were sent directly to the congregate care area where they were registered on ARC forms. Contaminated evacuees were decontaminated to the lowest level possible. Green stickers were placed on the evacuees as they were escorted to the congregate care center. A walk-through of the shelter showed that nursing stations, cooking and serving arrangements, counseling, and medical planning are in place. The ARC, Sanford Police Department, Sanford Fire Department and Lee County Department of Social Services cooperated to make this a well run operation.

a. **MET:** Objectives 5, 18 and 19

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 Mobile Route Alerting

The Cape Fear Rural Fire Department (CFRFD) demonstrated the issuing of appropriate dosimeters according to the current SOG. Although CFRFD was not asked to perform an actual route alert, the Fire Chief demonstrated his knowledge of the SOG established routes and visually showed the route on the fire station map. Members of the department stated, based on previous experience and knowledge of the route; they could complete their assigned routes within the allocated 45 minutes. Unless the EOC alters the message, the standard message found within the SOG is used for dissemination to the public.

a. **MET:** Objectives 5 and 10

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4 WAKE COUNTY

2.4.1 Emergency Operations Center

Wake County's success in emergency operations rests with its exceptional direction and control and interaction of a knowledgeable staff. Support from elected officials facilitated making timely PADs. Wake County served as the lead county for alerting and notifying the public. The County has recently upgraded its EOC, which now uses the EM 2000 system to track messages and relay them to appropriate EOC staff. The system worked well for this exercise. Computer generated graphic displays were easy to see and used continuously to provide the staff with an instant update of the current situation. News releases were accurate and the PIO/EOC staff worked well together. Wake County also demonstrated that it had the resources and plans to care for its special needs population.

a. **MET:** Objectives 1, 2, 3, 4, 9, 10, 11, 13, 14, 15, 23, 30, 32 and 33

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 Staging Area

The Apex Staging Area was the location where radiological exposure control and related paper work were distributed to emergency workers. The staging officer was in charge of distribution. Each emergency worker received a 0-200 mR and a 0-20 R direct-reading dosimeter, a simulated TLD and individual exposure record. Five emergency workers received their required equipment, and along with the staging officer were knowledgeable of radiological exposure control.

a. **MET:** Objectives 1, 4 and 5

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 Protective Action for Schools

The Wake County School relocation interview was conducted at Apex High School on July 12, 2001. Present for the interview were the principals of Apex High School, Apex Middle School, Apex Elementary School, Lufkin Road 9th Grade Center, and Olive Chapel Elementary School, and the Senior Director, Wake County Public School Transportation System, the Assistant Director for Wake County Emergency Management, an Operations Team Manager and the Wake County Safety Officer. All were knowledgeable of school relocation plans, evacuation routes, and KI ingestion.

The faculty and staff are provided annual in-service training on school relocation. The trained bus drivers include teachers, custodians, and secretaries who communicated by cellular phone. Teachers ride the buses with class attendance rolls to keep track of the students. The buses travel in convoy with lead and rear law enforcement officers who also carry portable telephones. There are approximately eighty buses to evacuate the students in this area of Wake County.

Parents are informed about school relocation through letters and general information sent to parents by the schools and the Shearon Harris Nuclear Power Plant. School staff are provided handbooks with information on school relocation and some schools provide information to parents at school meetings. Each school has its own relocation plan. Wake County has the capable personnel and resources to successfully relocate students.

a. **MET:** Objectives 5 and 16

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 Traffic Control Points

The operation of the Wake County traffic and access control points was demonstrated through an interview with officers of the Wake County Sheriff's Department at the Apex Staging Area. These officers were knowledgeable of their assigned duties, familiar with the dosimetry, KI requirements and related forms. Traffic control equipment carried in the vehicles was sufficient to support the TCPs.

a. **MET:** Objectives 5 and 17

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.5 Vehicle Monitoring and Decontamination

The Wake County monitoring and vehicle decontamination was professionally demonstrated by the Cary Fire Department. The decontamination station was completely set up and contaminated vehicles could readily be driven through and cleaned with an up-to-date sprayer system. The firemen were provided 0-200 mR, 0-20 R direct-reading and permanent-record dosimetry. The personnel were very knowledgeable of exposure limits, dosimetry use, and KI ingestion. The dosimetry had been properly zeroed and leak tested.

The firemen wore Tyvek suits and masks. Personnel used appropriate survey, contamination control and decontamination methods to clean vehicles. The survey

meters had earphones and the probes were covered with plastic. There was ample parking space for clean and contaminated vehicles. Vehicles that can not be decontaminated are impounded and secured.

a. **MET:** Objectives 5 and 22

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.6 Emergency Worker and Vehicle Decontamination

The Emergency Worker and Decontamination station was demonstrated at Raleigh Fire Station 14. The Raleigh EMS personnel and ambulance that had transported the patient to Rex Hospital, were sent to this decontamination station, according to the county plan to be surveyed and decontaminated before they are released back into service. The decontamination station was completely set up and the personnel appropriately monitored the EMS personnel and the ambulance before they were released back into service. Self-reading and permanent dosimetry was available and personnel had a working knowledge of dosimetry use, exposure limits and turn-back values. All objectives were demonstrated.

a. **MET:** Objectives 5 and 16

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

2.4.7 Reception and Congregate Care

Reception and congregate care was demonstrated at the Carroll Middle School on April 9, 2001. Evacuees come to the school where they are monitored by walking through a portal monitor. The evacuees found clean are referred on to Sanderson High School, the congregate care center, located only a few blocks from the reception center. Contaminated evacuees are escorted to the showers. After showering, the evacuees are resurveyed. Once the evacuee is clean, a sticker is placed on the evacuee to indicate he or she has been decontaminated to the lowest possible level. A record of exposure and decontamination levels is also carried to the congregate care center. Buses are available to transport evacuees from the reception center to the congregate care center. Directions are provided to evacuees who wish to drive to Sanderson High School.

The Wake County Department of Environmental Services managed the reception center. Personnel performed operational checks on the survey equipment and used appropriate monitoring contamination control and decontamination procedures. Paper was placed on the walkways; separate shower and restroom facilities were available for women and men. Personnel were knowledgeable of exposure limits, dosimetry use and KI ingestion. The facility to decontaminate public vehicles is located elsewhere. Future plans include relocating the decontamination facility to Carroll Middle School.

a. **MET:** Objectives 5 and 18

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** YES

Issue No.: 30-01-19-A-01

Description: Congregate care for Wake County was demonstrated at Sanderson High School on April 9, 2001. The extent-of-play (EOP) stipulated that shelter personnel would conduct a walk-through, which would include a discussion of the shelter layout and the registration of six evacuees. Sanderson High School was locked and the Triangle Chapter of the ARC personnel did not have access to the school. The ARC personnel were unaware of the EOP requirements. Personnel did not have a plan or building layout, SOGs or a copy of their operational plan. They did not have the six evacuees nor a registration table. The shelter manager had to register ARC personnel who simulated evacuees. The shelter manager should have devoted himself to the broad management of the entire shelter. Personnel showed a mobile shelter unit that had blankets and cots. There was a 20 to 25 minute discussion by Red Cross personnel on what was to be done, and they seemed unsure of what their sheltering duties were. The disaster services officer led a tour of the shelter because the shelter manager was not conversant enough about the building.

Recommendation: This congregate care center should be appropriately set-up, and personnel should demonstrate the registration of six evacuees and their care. A diagram showing the location of all shelter functions and offices should also be included. The shelter manager should be knowledgeable about the congregate care operation at Sanderson High School.

Corrective Action Demonstrated: Congregate care was successfully re-demonstrated at Sanderson High School on July 11, 2001. The congregate care center was managed by the Triangle Area Chapter of the ARC with support from the Wake County Department of Human Services. Seven evacuees were professionally registered into the center on ARC forms. The Disaster Services Manager and Shelter Manager had large building layouts that clearly showed where key shelter functions were located. They were very familiar with the layouts and did an excellent job of describing these functions. Evacuees coming from the Reception center to Sanderson High School must carry Wake County Human Services registration forms showing they have been monitored and processed through the reception center. ARC personnel registering the evacuees into the shelter were very knowledgeable of the form and registration procedures in general.

The shelter manager took the evaluator on an informative walk-through of the shelter and thoroughly and enthusiastically explained activities that took place in the clearly designated areas in the shelter. Cafeteria, family counseling, dormitory, nursing and other key personnel manned their areas and were knowledgeable of their duties. The shelter manager successfully managed shelters during Hurricane Floyd and recent ice storms in North Carolina and this was obvious from the accurate and practical answers provided to the Federal evaluator. Provisions are in place, including contracts with major vendors to provide continuous feeding of evacuees. Sources of cots and blankets are also in place. ARC personnel had access to all key areas of the 1106 capacity shelter. Very visible signs were placed at the outside entrance to the congregate care center. Ample and knowledgeable personnel along resources were available to make this one of the most impressive congregate operations.

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs – UNRESOLVED: NONE

2.4.8 Mobile Route Alerting

Backup route alerting was demonstrated through an interview with firefighters of the Apex Fire Department. The Apex Fire Department drove one of the designated routes. The selected route was followed without the use of sirens or the public address system. The route selected for demonstration was covered in 18 minutes. The personnel were knowledgeable of dosimetry use, exposure limits and wore appropriate direct-reading and permanent-record dosimetry.

a. **MET:** Objectives 5 and 10

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

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

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

3. SUMMARY OF AREAS REQUIRING CORRECTIVE ACTION

3.1 2001 ARCAs

3.1.1 01-30-19-A-01 Wake County Reception and Congregate Care

Description: Congregate care for Wake County was demonstrated at Sanderson High School on April 9, 2001. The extent-of-play (EOP) stipulated that shelter personnel would do a walk-through, which would include a discussion of the shelter layout and the registration of six evacuees. Sanderson High School was locked and the Triangle Chapter of the ARC personnel did not have access to the school. The ARC personnel were unaware of the EOP requirements. Personnel did not have a plan or building layout, SOGs or copy of their operational plan. They did not have the six evacuees nor a registration table. The shelter manager had to register ARC personnel who simulated evacuees. The shelter manager should have devoted himself to the broad management of the entire shelter. Personnel showed a mobile shelter unit that had blankets and cots. There was a 20 to 25 minute discussion by Red Cross personnel on what was to be done, and they seemed unsure of what their sheltering duties were. The disaster services officer led a tour of the shelter because the shelter manager was not conversant enough about the building.

Recommendation: This congregate care center should be appropriately set-up, and demonstrate the registration of six evacuees and their care. A diagram showing the location of all shelter functions and offices should also be included. The shelter manager should be knowledgeable about the congregate care operation at Sanderson High School.

Corrective Action Demonstrated: Congregate care was successfully re-demonstrated at Sanderson High School on July 11, 2001. The congregate care center was managed by the Triangle Area Chapter of the ARC with support from the Wake County Department of Human Services. Seven evacuees

were professionally registered into the center on ARC forms. The Disaster Services Manager and Shelter Manager had large building layouts that clearly showed where key shelter functions were located. They were very familiar with the layouts and did an excellent job of describing these functions. Evacuees coming from the Reception center to Sanderson High School must carry Wake County Human Services registration forms showing they have been monitored and processed through the reception center. ARC personnel registering the evacuees into the shelter were very knowledgeable of the form and registration procedures in general.

The shelter manager took the evaluator on an informative walk-through of the shelter and thoroughly and enthusiastically explained activities that took place in the clearly designated areas in the shelter. Cafeteria, family counseling, dormitory, nursing and other key personnel manned their areas and were knowledgeable of their duties. The shelter manager successfully managed shelters during Hurricane Floyd and recent ice storms in North Carolina and this was obvious from the accurate and practical answers provided to the Federal evaluator. Provisions are in place, including contracts with major vendors to provide continuous feeding of evacuees. Sources of cots and blankets are also in place. ARC personnel had access to all key areas of the 1106 capacity shelter. Very visible signs were placed at the outside entrance to the congregate care center. Ample and knowledgeable personnel along resources were available to make this one of the most impressive congregate operations.

3.1.2 30-01-21-A-01 Medical Drill

Description: In the Emergency Room, the Emergency Room (ER) personnel used inappropriate monitoring, contamination control and decontamination procedures. The physician who decontaminated at least two injured areas, hastily washed the wounds with solutions from a syringe, from which he allowed contaminated solutions to splash on other ER personnel, the decontamination tray and the floor. This was done continuously. Contaminated water was allowed to

puddle in the decontamination tray because of poor drainage. While surveying the patient and personnel, the monitor allowed the glove fingers from the probe to touch the patient and personnel without changing the probe. While decontaminating the head of the patient, the ER personnel allowed the contaminated solutions the run down into the patients' hair allowing the spread of contamination, which they should have controlled. At points the ER staff seemed unsure about what procedures to follow because no monitoring, contamination control or exit procedures were posted on the wall for ER personnel to follow. Nasal, wound, salvia nor ear samples were fully taken to determine if the patient had some internal contamination.

Recommendation: The Emergency Room personnel at the Rex Hospital should be provided training in monitoring, contamination control and decontamination procedures.

Schedule of Corrective Actions: To be provided.

3.2 PRIOR ARCAs RESOLVED

3.2.1 37-99-06-A-01 SEOC/Radiological Field Monitoring Team

Description: The Red Field Team did not follow the Division of Radiation Protection SOPs for Radiological Emergency Sampling Monitoring Team Members. The team did not enclose the survey instruments and/or instrument probes in thin plastic as required in Section 2, Item 3. The procedures states: *Survey meters should be placed inside plastic bags to protect the instruments from particulate contamination. It may be appropriate to only cover the probe with protective plastic.* During the air sample collection, the team did not take the open and closed window measurements with the GM survey meter at the beginning and middle of the sample collection. Section 3, Item 5, Emergency Procedures for use of Low Volume Air Samplers, Note 1 (b) states: *open and closed measurements with the GM survey meter should be taken and recorded near the beginning, the middle and the end*

of the sample collection period to assure constant plume presence during the sampling period.

Corrective Action Demonstrated: The field monitoring teams correctly took radiological readings before, during and after taking an air sample to verify that the sample was from the airborne plume. Also, the field teams properly wrapped their survey instruments in plastic to prevent contamination.

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

ARC	American Red Cross
ARCA	Area Requiring Corrective Action
CD-V	Civil Defense - Victoreen
CFR	Code of Federal Regulations
CPM	Counts Per Minute
DHHS	Department of Health and Human Services
DOC	Department of Commerce
DOE	Department of Energy
DOI	Department of the Interior
DOT	Department of Transportation
DRD	Direct Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EEM	Exercise Evaluation Methodology
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FR	Federal Register
FTC	Field Team Coordinator
ft/min	feet per minute
ft^3/min	cubic feet per minute
GE	General Emergency
GM	Guidance Memorandum
JIC	Joint Information Center
KI	Potassium Iodide

mR	milliroentgen
mR/h	milliroentgen per hour
NRC	U.S. 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*
OEM	Office of Emergency Management
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PIO	Public Information Officer
R	Roentgen
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
REA	Radioactive Emergency Area
REM	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
R/h	Roentgen(s) per hour
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
TCP	Traffic Control Point
TLD	Thermoluminescent Dosimeter
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS

Following is a list of personnel evaluating the Shearon Harris Nuclear Power Plant exercise on April 24, 2001. The organizations represented are indicated by the following abbreviations:

DOT	- Department of Transportation
FDA	- Food and Drug Administration
FEMA	- Federal Emergency Management Agency
ICF	- ICF Consulting Incorporated
NRC	- Nuclear Regulatory Commission
USDA	- United States Department of Agriculture

Lawrence A. Robertson **RAC Chairman**

EVALUATION SITE	EVALUATOR	ORGANIZATION
Robert E. Perdue	Chief Evaluator	FEMA
STATE OF NORTH CAROLINA		
State Emergency Operations Center	Robert Perdue Bill Serrano	FEMA ICF
Radiological Field Monitoring Teams	Elizabeth Thompson James Willison	ICF ICF
Dose Assessment	Kevin Flynn	ICF
Joint Media Center	Brett Kriger	ICF
Emergency Operations Facility	Robert Trojanowski	NRC
CHATHAM COUNTY		
Emergency Operations Center	Eddie Hickman	FEMA
Traffic Control Points	Douglas Stutz	ICF
Protective Action for Schools	Robert Perdue Bill Larrabee	FEMA ICF
Reception Center and Congregate Care	Robert Perdue	FEMA

EVALUATION SITE	EVALUATOR	ORGANIZATION
	Bill Larrabee	ICF
Emergency Worker Decontamination	Robert Perdue Bill Larrabee	FEMA ICF
Mobile Route Alerting	Robert Perdue Bill Larrabee	FEMA ICF
HARNETT COUNTY		
Emergency Operations Center	Helen Wilgus Harold Dorminey	FEMA DOT
Traffic Control Points	Robert Neisius	ICF
Emergency Worker Decontamination	Robert Perdue Randy Hecht	FEMA FEMA
Reception Center and Congregate Care	Robert Perdue Randy Hecht	FEMA FEMA
Mobile Routing Alerting	Robert Perdue Randy Hecht	ICF FEMA
LEE COUNTY		
Emergency Operations Center	Bill Larrabee	ICF
Traffic Control Points	Rosemary Samsel	ICF
Emergency Worker Decontamination	Robert Perdue Randy Hecht	FEMA FEMA
Reception and Congregate Care	Robert Perdue Randy Hecht	FEMA FEMA
Mobile Route Alerting	Robert Perdue Randy Hecht	FEMA FEMA
WAKE COUNTY		
Emergency Operations Center	Don Cornell Tom Trout	FEMA FDA

EVALUATION SITE	EVALUATOR	ORGANIZATION
Traffic Control Points	Lawrence Boyle	ICF
Reception Congregate Care	Robert Perdue Bill Larrabee	FEMA ICF
Protective Actions for Schools	Robert Perdue Bill Larrabee	FEMA ICF
Vehicle Monitoring/Decontamination	Robert Perdue Bill Larrabee	FEMA ICF
Mobile Route Alerting	Robert Perdue Bill Larrabee	FEMA ICF

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix contains the and the extent-of-play agreement exercise objectives which were scheduled for demonstration in the Shearon Harris Nuclear Power Plant exercise on April 24, 2001.

A. Exercise Objectives

Attached are the specific radiological emergency preparedness objectives scheduled for demonstration during this exercise.

B. Extent-of-Play Agreement

The extent-of-play agreement on the following pages was submitted by the State of North Carolina, and was approved by FEMA Region IV.

North Carolina Department of Crime Control and Public Safety
Division of Emergency Management
4713 Mail Service Center • Raleigh, NC 27699-4713

Michael F. Easley
Governor

Bryan E. Beatty
Secretary

March 1, 2001

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

Dear Dr. Perdue:

Attached you will find a revised copy of the extent of play agreement, to include FEMA's comments, for Harris Nuclear Power Plant's partial participation exercise. The revised EOP has been discussed and approved by the Task Force. We look forward to your letter of acceptance.

With best regards,

Scott Carpenter, NCEM
REP Exercise Planner

c: Stephen Payne
Chris Coudriet
Elaine Wathen
Woody Mashburn
Johnny James

EXERCISE OBJECTIVES
HARRIS NUCLEAR POWER PLANT
April 24, 2001

2001 HARRIS EXERCISE OBJECTIVES							
Site: Harris Nuclear Plant **Exercise Date: April 24, 2001** **Type: Full Participation**	NC SERT	RAD	CHATHAM	HARNETT	LEE	WAKE	
1. Mobilization of Emergency Personnel	X	X	X	X	X	X	
2. Facilities/Equipment/Displays	X	X	X	X	X	X	
3. Direction and Control	X	X	X	X	X	X	
4. Communications	X	X	X	X	X	X	
5. Emergency Worker Exposure Control		X	X	X	X	X	
7. Dose Projection		X					
9. Plume Protective Action Decision	X	X	X	X	X	X	
10. Alert and Notification	X		X	X	X	X	
11. Public Instructions	X		X	X	X	X	
12. Emergency Information - Media	X		X	X	X	X	
13. Rumor Control	X		X	X	X	X	
14. Use of KI	X	X	X	X	X	X	
15. Protective Action - Special Population			X	X	X	X	
16. Protective Action - Schools			X			X	Off-scenario
17. TCPs and SRBs	X		X	X	X	X	
18. Reception Centers			X	X	X	X	Off-scenario
19. Congregate Care Centers			X	X	X	X	Off-scenario
20. Medical Services - Transportation						X	Off-scenario
21. Medical Services - Facilities						X	Off-scenario
22. Emergency Worker Decontamination			X	X	X	X	Off-scenario
23. Supplementary Assistance	X		X	X	X	X	
30. Continuous 24-hour Staffing			X	X	X		Off-scenario
32. Off-hours Exercise or Drill	X		X	X	X	X	Off-scenario
33. Unannounced Exercise	X		X	X	X	X	Off-scenario

HARRIS NUCLEAR POWER PLANT
Extent of Play Instructions
Full Participation Exercise
April 24, 2001

OBJECTIVE #1
Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

STATE OF NORTH CAROLINA

Carolina Power and Light (CP&L) Harris Nuclear Power Plant (HNP) will make the initial notification to the State Warning Point (SWP) using the Selective Signal System (SSS). The State Warning Point will then notify the North Carolina Division of Emergency Management (EM), Communications Section and the Division of Radiation Protection (DRP). Upon notification, EM Communications staff will notify State Emergency Response Team (SERT) agencies and request that they respond to the State Emergency Operations Center (SEOC). HNP will be notified when the SEOC is activated and all further notification will come directly to the SEOC.

DIVISION OF RADIATION PROTECTION

The Mobile Laboratory and other field activities will be located at the NC National Guard Armory near the RDU Airport. The mobile laboratory activity will be conducted (**FOR TRAINING ONLY**) from NC National Guard Armory near the RDU International Airport. Mobile laboratory activity **WILL NOT BE EVALUATED** as part of this exercise. Pre-positioning of field units, Mobile Lab and field survey teams, at the NC National Guard Armory will be due to the length of time required to respond during the scenario time frame.

CHATHAM, LEE, HARNETT AND WAKE COUNTIES

The utility will make the initial notification to the County Warning Points. Counties will make appropriate notifications. County EOCs will activate when Alert is declared. After EOC activation, all other utility notifications will be directed to the EOCs, and field personnel will be activated as needed.

OBJECTIVE #2
Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.

STATE OF NORTH CAROLINA

The SEOC will be staffed and equipped to support response activities. Event status information will be displayed. State Capitol Police will provide security.

CHATHAM COUNTY

The Chatham County EOC is equipped with the equipment necessary for operations. Security will be provided by the Chatham County Sheriff's Department. NOTE: A staff member will provide the evaluator information, by interview, describing the emergency backup generator and its location. This interview should be accomplished prior to the start of the drill.

HARNETT AND LEE COUNTIES

The Harnett and Lee County EOCs will have all appropriate equipment and displays for operations. The Harnett County Sheriff's Department will provide security at the Harnett County EOC. The Sanford Police Department will provide security at the Lee County EOC. A photo ID will be required for entrance into the EOCs.

WAKE COUNTY

The Wake County EOC has all appropriate equipment and displays for operations. The Wake County Sheriff's Department will demonstrate security of the EOC. A photo ID will be required for entrance into the EOC. The Apex Command Post will also be demonstrated during the exercise along with the Apex Staging Area.

OBJECTIVE #3

Demonstrate the capability to direct and control emergency operations.

STATE OF NORTH CAROLINA

The State will provide direction and control support to the Counties and assume direction and control upon request of the EPZ Counties. The SERT Leader will assume responsibility for direction and control as well as decisions impacting protective actions when the State assumes direction and control.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

The Counties will provide direction and control with Wake County as the Lead County until the State is requested to assume direction and control. Each individual agency's EOC representative will direct field activities from the County EOC. All direction and control for inter-county coordination will be demonstrated by working with other EPZ Counties and the State EOC.

OBJECTIVE #4

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

STATE OF NORTH CAROLINA

The EOC will maintain communications with the EPZ County EOCs, CP&L's Harris Plant EOF, the Joint Information Center (JIC), the State Warning Point, field survey teams, and the DRP Mobile Lab.

CHATHAM, HARNETT, LEE AND WAKE COUNTIES

Communications will be demonstrated using dedicated telephone lines, public service telephone lines, cell phones, FAX machines, radios, and computer modems between County EOCs, the State EOC, the JIC, CP&L's EOF, and field response units.

OBJECTIVE #5
Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.

RADIATION PROTECTION

All field staff will be provided with the following dosimeter: 0-200 mR SRD, 0-20 R SRD, emergency TLD (demonstrated with clothespin). Prior to reaching the turnback exposure (5 R) limit, responders will call the SEOC or Mobile Lab to receive additional protective action instructions.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

Emergency responders working within the 10-mile EPZ will have 0-200 mR dosimeters, 0-20 R dosimeters, TLD's (simulated using clothespins or paperclips) and individual dose cards. Responders who conduct monitoring activities outside the 10-mile EPZ will have 0-200 mR dosimeters, TLD's (simulated using clothespins or paperclips) and individual dose cards. Respective county agencies will maintain exposure records for their responders. Prior to reaching the turnback exposure (5 R) limit, responders will call their county EOC to receive additional protective action instructions.

OBJECTIVE #6:
Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.

RADIATION PROTECTION

The Mobile Laboratory and two field survey teams will be located at the NC National Guard Armory near the RDU International Airport. The two field survey teams will deploy and conduct activity from this location for FEMA evaluation. (Pre-positioning of field units, Mobile Lab and field survey teams, at the NC National Guard Armory will be due to the length of time required to deploy with respect to the compressed scenario time schedule.)

The mobile laboratory activity will be conducted (**FOR TRAINING ONLY**) from NC National Guard Armory near the RDU International Airport. Mobile laboratory activity **WILL NOT BE EVALUATED** as part of this exercise. It will take place on scenario and a FEMA evaluator will informally provide feedback to the mobile laboratory team as part of the technical assistance available through the FEMA-State partnership. Radiation Protection personnel responding to the State EOC will respond from their normal work locations

OBJECTIVE #7
Demonstrate the capability for dose projections and protective action recommendations regarding evacuation and sheltering.

DIVISION OF RADIATION PROTECTION

As a member of SERT, the NC Division of Radiation Protection will establish an independent dose assessment and projection team at the State EOC. The team will communicate with the Utility EOF; the Mobile Lab, and deployed field survey teams to obtain data for developing dose projections (either based on plant conditions or source term data). Back-up dose assessment capability will be demonstrated via a battery powered portable computer.

OBJECTIVE #8:

Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} (0.0000001) microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.

RADIATION PROTECTION

Each survey team will use charcoal cartridges or out of date Silver Zeolite cartridges when taking air samples during the exercise. Each survey team will demonstrate the capability of determining whether their location is in the plume pathway, by taking open and closed window exposure rate measurements. Survey team procedures do not require air samples to be taken in locations where the exposure rate is 100 millirogens per hour or greater. Air samples will only be taken when indications from portable survey meters indicate a plume is present. Each survey team will demonstrate the capability of collecting at least one air sample. (Objective will be demonstrated to correct McGuire ARCA #37-99-06-A-01)

OBJECTIVE #9

Demonstrate the capability to make timely and appropriate protective action decisions (PADs).

STATE OF NORTH CAROLINA

The Division of Radiation Protection SERT members will analyze technical data provided by the Utility and make protective action recommendations to the SERT Leader and County Emergency Management Coordinators. While the Counties are in direction and control, protective action recommendations will be discussed with the SERT Leaders using the Decision Line. When the State is in direction and control, the SERT Leaders will make the protective action decisions following discussions between all EPZ Counties using the Decision Line.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

Protective action recommendations from the Utility will be discussed among all EPZ Counties, and the State EOC using the Decision Line. The Counties will ultimately make decisions for their portion of the EPZ while they are in direction and control. After the State assumes direction and control, the same coordination will take place with the State being responsible for the final decision.

OBJECTIVE #10

Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency-planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

STATE OF NORTH CAROLINA

The SERT at the State EOC will lend technical support to the Counties while the Counties are in direction and control.. Wake County, as "Lead County" will do coordination and implementation of alert and notification message activity. Message content will be discussed with the EPZ counties and the State EOC using the Decision Line. At General Emergency, the State EOC will have direction and control and will select the appropriate message. Upon concurrence with the Counties, North Carolina SERT will lead and conduct the countdown. The EAS Coordinator at the State EOC will **SIMULATE** reading the EAS message to the LP-1 Station.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

At the Site Area Emergency, the appropriate EAS message will be selected. The message will be discussed with the other EPZ Counties. Once each County has concurred on the content, the time will be agreed upon for **SIMULATED** countdown and activation of the siren system and EAS. Wake County will be the lead county and responsible for countdown to simulated siren activation and activation of EAS, based upon FCC rules and regulations concerning EAS and latest FEMA guidance on EAS.

County Emergency Management agencies maintain a list of special needs people within the EPZ. The lists will be available for review. During the exercise, calls to special needs individuals **WILL NOT BE MADE,** to prevent raising undue concerns among residents due to the exercise play. Notifier test results will be available for review by evaluators.

Backup Route-Alerting will be demonstrated by the Counties Off-Scenario. Messages will be read to the Evaluator prior to running routes, but **WILL NOT BE BROADCAST**, during the drive along designated routes. This is to prevent raising undue concerns among residents due to exercise play.

CHATHAM COUNTY

North Chatham Fire Department personnel will be available at the North Chatham Fire Department for interview by the FEMA evaluator. Personnel will demonstrate back-up route alerting on a selected route in Zone "N", if desired by the evaluator. Interviews and driving of an actual route will be accomplished Off-Scenario **Tuesday, April 10, 2001 between 1900 to 2000 hrs.**

HARNETT COUNTY

Northwest Harnett Volunteer Fire Department personnel will be available at the Northwest Harnett Volunteer Fire Department, Main Station for interview by the FEMA Evaluator. Personnel will demonstrate back-up route alerting on a selected route in Zone "H" if desired by the evaluator. Interviews and driving of an actual route will be accomplished Off-Scenario **Thursday, April 5, 2001 between 1930 to 2030 hrs.**

LEE COUNTY

Cape Fear Volunteer Fire Department and the Lee County Sheriff's Department personnel will be available at the Lee County EOC for interview by the FEMA Evaluator. Personnel will demonstrate back-up route alerting on a selected route in Zone "I" if desired by the evaluator. Interviews and driving of an actual route will be accomplished Off-Scenario **Tuesday, April 3, 2001 between 1900 to 2000 hrs.**

WAKE COUNTY

Units for back-up route alerting in Evacuation Zones "B" and "E" will be staged in the Apex Staging Area. These units will be available for interview by the FEMA Evaluator. Personnel will demonstrate back-up route alerting on a selected route in Zone "E" if desired by the evaluator. Interviews and driving of an actual route in Zone "E" will be accomplished On-Scenario **Tuesday, April 24, 2001 between 1200 and 1400 hrs**.

OBJECTIVE #11
Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

STATE OF NORTH CAROLINA

The State of North Carolina EAS Coordinator will coordinate message content and **SIMULATE** activation of the LP-1 Station for an EAS message at the Site Area Emergency and the General Emergency. The message will be consistent with latest FEMA guidance on EAS in accordance with the FCC rules, Part 11. The EAS Coordinator at the State will contact the LP-1 Station and **SIMULATE** reading the message. Public Information Officers in the JIC will follow EAS activation within 20 minutes by conducting a media briefing or providing news releases containing additional information. **SIMULATED** activation of NOAA radios will also be conducted.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

County EOCs will be responsible for emergency public information and instructions. The EPZ Counties and the State will coordinate and concur on the EAS messages. At Site Area Emergency, Wake County will be responsible for contacting the LP-1 Station through the State EAS Coordinator. At General Emergency, the State will be responsible for contacting the LP-1 Station.

OBJECTIVE #12
Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

STATE OF NORTH CAROLINA

The State of North Carolina Public Information Staff will serve as support to the County PIOs during the activation of the JIC. State PIO staff will assist the County PIOs with the development of news releases and participate in media briefings to answer questions concerning State activities and resources. When the State assumes direction and control, the State Lead PIO will take the lead role for off-site public information. State PIOs will develop and issue news releases and participate in media briefings in the JIC.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

The respective Counties will have public information officers in both the County EOCs and the JIC. They will work together to develop news releases, obtain approval from appropriate county officials, and address the mock media during media briefings. Once the JIC is activated, all news releases will come from that location.

OBJECTIVE #13
Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

STATE OF NORTH CAROLINA

Rumor Control will be handled by the State Public Information Officers assigned to the State EOC, in Raleigh, until such time as the JIC is activated. At that time, the State will provide rumor control at the JIC. If a rumor control call comes in that needs to be clarified or suppressed, the PIO should develop a news release to directly suppress the rumor or address the rumor at the news conference. The Evaluator will be provided a copy of the news release

that was issued to suppress the rumor. Rumor calls will be placed so as to average 6 calls per agency represented at the JIC.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

The County Public Information staffs in each county will handle rumor control calls until such time as the JIC is activated. Following activation of the JIC, all rumor control calls will be transferred to that location. News releases will be developed to address concerns from the rumor control calls.

OBJECTIVE #14

Demonstrate the capability to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals, and if the State plan specifies the general public.

STATE OF NORTH CAROLINA

Personnel, including the State Pharmacist, will discuss the distribution actions, decision-making criteria and will make a decision, based upon the scenario, as to whether administration of KI is appropriate.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

Counties will discuss distribution actions and dose administration procedures with the Federal Evaluator at the County EOCs. This discussion will include making a decision on whether to administer KI, based upon scenario conditions. This decision will include coordination with County Health Directors.

OBJECTIVE #15

Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

Each County maintains a list of specials needs individuals located within the 10-mile EPZ. This list will be available for review by the FEMA Evaluator. Each County will make notifications to special needs transportation providers and provide information to evaluators as to the number of vehicles and types of vehicles available for transportation needs. Appropriate agencies in each county will discuss special needs shelter arrangements for their county. No actual notification of special needs individuals will take place during the exercise to prevent an undue concerns.

OBJECTIVE #16

Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency-planning zone.

CHATHAM COUNTY

This objective will be demonstrated by discussion only, with appropriate school officials. Interviews with school officials by the FEMA Evaluator Off-Scenario at Moncure Elementary School on **Tuesday, April 10, 2001 at 1330 hrs.**

WAKE COUNTY

This objective will be demonstrated by discussion only, with appropriate school officials from Evacuation Zones "B" and "E". Interviews by the FEMA Evaluations will be Off-Scenario at the Apex Senior High School on **Wednesday, April 11, 2001 at 1000 hrs.** Wake County school officials from the following schools will be available at Apex High School for interviews concerning their school's plans:

* Apex Senior High
* Baucom Elementary
* Apex Elementary
* St. Mary Magdelin Catholic School
* Apex Middle School
* Lufkin Road 9th Grade Center
* Olive Chapel Elementary

The Transportation Supervisor for the Apex area will also be available for interview.

OBJECTIVE #17

Demonstrate the organizational capability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.

STATE OF NORTH CAROLINA

The North Carolina State Highway Patrol will man assigned Traffic Control Points (TCPs) and Security Road Blocks (SRBs) in Chatham, Harnett, and Lee Counties.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

Traffic control points and security roadblocks will be demonstrated by interview. Law enforcement agency representatives, State Highway Patrol and Wake County Sheriff's Department personnel will meet with the FEMA Evaluator to discuss proper procedures, equipment, turn back values, etc. If Federal evaluators would like to see one of the locations demonstrated then the selected law enforcement officer will be available to go with the FEMA Evaluator to the TCP/SRB during the Tuesday, April 24, 2001 exercise time frame. Interviews with the State Highway Patrol will be conducted in the Chatham, Harnett, and Lee County EOCs. Interviews with the Wake County Sheriff's Department will be conducted at the Apex Staging Area.

CHATHAM COUNTY

Traffic control points and security road blocks to be demonstrated during this exercise are:

TCP#6 (US 64E and SR 1945) – State Highway Patrol
TCP #10 (US 64E and SR 1008) – State Highway Patrol
SRB #14 (US 64E and SR 1700) – State Highway Patrol

Interviews will take place on scenario at 11:00 a.m.

HARNETT COUNTY

Traffic control points and security road blocks to be demonstrated during this exercise are:

TCP #2 (SR 1427 and US 401) – State Highway Patrol
TCP #3 (SR 1443 and US 401) – State Highway Patrol
SRB #1 (SR 1415 and US 401) – State Highway Patrol

Interviews will take place on scenario at 11:00 a.m.

LEE COUNTY

Traffic control points and security road blocks to be demonstrated during this exercise are:

TCP #11 (US 1 and NC 87/US 15-501) – State Highway Patrol
TCP #12 (US 1 and US 421) – State Highway Patrol
SRB #1 (SR 1406 and SR 1431) – State Highway Patrol

Interviews will take place on scenario at 11:00 a.m.

WAKE COUNTY

Traffic control points and security road blocks to be demonstrated during this exercise are:

TCP #8A (NC 55 and Hunter Street) – Wake County Sheriff's Department
TCP #8B (NC 55 and S. Hughes Street) - Wake County Sheriff's Dept.
TCP #8C (US 64 and Laura Duncan Road) – Wake County Sheriff's Dept.

Interviews will take place on scenario between 1200 and 1400 hrs.

OBJECTIVE #18

Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

CHATHAM COUNTY

Chatham County Department of Social Services and the American Red Cross will open Jordan Matthews High School for a reception center. Department of Social Services staff will complete registration of 6 individuals. Siler City VFD will be responsible for personnel monitoring and decontamination. Monitoring personnel will monitor six (6) evacuees. The process for decontamination will be simulated via a walk through. Two (2) general public vehicles will be monitored and decontaminated (With water ONLY). Demonstration will take place Off-Scenario **Thursday, April 12, 2001 at 1900 hrs.**

HARNETT COUNTY

Harnett Central High School will be opened for a reception center. Monitoring personnel will be present to monitor six (6) evacuees. The process of decontamination will be simulated via a walk through. Two (2) general public vehicles will be monitored and decontaminated (With water ONLY). This demonstration will take place Off-Scenario **Monday, April 2, 2001 at 1930 hrs.**

LEE COUNTY

West Lee Middle School will be opened as a reception center. The Sanford Fire Department will be present to monitor six (6) evacuees. The process of decontamination will be simulated via a walk through. Two (2) general public vehicles will be monitored and decontaminated (With water ONLY). This demonstration will take place Off-Scenario **Wednesday, April 4, 2001 between 1900 to 2100 hrs.**

WAKE COUNTY

Carroll Middle School will be opened as a reception center. Monitoring personnel will be present to monitor six (6) evacuees. The process of decontamination will be simulated via a walk through. Two (2) general public vehicles will be monitored and decontaminated (With water ONLY). Discussion and demonstration will take place Off-Scenario, **Monday April 9, 2001 at 1600 hrs.**

OBJECTIVE #19

Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for the congregate care of evacuees.

CHATHAM, HARNETT, LEE AND WAKE COUNTIES

Using established guidelines, the respective County Department of Social Services and American Red Cross personnel will discuss the shelter layout and demonstrate the registration procedures for six (6) evacuees at congregate care facilities. Demonstrations will take place Off-Scenario at the following locations:

Chatham County – Jordan Matthews High School on **Thursday, April 12, 2001 at 1900 hrs.**
Harnett County – Harnett Central High School on **Monday, April 2, 2001 at 1900 hrs.**
Lee County – West Lee Middle School on **Wednesday, April 4, 2001 at 1900 hrs.**
Wake County – Sanderson High School on **Monday, April 9, 2001 at 1800 hrs.**

The Shelter Manager, registration personnel and medical support staff will be available at the center for interviews.

OBJECTIVE #20
Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.

WAKE COUNTY

The Cary EMS and appropriate area fire department will respond to an accident scene. Cary EMS will prepare the victim to prevent the spread of contamination and transport the contaminated, injured patient to Rex Health Care. Patient will be monitored at Rex Health Care. Demonstration of this activity will take place Off-Scenario **Wednesday, April 11, 2001 at 1800 hrs.**

OBJECTIVE #21
Demonstrate the adequacy of equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

WAKE COUNTY

The Rex Health Care staff will demonstrate the ability to receive and treat an injured, contaminated patient in accordance with appropriate standards. Demonstration of this capability will occur Off-Scenario **Wednesday, April 11, 2001**, beginning with field activities at 1800 hrs, to be followed by the hospital demonstration.

OBJECTIVE #22
Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment, and vehicles.

CHATHAM, HARNETT, AND LEE COUNTIES

Each County will establish and demonstrate the functions of an Emergency Worker Decontamination Station. Monitors will be present for monitoring personnel, equipment, and vehicles. One (1) person and one (1) vehicle will be monitored. Decontamination of personnel will be simulated via a walk through and discussion. One vehicle will be decontaminated (With water ONLY) for demonstration purposes.

Chatham County – At the First Health of the Carolinas base, located at 1456 US Highway 64 East. The demonstration will take place Off-Scenario **Thursday, April 12, 2001 at 2030 hrs.**

Harnett County – At the Angier Fire Department, 309 North Broad Street, Angier. The demonstration will take place Off-Scenario **Monday, April 2, 2001 at 2100 hrs.**

Lee County – At the Northview Fire Department, 104 Perkenson Road, Sanford. The demonstration will take place Off-Scenario **Tuesday, April 3, 2001 at 2030 hrs.**

WAKE COUNTY

Emergency worker decontamination will be demonstrated at Raleigh Fire Department #14 in conjunction with the MS-1 Drill. Firemen will monitor Wake EMS personnel and their ambulance. The firemen will demonstrate their ability to monitor and decontaminate the ambulance (With water ONLY). This objective will be demonstrated in sequence with the MS-1 Drill which begins at **1800 hrs Wednesday, April 11, 2001.**

OBJECTIVE #23

Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations.

STATE OF NORTH CAROLINA

Emergency Management and Radiation Protection will demonstrate this objective with appropriate requests for resources from the private sector, federal government and other states as determined by the exercise scenario.

CHATHAM, HARNETT, AND LEE COUNTIES

The Counties will demonstrate this objective by requesting assistance from the North Carolina State Highway Patrol to man the traffic control points and security road blocks.

WAKE COUNTY

Wake County will demonstrate this objective by requesting additional assistance from the North Carolina State Highway Patrol in the performance of traffic control point operations. The request will be made from the Wake County EOC to the North Carolina State EOC to have a number of troopers and their patrol vehicles report to the Apex Staging Area for assignment to field locations.

OBJECTIVE #30

Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

STATE OF NORTH CAROLINA

The State of North Carolina will demonstrate an actual shift change by replacing key staff members during the exercise. The initial activation will take place with one staffing group in key EOC positions. At some point prior to the Site Area Emergency, key staff members will conduct a change of personnel. A listing of EOC staff showing 24-hour operations capability will be available for review.
Key SERT officials are as follows:

SERT Leader, SERT Operations Officer, SERT Technical Advisor, SERT Radiation Protection Advisor, Emergency Services Supervisor, Human Services Supervisor, Infrastructure Supervisor, Logistics Supervisor, Information & Planning Supervisor

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

The Counties will demonstrate an actual shift change by replacing key staff members during the exercise. The initial activation will take place with one staffing group in key EOC positions. At some point prior to the Site Area Emergency, key staff members will conduct a change of personnel. A listing of EOC staff showing 24-hour operations capability will be available for review.

Key officials in each county are as follows:

Chatham County:	County Management, Emergency Management, Department of Social Services, Sheriff's Department, Fire Department, and Emergency Medical Service.
Harnett County:	Emergency Services Manager, Sheriff's Department, Emergency Medical Services, Fire, Public Information, Department of Social Services, Health Department, County Manager, School System and Cooperative Extension Service.
Lee County:	Emergency Management, Lee County Commissioners, Sanford Mayor/City Council, Lee County Manager, Sanford City Manager, Lee County Sheriff's Department, Sanford Police Department, Sanford Fire Department, Lee County Rescue Squad, Emergency Medical Service, and American Red Cross.
Wake County:	EOC Manager, Sheriff's Department, Fire/Rescue, Emergency Medical Services, Wake County Human Services, Public Schools, Public Information.

OBJECTIVE #32
Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

STATE OF NORTH CAROLINA

The capability to react and make appropriate notifications in an unannounced drill will be demonstrated off-scenario at some point during one of the weeks in April when FEMA evaluators are in North Carolina for off-scenario field activities. A call will be made from the Harris Plant to the State Warning Point. The Warning Point will then notify the State EOC. Communications Officers in the State EOC will make appropriate notifications in accordance with procedures. The demonstration will take place between Monday, April 23rd between 1600 and 2000.

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

The capability to react and make appropriate notifications in an unannounced drill will be demonstrated off-scenario at some point during one of the weeks in April when FEMA evaluators are in North Carolina for off-scenario field activities. A call will be made from the Harris Plant to the County Warning Points. The Warning Points will then provide the evaluator with a copy of the county notification procedures and notification listing. The demonstration will take place between Monday, April 23rd between 1600 and 2000.

OBJECTIVE #33
Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.

STATE OF NORTH CAROLINA

The notification for unannounced drill will take place with the initial calls taking place after 1800 hrs. Further notifications to activate appropriate response personnel will follow initial notification as appropriate in accordance with State procedures. The demonstration will take place between Monday, April 23rd between 1600 and 2000 in conjunction with Objective #32

CHATHAM, HARNETT, LEE, AND WAKE COUNTIES

The notification for unannounced drill will take place with the initial calls taking place after 1800 hrs. Further notifications to activate appropriate response personnel will follow initial notification as appropriate in accordance with each County's procedures. The demonstration will take place between Monday, April 23rd between 1600 and 2000 in conjunction with Objective #32.

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events, Exercise Scenario, which was used as the basis for invoking emergency response actions by OROs in the Shearon Harris Nuclear Power Plant exercise on April 24, 2001.

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

04/24/01 HNP Exercise - Off Site Radiological Impact & Basis

The 2001 Harris Plant Biennial NRC & FEMA Evaluated Exercise will include a scenario involving mechanical damage to the nuclear fuel cladding. The accident scenario will be limited to this cladding damage (i.e., there will be no fuel overheat or fuel melt contributor to the source term).

The scenario will begin with the plant having operated for an extended period of time at full power. The scenario will be conducted from the plant's training simulator allowing real time operational decision-making and operator response actions. As such the specific plant radiological effluent monitor readings could be a few percent higher or lower than were identified during developmental activities.

Dose assessment and radiological consequence projections used in emergency response are, by nature, conservative. As such, the modeled field readings, deposition and sample readings have been prepared to present data which is somewhat lower than the State and utility assessment models would yield. The field data is associated with the simulated releases as listed below. Topography and building wake are assumed to have no impact on the data. Standard assumptions for atmospheric mixing depth have been used and decay during transient has not been included in the calculations.

Predominantly steady meteorological conditions were used for the release impact calculations. Winds will be steady from 225 ^{0} at 4 MPH. Atmospheric stability class "E" has been modeled for the releases.

The scenario will include one radiological release with measurable off-site consequences. This will be preceded by two additional extremely minor releases of noble gases without measurable off-site consequences.

Release #1:

At approximately 09:30 fuel cladding damage will be initiated. This will result in increased Reactor Coolant System (RCS) radioactivity levels. As a result of normal RCS "Identified Leakage" (0.03 GPM) into the containment, very slight increases in airborne activity will be present. During normal plant operation, the Containment Purge system circulates a small amount of air through the containment building to maintain the building at a slight vacuum.. The exhaust air from containment is processed through HEPA filter trains. The exhaust from these filters mixes with other ventilation flows and is exhausted through the Plant Vent Stack #1 to the atmosphere. The amount of flow varies depending on multiple factors influencing containment vacuum. The maximum possible release rate from this event is in the range of 40 µCi/sec of Noble Gas prior to flow isolation. This release is not detectable off-site. *Note that the sequence of events and plant conditions could potentially make this release so small that it would be below the detection threshold.*

Release #2:

At 13:45 a Steam Generator tube rupture occurs. This results in a 450 gpm leak from the RCS into the "A" Steam Generator. Note that this flow rate decreases as operators respond to the event (dropping to approximately 200 gpm near the end of the scenario). For the first 20 minutes of this event, the radioactivity leaking into the secondary side of the steam generators is contained within the secondary system with the condenser vacuum pumps drawing off non-condensable gases. These gases are processed through ventilation systems resulting in only Noble gases being released. These are released via the Turbine Bldg. vent stack. At 14:05 the "A" Steam Generator will be isolated from the remainder of the steam and condensate systems preventing further addition of radioactivity into the system. This minimal release will continue throughout the duration of the exercise due to the presence of this radioactivity in the condenser. Again, this is a negligible release, on the order of 50 µCi/sec, and is not detectable off-site.

Release #3:

At 14:05 a Safety Relief Valve on the "A" Steam Generator opens providing a direct release pathway from the affected Steam Generator to atmosphere. The flow rate and activity in this steam release vary only slightly over the duration of the release. The Steam Generator tubes remain covered for the duration and therefore most, but not all, of the particulate and iodine components of the release are retained in the generator. The release will be terminated at 15:05 as plant staff is successful in installing a gagging device on the safety valve, forcing the valve closed. The average release rates for this release are:

Noble Gas component:	1.16 Ci/sec (equates to a Xe-133 Equiv. 11.3 Ci/sec)
Halogens Component:	0.021 Ci/sec (equates to a I-131 Equiv. 0.00737 Ci/sec)
Particulates Component:	0.0022 Ci/sec (equates to a Cs-137 Equiv. 0.0025 Ci/sec)

The release results in the following measurable off-site consequences:

- CDE Thyroid Dose of 1.92 Rem at the Site Boundary and 60mRem @ 5 miles.
- TEDE Dose 183 mRem at the Site Boundary and 5.7mRem @ 5 miles
- The following Plume Centerline dose rates will be present in the field:
  - 36 mR/hr at 0.5 miles
  - 6 mR/hr at 2 miles
  - 2 mR/hr at 5 miles
  - The release will be detectable out to seven miles at the end of the exercise.

Following this page is a Map showing Plume Centerline along with lines indicating 10% of and 1% of Centerline values for this release.

Data sheets following the map provide the centerline values for direct radiation measurements and sampling related results: This data is provided at 15 minute intervals.

- As indicated on the sheets, Interval 1 corresponds to prior to 14:15 (all items are "as Read" (i.e., background or < MDA).
- Intervals 2 through 8 correspond to 15 minute intervals of 14:15 through 15:45. Data from the preceding interval is to be used until the time indicated at the top of the next interval.
- Data for each interval is provided on 3 sheets.
  - Sheet 1 corresponds to field readings formatted for CP&L personnel and equipment* (State data packages do not contain this sheet)
  - Sheet 2 corresponds to field readings formatted for State of NC DRP personnel and equipment* (CP&L data packages do not contain this sheet)
  - Sheet 3 provides filed sample and lab analysis results applicable to both NCDRP and CP&L

* Refer to footnotes for upper ranges of applicable instruments. Readings greater than upper range are provided such that off centerline (10% and 1% values) can be presented.

2001 HNP EVALUATED EXERCISE TIME LINE (08:30 - 16:00)	
08:30	04/24/01 Start of Drill related activities at Harris Plant
09:07	A small fire, affecting one of the safety related Charging Pumps (Reactor Coolant System inventory control) is detected.
09:15 - 09:30	**Alert (EAL 10-1-2)** declared at about this time based on a fire affecting safety related equipment.
09:30	Approximate time for start of the alternate Charging Pump and indication of loose material introduced into the Reactor Coolant System.
09:40	Loose material within the Reactor Coolant System results in perforation of the cladding on some reactor fuel rods. Fuel failure indications begin to appear and the Fuel Fission Product Barrier will be identified as breached (No change in event classification).
10:15	The Harris TSC & EOF Emergency Response Facilities should be activated near this time. The Joint Information Center would be in operation shortly thereafter.
11:50	The alternate Charging Pump will fail.
12:00 – 12:15	**Site Area Emergency (EAL 8-2-3)** declared at about this time for a loss of function needed to achieve shutdown.
13:30	Anticipated restoration of charging capability via the 3rd charging pump.
13:45	"A" Steam Generator Tube Rupture occurs (Breach of the Reactor Coolant System Fission Product Barrier) and a monitored Noble Gas release to the environment begins.
14:05	One of the Safety Relief valves on the affected Steam Generator opens and sticks open. This is a breeach of the Containment Fission Product Barrier
14:10 – 14:25	**General Emergency (EAL 2-1-4)** declared at about this time. Prevailing wind direction from 225 °. Radiological release will include an Iodine component. Off site dose rates of 36 mR/hr will be detected at ½ mile with measurable dose rates out to 7 miles. Dose assessment results will confirm the adequacy of the plant condition based PARs (no need to evacuate any further than 2/5).
15:15	Team successful in gagging the "A" SG Safety valve and release is terminated.
16:00	Approximate time of Exercise Termination.

APPENDIX 5

MEDICAL DRILL

Shearon Harris Nuclear Power Plant

Medical Drill

July 12, 2001

Rex Hospital, Raleigh, North Carolina

The Shearon Harris Nuclear power plant medical drill was conducted on July 12, 2001. The accident site was located outside of the 10-mile EPS where two vehicles collided in the parking lot, resulting in one driver receiving a bump on the head and some minor lacerations to the palm of his right hand and right forearm. The injured driver crawled around on the ground where boxes with radioactive materials had broken. He became contaminated as a result. The uninjured driver called in the accident to the Wake County Central Dispatcher. The Raleigh Fire Department Station 14, the Raleigh Fire Department HazMat Team and the Raleigh Emergency Medical Services also responded to the call.

The Raleigh Fire Department personnel went in briefly, examined the area and talked to the patient from a distance. They called the Raleigh Fire Department HazMat Team, that went in to care for the patient. They surveyed the area, set up roped barriers around the area, treated the patient, wrapped him in plastic and a sheet, and appropriately carried him out of the area to waiting the Raleigh Emergency Medical Services (EMS) personnel. The Raleigh Fire Department and Raleigh Fire Department HazMat teams wore protective clothing, self-reading and permanent dosimetry, were knowledgeable of exposure limits and turn back values and used appropriate monitoring and contamination control measures in treating the patient and protecting themselves.

The Raleigh EMS personnel correctly received the patient, had placed a protective covering on the ambulance floor and sides, and wore protective clothing, and had self-reading and permanent dosimetry. On arrival at the Rex Hospital, they briefed the medical facility personnel on the patient and the contamination on him. After monitoring of the patient by the hospital staff, the patient was placed on a clean gurney and was carried into the ER. Staff wore appropriate self-reading and permanent-record dosimetry, read it consistently, and changed gloves and drapes while trying to decontaminate each wound. The ER staff provided an opportunity for staff to participate during the medical drill.

a. **MET:** Objectives 5 and 20

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:**

Issue No: 30-01-21-A-01

Description: In the Emergency Room, the Emergency Room (ER) personnel used inappropriate monitoring, contamination control and decontamination procedures. The physician who decontaminated at least two injured areas, hastily washed the wounds with solutions from a syringe, from which he allowed contaminated solutions to splash on other ER personnel, the decontamination tray and the floor. This was done continuously. Contaminated water was allowed to puddle in the decontamination tray because of poor drainage. While surveying the patient and personnel, the monitor allowed the glove fingers from the probe to touch the patient and personnel without changing the probe. While decontaminating the head of the patient, the ER personnel allowed the contaminated solutions to run down into the patients' hair, allowing the spread of contamination, which they should have controlled. At points the ER staff seemed unsure about what procedures to follow because no monitoring, contamination control or exit procedures were posted on the wall for ER personnel to follow. Nasal, wound, salvia nor ear samples were not fully taken to determine if the patient had some internal contamination.

Recommendation: The Emergency Room personnel at the Rex Hospital should be provided training in appropriate monitoring, contamination control and decontamination procedures.

Schedule of Corrective Actions: To be provided.

d. **NOT DEMONSTRATED:** NONE

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

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